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.

Houston School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	7300 Rural Ln.	Enrollment	391
	Philadelphia, Pa 19119	Grade Range	'00-08'
Phone/Fax	215-248-6608 / 215-248-6683	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Houston	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	**39.42%**	**$15,011,866**	**$38,082,471**
Building	40.31 %	$14,624,204	$36,276,843
Grounds	21.47 %	$387,662	$1,805,628

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	00.00 %	$0	$1,070,306
Exterior Walls (Shows condition of the structural condition of the exterior facade)	01.56 %	$41,574	$2,657,520
Windows (Shows functionality of exterior windows)	00.82 %	$10,592	$1,296,720
Exterior Doors (Shows condition of exterior doors)	35.39 %	$36,951	$104,400
Interior Doors (Classroom doors)	16.52 %	$41,743	$252,720
Interior Walls (Paint and Finishes)	04.45 %	$50,804	$1,140,480
Plumbing Fixtures	00.00 %	$0	$973,440
Boilers	00.00 %	$0	$1,344,240
Chillers/Cooling Towers	63.72 %	$1,123,153	$1,762,560
Radiators/Unit Ventilators/HVAC	177.47 %	$5,493,077	$3,095,280
Heating/Cooling Controls	158.90 %	$1,544,551	$972,000
Electrical Service and Distribution	99.96 %	$698,095	$698,400
Lighting	34.29 %	$856,239	$2,496,960
Communications and Security (Cameras, Pa System and Fire Alarm)	73.42 %	$686,656	$935,280

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.

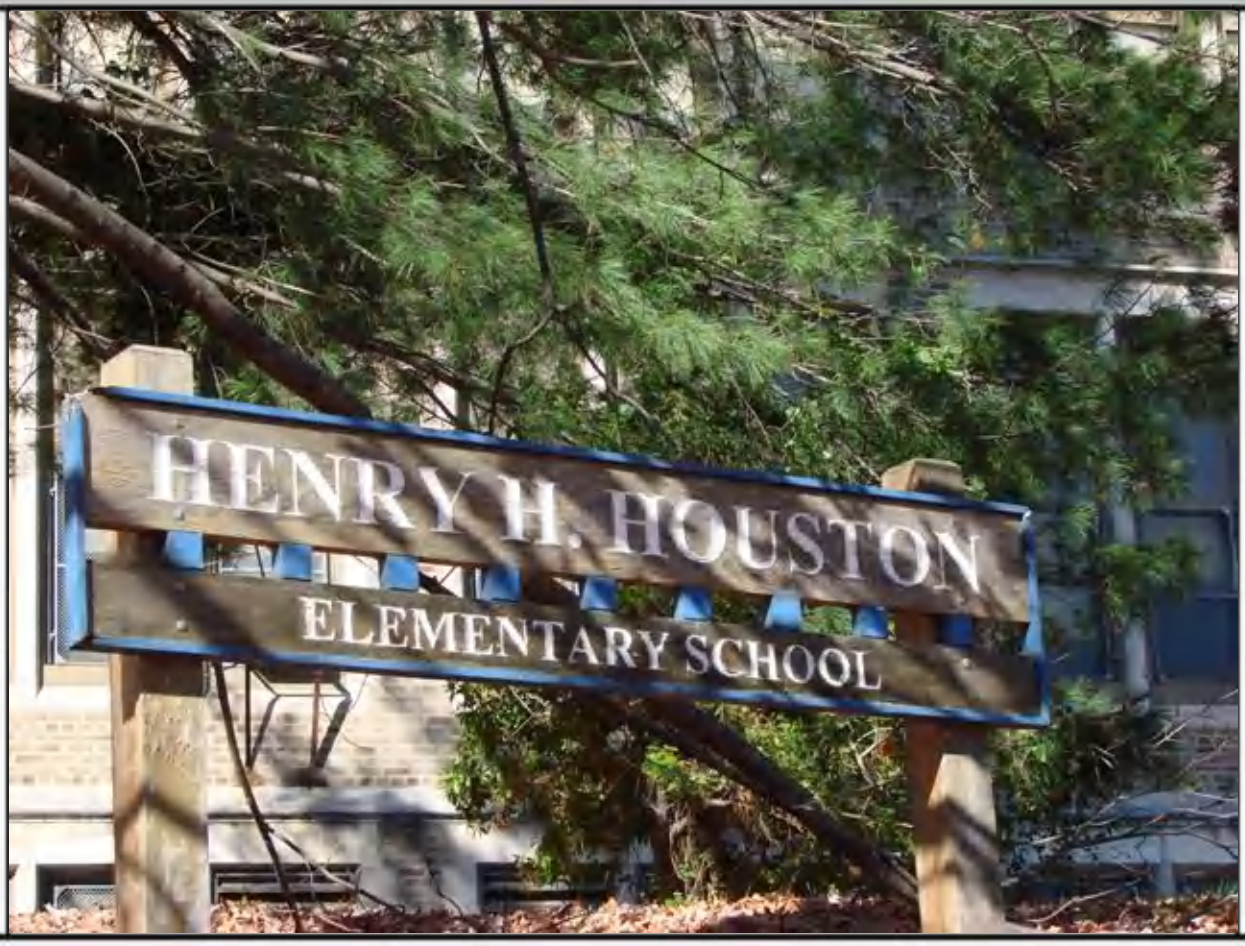
School District of Philadelphia

S626001;Houston

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):	72,000
Year Built:	1927
Last Renovation:	
Replacement Value:	$38,082,471
Repair Cost:	$15,011,865.87
Total FCI:	39.42 %
Total RSLI:	65.72 %

Description:

Facility Assessment
September 2015

School District of Philadelphia
Houston Elementary School
7300 Rural Ln
Philadelphia, PA 19119

72,000 SF / 656 Students / LN 04

GENERAL

The Houston School building is located at 7300 Rural Ln in Philadelphia, PA. The 3 story, 72,000 square foot building was originally constructed in 1927. The building has a basement partially above ground and stair tower for access to the roof. A major addition was added onto the southwest corner of main building in 1970 that included a gym, auditorium and classrooms; Portable classrooms were added in approximately 1992.

The Facility Area Coordinator was not able to accompany the Parsons Assessment team on this site visit. Mr. Darryl Lucas, the Building

Engineer, accompanied us on our tour of the school and provided us with detailed information on the building systems and recent maintenance history.

STRUCTURAL/ EXTERIOR CLOSURE:

The building typically rests on concrete foundations and bearing walls that are not showing signs of settlement or water penetration. Foundation walls do not show signs of deterioration. The basement slab does not show signs of heaving.

The main structure consists typically of cast-in-place concrete columns, beams and one-way concrete slabs. Long slab spans are supported with steel truss girders. The floor slabs and superstructure are generally in good condition.

The roof structure is typically similar to floor construction.

The building envelope is typically masonry with face brick with decorative stone friezes and quoining. Main entrance is accentuated with stone columns and arch. In general, masonry is in good condition except on the second floor of the east elevation the window lintels are in poor condition.

The original building windows were retrofitted in 1990's with extruded aluminum double hung windows single glazed with acrylic glazing; original wood frames are left in place. Basement windows are fitted with galvanized steel security screens. All windows are generally in good condition.

Roofing is typically built-up. All roofing and flashing is typically in fair condition.

Exterior doors are typically hollow metal in fair condition, weather-stripping is missing installed.

INTERIORS:

Partition wall types include plastered ceramic hollow blocks and painted CMU. Corridors and stairways have marble wainscot.

The interior wall finishes are generally painted plaster or CMU and some painted brick. Walls in toilets are covered with ceramic tile installed in 2000. Generally, paint is in fair condition with some deterioration in auditorium, stairways and other spaces.

Most ceilings are painted plaster in classrooms, auditorium and gym; some water damage has been observed. 2x4 suspended acoustical panels are installed in some classrooms (mainly 3rd floor), offices and library; cafeteria and kitchen has 1x1 perforated metal tiles with concealed grid in poor condition and deteriorating.

Flooring in gym is hardwood, (30% requires replacement; 70% requires refinishing); and sealed concrete in most corridors. Some classrooms have VCT installed in mid 1990's; approximately 20% is in poor condition. Floor in toilets is typically ceramic tile installed in 2000. Office spaces floor is VAT.

Cafeteria flooring is VCT recently installed. Kitchen flooring is epoxy coating that is peeling in many areas.

Main entrance hallway floor has a combination of terrazzo and marble finish in good condition. A new carpet was installed in the library in 2014.

Interior doors are generally rail and stile wood doors, most glazed, in wood frames with transoms and solid core in hollow metal frames. Doors are typically in good condition. Most doors are fitted with door knobs and are not ADA compliant.

Fittings include original chalk boards, generally in poor condition. Toilet partitions and accessories in are in very good condition, installed in 2000 and ADA compliant; handrails, generally in good condition. Interior identifying signage is typically directly painted on wall or door surfaces generally in poor condition.

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

Furnishings include fixed casework in classrooms, corridors and library, generally in good condition; window shades/blinds, generally in good condition; fixed auditorium seating is original, generally in fair condition. Lockers are built-in along corridor walls and in good condition.

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

Furnishings include fixed casework in classrooms (built-in cabinets), in poor condition; there is no fixed seating in auditorium/gym.

CONVEYING SYSTEMS:

No elevator.

GROUNDS (SITE):

There are two staff parking locations on site. There's a fenced in lot on the northwest corner of the site accessible from Rural Lane and another area directly behind the Element-2 wing (1970). Pavement is in very poor condition, striping is deteriorated with no accessible stalls or signage.

There is new playground at the northeast side of the site. There is extensive landscaping along Rural Lane and West Allens Lane fronting the main building.

ACCESSIBILITY:

The building does not have an accessible entrance and accessible route. Ramps need to be installed throughout the building where floors change elevation. The toilets are equipped with accessible fixtures, partitions and accessories, such as grab bars. Most doors in the building do not have ADA required door handles.

MECHANICAL

Plumbing Fixtures

The original plumbing fixtures were replaced in approximately 2005, according to the Building Engineer. Fixtures in the restrooms on each floor consist of wall mounted push button flush valve water closets, wall hung urinals, and lavatories with wheel handle faucets. Each floor has handicap accessible stalls. These fixtures are in good condition and should provide reliable service for the next 20-25 years.

Drinking fountains in the corridors consist of stainless steel handicap accessible wall hung fixtures with integral refrigerated coolers. The fixtures are in good condition and the district should provide reliable service for the next 8-12 years.

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

The Kitchen has one (1) sink; a three-compartment stainless steel prep sink with lever operated faucets. Chemicals are injected manually into the sanitizing basins.

Domestic Water Distribution

A 3" city water service enters the Cafeteria in the basement from West Allens Lane on the South East side of the building. A water meter or backflow preventer was not seen during the site visit and it is unknown were they are installed. Duplex skid mounted 5HP Bell and Gossett domestic pressure booster pumps are installed on the domestic water line to ensure adequate pressure throughout the building. The pumps show signs of rust damage and should be replaced. The original domestic hot and cold water distribution piping was replaced with copper piping and sweat fittings. The maintenance staff reports no significant problems with scale build up in the domestic piping and the supply is adequate to the fixtures, but the piping has been in use for an unknown amount of time and should be inspected and repaired as necessary by a qualified contractor.

Two (2) Paloma instant hot water heaters, installed in 2003 and 2009 respectively, with associated circulating pumps supply hot water for domestic use. The units are located in the boiler room and were operable during the site visit. The Building Engineer reported no serious issues; however one (1) of the units is approaching the end of its service life and should be replaced in the next 3-5 years.

Sanitary Waste

The original sanitary sewer piping is still in use and is threaded galvanized piping. Extensive repairs have been made with galvanized

piping and no-hub fittings.

The maintenance staff reported mostly minor problems with the sanitary waste piping systems. The original sewer piping has been in service for 90 years and will require more frequent attention from the maintenance staff as time passes. The District should hire a qualified contractor to examine the sanitary waste piping using video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

The building does not have a sewage ejector or sump pump.

Rain Water Drainage

Rain water drains from the roof are routed through mechanical chases in the building and appear to be original. The piping is galvanized piping with threaded fittings and has been in use well beyond its service life. The Building Engineer reported the rain leaders have backed up in the past. The District should hire a qualified contractor to examine the rain water drainage piping using video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

Energy Supply

An 8" city gas service enters the building from West Allens Lane. The gas meter is 4" and is located in the former coal/ash room. A gas booster pump is installed in the former coal/ash room but is not connected to the gas service.

The reserve oil supply is stored in a 10,000 gallon underground storage tank (UST) located in the parking lot on the East side of the school. Duplex pumps located in the basement boiler room 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 storage tank should be inspected on a regular basis. USTs have an anticipated service life of 20 years. The actual condition of the fuel side is unknown.

Heat Generating Systems

Low pressure steam is generated at a maximum of 15 lbs. /sq. in., typically 3-5 lbs. /sq. in., by two (2) 156HP Weil-McLain model 94 cast iron sectional boilers, installed in 2006. Each boiler is equipped with a Webster Cyclonetic burner designed to operate on natural gas or fuel oil. Combustion air makeup is supplied by louvers equipped with motorized dampers. Burner controls provide full modulation with electronic ignition and digital flame sensing. Burner oil pumps are not driven by the fan motor. The gas train serving the boilers appears to have code required venting of the regulators and dual solenoid valves with venting of the chamber between. The boilers are equipped with dual fuel burners but natural gas is the main fuel source. Condensate makeup water is supplemented with chemically treated city water from a Marlo water treatment system. Cast iron sectional boilers have an anticipated service life of 35 years or more; these units have been in service approximately 10 years. The District should provide reliable service for the next 20-25 years.

A condensate receiver with duplex pumps, located in a pit in the Element 2 mechanical room, returns condensate to the boiler room in Element 1. This condensate receiver is covered in rust, looks to be in poor condition, and should be replaced. A second condensate receiver with duplex 3/4HP pumps and a boiler feed tank assembly with three (3) 3/4HP pumps headered together is installed in the boiler room. The condensate receiver was installed in 2006 when the boiler room was renovated and is in good condition. The soft water piping connection at the top of the boiler feed tank is leaking, which has caused rust to form on the tank. The Building Engineer said a work order is in to repair the pipe leak. Once the leak has been repaired the tank should be monitored closely as its service life has most likely been reduced. The feed pumps appeared to be in good condition. The Building Engineer reported no steam in the boiler room when he runs the boiler.

Distribution Systems

Steam piping is black steel with welded fittings. The condensate piping is black steel with threaded fittings. Steam and condensate piping mains from the basement level run up through the building to the radiators and unit ventilators on all three floors. The distribution piping has been in use well beyond its service life and will require more frequent attention from the maintenance staff to address pipe/valve failures as time passes. The District should hire a qualified contractor to examine the steam and condensate piping and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 10 years.

Two pipe cast iron radiators and the house fan provide heating for Element 1. The radiators and house fan are original to the building and well beyond their service lives. The house fan is located in a mechanical room in the basement and has been refurbished in the recent past, but the Building Engineer did not know when. The fan is run by a 15HP motor and is only used on very cold days.

Ventilation for Element 1 is provided by the house fan when it is in use, 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.

Unit ventilators and fin tube radiators provide heating for Element 2. Ventilation for Element 2 is provided by wall openings in the unit ventilators. The unit ventilators and fin tube radiators are well beyond their service lives. The existing unit ventilators should be removed and new units installed with hot and chilled water coils and integral heat exchangers to introduce sufficient outdoor air to the building. A new heating system should be installed to meet ventilation requirements and achieve more efficient operation

Ventilation is provided to the Cafeteria by five (5) unit ventilators with supplemental head provided by fin tube radiators; this does not meet current code required ventilation requirements. Heat is provided to the Gymnasium by cast iron radiators; this does not meet current code required ventilation requirements. Ventilation is provided to the Auditorium by two (2) heating and ventilation units that are well beyond their service lives; fin tube radiators supply supplemental heating. Ventilation should be provided for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers. Ventilation should be provided for the Gymnasium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the window openings. Similar units could be installed for the administration offices. Ventilation should be provided for the Auditorium by installing a constant volume air handling unit with distribution ductwork and registers.

Mechanical ventilation for the restrooms and Kitchen is provided by roof mounted exhaust fans; five (5) fans on the roof of Element 1 and two (2) fans on the roof of Element 2. The Building Engineer reported no issues with the fans and they appeared to be in good condition; the District should provide reliable service for the next 5-8 years. Element 1 has gravity ventilators on the roof for relief air. Six (6) power ventilators; five (5) on the roof of Element 2 and one (1) on the roof of the portable, allow relief air from the building. The Building Engineer did not report any issues.

Terminal & Package Units

Several of the classrooms in the school building have window air conditioning units that have an anticipated service life of only 10 years. Installing a 200 ton air-cooled chiller, with pumps located in a mechanical room, and chilled water distribution piping would supply more reliable air conditioning for the building with a much longer service life.

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

One (1) kitchen hood with an integral Sentinel fire suppression system is installed above the gas range. An automatic gas shutoff system is NOT installed with the kitchen equipment; the kitchen hood is beyond its service life and should be replaced. A make-up air unit is not installed but should be.

Controls & Instrumentation

The original pneumatic systems provide no control functions. Pneumatic room thermostats are intended to control the steam radiator control valves; several thermostats have been replaced with digital versions. In reality the radiator control valves are wide open and heating control is achieved via the boilers and house fan. Pneumatic control air is supplied by a Quincy air compressor and Hankison air dryer. The pneumatic systems are beyond their service life and are no longer functional. The original control valves and pneumatic actuators are beyond their service life and should be rebuilt or replaced. These controls should be converted to DDC.

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

Sprinklers

The school building is NOT covered by an automatic sprinkler system. 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 is equipped with fire standpipes in the fire towers within Element 1. The piping appears to be in good condition, the installation date of the piping is estimated to be approximately 1990.

Portable Classroom

A portable classroom located on the North side of the main school building houses the IMC. The portable has independent conditioning systems from the main building. A packaged rooftop unit provides heating and cooling to the IMC. The Building Engineer reported that the rooftop unit was replaced in 2015. The roof of the portable was not accessible during the site visit and further information on the packaged unit is not available.

ELECTRICAL:

Site electrical service - The primary power is at 13.2KV from the power poles feeding a transformer in a vault outside the school building. The secondary power from the vault is brought into the school building in the electrical room. It feeds an old 600A, 120V/240 V, 2 phase switchboard. There is also a 75 KVA phase transformer to convert 120V/240V system to 120V/208V, 3 phase system for some of the loads. The PECO meter (PECO 222WU – 30276) is also located inside the new electrical room. The switchboard is not in a good condition and has reached the end of its useful service life.

Distribution system - The electrical distribution is accomplished by using the 600A switchboard distribution panel (located in the electrical room) and feeding several 120V lighting and receptacle panels throughout the building. These panels (with the exception of IT panels) are old and not in good condition. They have reached the end of their useful service life.

Receptacles - The receptacles in classrooms, computer rooms, libraries, and other areas are not adequate. The walls in classrooms and the computer rooms require minimum two receptacles.

Lighting - Interior building is illuminated by various types of fixtures. They include fluorescent lighting (mostly with T-12 lamps and T-8 lamps) in majority of the areas, including; classrooms, corridors, offices, Library, cafeteria, Kitchen and a small Gymnasium. Surface or pendant mounted industrial fluorescent fixtures are used in mechanical and electrical rooms. Although about 30% of the school lighting was upgraded, the majority of the building (70%) lacks adequate illumination level. The majority of interior lighting fixtures are in a poor condition and have reached the end of their useful service life.

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

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

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

Clock and Program system - Clock and program systems are not working adequately. Some of the classrooms are provided with 12-inch wall mounted, round clocks, however, the clocks are not controlled properly by central master control panel.

Television System - Television system is not provided for the school. There are smart boards in most of the classrooms capable of connecting to computers and internet.

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

Emergency Power System – There is an old emergency generator in the electrical room, however, it is old and has reached the end of its useful service life.

Emergency lighting and exit lights - there are insufficient number of emergency lights/exit lights in the corridors and other exit ways. The present exit lights/ emergency lights are old and have reached the end of their useful service.

Lightning Protection System - There is adequate lightning protection system installed in the school. There are several lightning rods

installed on the roof. These lightning rods are properly connected to the ground using stranded aluminum cables from the roof top all the way to the ground floor.

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

Site Lighting - The school has some exterior lighting. However, a few pole-mounted lights are needed to provide adequate lighting for the grounds security and safety of people at night.

Site Paging – The school has some exterior speakers, however a few additional speakers are needed for proper communication with students playing outside.

Elevators – This school has a no elevator

Auditorium - The general lighting in the auditorium is by using decorative incandescent light fixtures. The general lighting is sufficient. However, the stage lighting and controls are outdated and have reached the end of their useful service life. The auditorium sound system is also old and has reached the end of its useful service life.

RECOMMENDATIONS:

- Replace cast stone lintels on second floor east elevation 75LF.
- Refurbish window safety screens on stairwells. 16
- Replace damaged exterior doors. 8
- Repair (15%) and repaint all walls
- Replace all VAT tile.
- Repair (10%) & refinish hardwood flooring (50%).
- Repair (10%) and repaint all ceilings.
- Install new signage throughout.
- Provide ADA compliant hardware on interior doors.
- Replace lockers in corridors
- Provide ADA compliant elevator serving basement and all floors (exterior).
- Refurbish auditorium seating 25%
- Provide ADA compliant ramp at main entrance.
- Replace chain link fence 300LF.
- Resurface and re-stripe parking, replace wheel stops.
- Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for an unknown amount of time, and replace any damaged piping.
- Replace the duplex 5HP domestic water booster pumps and isolation valves on incoming domestic water line with a new skid mounted pressure booster system.
- Replace one (1) existing Paloma instant hot water heater that is approaching the end of its service life.
- Hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Hire a qualified contractor to perform a detailed examination of the rain water drainage piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Replace the existing condensate receiver serving Element 2 which has duplex pumps and is damaged from rust.
- Hire a qualified contractor to examine the steam piping, in service for 90 years, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Remove the existing cast iron steam radiators in Element 1 and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.
- Remove the existing unit ventilators in Element 2 and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.
- Provide ventilation for the Cafeteria by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.
- Provide ventilation for the Gymnasium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the window openings.
- Provide ventilation for the administration offices by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.
- Replace the two (2) existing heating and ventilation units which are beyond their service lives and provide ventilation for the Auditorium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.
- Remove the window air conditioning units and install a 200 ton air-cooled chiller with chilled water distribution piping and

pumps located in a mechanical room to supply more reliable air conditioning for the building with a much longer service life.
- Replace the existing Kitchen exhaust hood which is beyond its service life.
- Install a gas fired make-up air system for the Kitchen exhaust hood.
- Replace the pneumatic controls for the HVAC systems with modern DDC modules, valves and actuators to improve reliability and energy efficiency. Provide a new building automation system (BAS) with communication interface to the preferred system in use throughout the District.
- Install a fire protection sprinkler system with quick response type heads to reduce insurance costs by providing protection for the property. A fire pump may be required depending on the available city water pressure.
- Install a new electrical service to replace the old one and have enough capacity for future mechanical loads.
- Install new distribution panels 4 in each floor plus two in the basement, and one in the kitchen (9 total).
- Install surface-mounted receptacles (two on each wall minimum) in all classrooms and other areas within the building.
- Install new lighting system for 70% of the building.
- Install new automated FA system.
- Install new Clock System.
- Install a new emergency generator.
- Install new emergency exit signs & emergency lights.
- Install a new security system with cameras and CCTV
- Install new auditorium stage lighting & controls, plus new sound system.
- Install additional pole-mounted lights for the grounds
- Install additional exterior speakers for the grounds

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 4 / Tm 4
Status:	Accepted by SDP	Team:	Tm 4
Site ID:	S626001		

Site Condition Summary

The Table below shows the CI and FCI for each major system shown at the UNIFORMAT classification Level II. Note that Systems with lower FCIs require less investment than systems with higher FCIs.

Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	0.00 %	$0.00
B10 - Superstructure	37.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	38.99 %	2.20 %	$89,117.16
B30 - Roofing	50.00 %	0.00 %	$0.00
C10 - Interior Construction	30.38 %	4.05 %	$71,543.08
C20 - Stairs	37.00 %	0.00 %	$0.00
C30 - Interior Finishes	50.59 %	7.22 %	$266,061.54
D10 - Conveying	105.71 %	307.74 %	$1,012,601.25
D20 - Plumbing	83.63 %	75.66 %	$1,112,350.24
D30 - HVAC	102.19 %	101.89 %	$8,160,781.12
D40 - Fire Protection	105.71 %	177.49 %	$1,029,992.15
D50 - Electrical	110.11 %	64.06 %	$2,711,117.16
E10 - Equipment	62.44 %	7.67 %	$87,912.14
E20 - Furnishings	105.00 %	53.94 %	$82,728.50
G20 - Site Improvements	35.13 %	15.09 %	$199,109.17
G40 - Site Electrical Utilities	106.67 %	38.82 %	$188,552.36
Totals:	**65.72 %**	**39.42 %**	**$15,011,865.87**

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)
B626001;Houston	72,000	40.31	$1,029,992.15	$2,556,406.49	$3,316,073.79	$1,288,315.47	$6,433,416.44
G626001;Grounds	83,600	21.47	$0.00	$0.00	$325,318.13	$62,343.40	$0.00
Total:		**39.42**	**$1,029,992.15**	**$2,556,406.49**	**$3,641,391.92**	**$1,350,658.87**	**$6,433,416.44**

Deficiencies By Priority

Budget Estimate Total: $15,011,865.87

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):	72,000
Year Built:	1927
Last Renovation:	
Replacement Value:	$36,276,843
Repair Cost:	$14,624,204.34
Total FCI:	40.31 %
Total RSLI:	66.29 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B626001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S626001		

Condition Summary

The Table below shows the CI and FCI for each major building system shown at the UNIFORMAT classification Level II. Note that Systems with lower FCIs require less investment than systems with higher FCIs.

UNIFORMAT Classification	RSLI %	FCI %	Current Repair Cost
A10 - Foundations	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	0.00 %	$0.00
B10 - Superstructure	37.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	38.99 %	2.20 %	$89,117.16
B30 - Roofing	50.00 %	0.00 %	$0.00
C10 - Interior Construction	30.38 %	4.05 %	$71,543.08
C20 - Stairs	37.00 %	0.00 %	$0.00
C30 - Interior Finishes	50.59 %	7.22 %	$266,061.54
D10 - Conveying	105.71 %	307.74 %	$1,012,601.25
D20 - Plumbing	83.63 %	75.66 %	$1,112,350.24
D30 - HVAC	102.19 %	101.89 %	$8,160,781.12
D40 - Fire Protection	105.71 %	177.49 %	$1,029,992.15
D50 - Electrical	110.11 %	64.06 %	$2,711,117.16
E10 - Equipment	62.44 %	7.67 %	$87,912.14
E20 - Furnishings	105.00 %	53.94 %	$82,728.50
Totals:	**66.29 %**	**40.31 %**	**$14,624,204.34**

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.	72,000	100	1927	2027	2052	37.00 %	0.00 %	37			$1,324,800
A1030	Slab on Grade	$7.73	S.F.	72,000	100	1927	2027	2052	37.00 %	0.00 %	37			$556,560
A2010	Basement Excavation	$6.55	S.F.	72,000	100	1927	2027	2052	37.00 %	0.00 %	37			$471,600
A2020	Basement Walls	$12.70	S.F.	72,000	100	1927	2027	2052	37.00 %	0.00 %	37			$914,400
B1010	Floor Construction	$75.10	S.F.	72,000	100	1927	2027	2052	37.00 %	0.00 %	37			$5,407,200
B1020	Roof Construction	$13.88	S.F.	72,000	100	1927	2027	2052	37.00 %	0.00 %	37			$999,360
B2010	Exterior Walls	$36.91	S.F.	72,000	100	1927	2027	2052	37.00 %	1.56 %	37		$41,574.23	$2,657,520
B2020	Exterior Windows	$18.01	S.F.	72,000	40	1990	2030		37.50 %	0.82 %	15		$10,592.19	$1,296,720
B2030	Exterior Doors	$1.45	S.F.	72,000	25	1927	1952	2042	108.00 %	35.39 %	27		$36,950.74	$104,400
B3010105	Built-Up	$37.76	S.F.	28,300	20	2005	2025		50.00 %	0.00 %	10			$1,068,608
B3010120	Single Ply Membrane	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$38.73	S.F.		25				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	28,300	20	2005	2025		50.00 %	0.00 %	10			$1,698
C1010	Partitions	$17.91	S.F.	72,000	100	1927	2027	2052	37.00 %	0.00 %	37			$1,289,520
C1020	Interior Doors	$3.51	S.F.	72,000	40	1980	2020		12.50 %	16.52 %	5		$41,742.71	$252,720
C1030	Fittings	$3.12	S.F.	72,000	40	1980	2020		12.50 %	13.27 %	5		$29,800.37	$224,640
C2010	Stair Construction	$1.41	S.F.	72,000	100	1927	2027	2052	37.00 %	0.00 %	37			$101,520

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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.	72,000	10	2005	2015	2020	50.00 %	5.34 %	5		$50,804.08	$951,120
C3010231	Vinyl Wall Covering	$0.97	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.	72,000	30	1990	2020		16.67 %	0.00 %	5			$189,360
C3020411	Carpet	$7.30	S.F.	2,000	10	2005	2015	2020	50.00 %	0.00 %	5			$14,600
C3020412	Terrazzo & Tile	$75.52	S.F.	2,400	50	1980	2030		30.00 %	0.00 %	15			$181,248
C3020413	Vinyl Flooring	$9.68	S.F.	24,700	20	2000	2020		25.00 %	66.61 %	5		$159,250.01	$239,096
C3020414	Wood Flooring	$22.27	S.F.	26,200	25	1927	1952	2042	108.00 %	9.60 %	27		$56,007.45	$583,474
C3020415	Concrete Floor Finishes	$0.97	S.F.	16,700	50	1927	1977	2020	10.00 %	0.00 %	5			$16,199
C3030	Ceiling Finishes	$20.97	S.F.	72,000	25	2000	2025		40.00 %	0.00 %	10			$1,509,840
D1010	Elevators and Lifts	$4.57	S.F.	72,000	35			2052	105.71 %	307.74 %	37		$1,012,601.25	$329,040
D2010	Plumbing Fixtures	$13.52	S.F.	72,000	35	2005	2040		71.43 %	0.00 %	25			$973,440
D2020	Domestic Water Distribution	$1.68	S.F.	72,000	25	1980	2005	2042	108.00 %	363.64 %	27		$439,857.31	$120,960
D2030	Sanitary Waste	$2.90	S.F.	72,000	25	1927	1952	2042	108.00 %	169.16 %	27		$353,213.96	$208,800
D2040	Rain Water Drainage	$2.32	S.F.	72,000	30	1927	1957	2047	106.67 %	191.14 %	32		$319,278.97	$167,040
D3020	Heat Generating Systems	$18.67	S.F.	72,000	35	2006	2041		74.29 %	0.00 %	26			$1,344,240
D3030	Cooling Generating Systems	$24.48	S.F.	72,000	20			2037	110.00 %	63.72 %	22		$1,123,153.38	$1,762,560
D3040	Distribution Systems	$42.99	S.F.	72,000	25	1927	1952	2042	108.00 %	177.47 %	27		$5,493,077.18	$3,095,280
D3050	Terminal & Package Units	$11.60	S.F.	72,000	20	2015	2035		100.00 %	0.00 %	20			$835,200
D3060	Controls & Instrumentation	$13.50	S.F.	72,000	20	1927	1947	2037	110.00 %	158.90 %	22		$1,544,550.56	$972,000
D4010	Sprinklers	$7.05	S.F.	72,000	35			2052	105.71 %	202.91 %	37		$1,029,992.15	$507,600
D4020	Standpipes	$1.01	S.F.	72,000	35			2052	105.71 %	0.00 %	37			$72,720
D5010	Electrical Service/Distribution	$9.70	S.F.	72,000	30	1927	1957	2047	106.67 %	99.96 %	32		$698,095.33	$698,400
D5020	Lighting and Branch Wiring	$34.68	S.F.	72,000	20	1927	1947	2037	110.00 %	34.29 %	22		$856,238.97	$2,496,960
D5030	Communications and Security	$12.99	S.F.	72,000	15	1927	1942	2032	113.33 %	73.42 %	17		$686,656.04	$935,280
D5090	Other Electrical Systems	$1.41	S.F.	72,000	30	1927	1957	2047	106.67 %	463.09 %	32		$470,126.82	$101,520
E1020	Institutional Equipment	$4.82	S.F.	72,000	35	1990	2025		28.57 %	0.00 %	10			$347,040
E1090	Other Equipment	$11.10	S.F.	72,000	35	1927	1962	2042	77.14 %	11.00 %	27		$87,912.14	$799,200
E2010	Fixed Furnishings	$2.13	S.F.	72,000	40	1927	1967	2057	105.00 %	53.94 %	42		$82,728.50	$153,360
								Total	**66.29 %**	**40.31 %**			**$14,624,204.34**	**$36,276,843**

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:	**$14,624,204**	**$0**	**$0**	**$0**	**$0**	**$2,407,243**	**$0**	**$0**	**$0**	**$0**	**$4,327,283**	**$21,358,730**
*** 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	$41,574	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$41,574**
B2020 - Exterior Windows	$10,592	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$10,592**
B2030 - Exterior Doors	$36,951	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$36,951**
B30 - Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010 - Roof Coverings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010105 - Built-Up	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,579,732	**$1,579,732**
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	$2,510	**$2,510**
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**

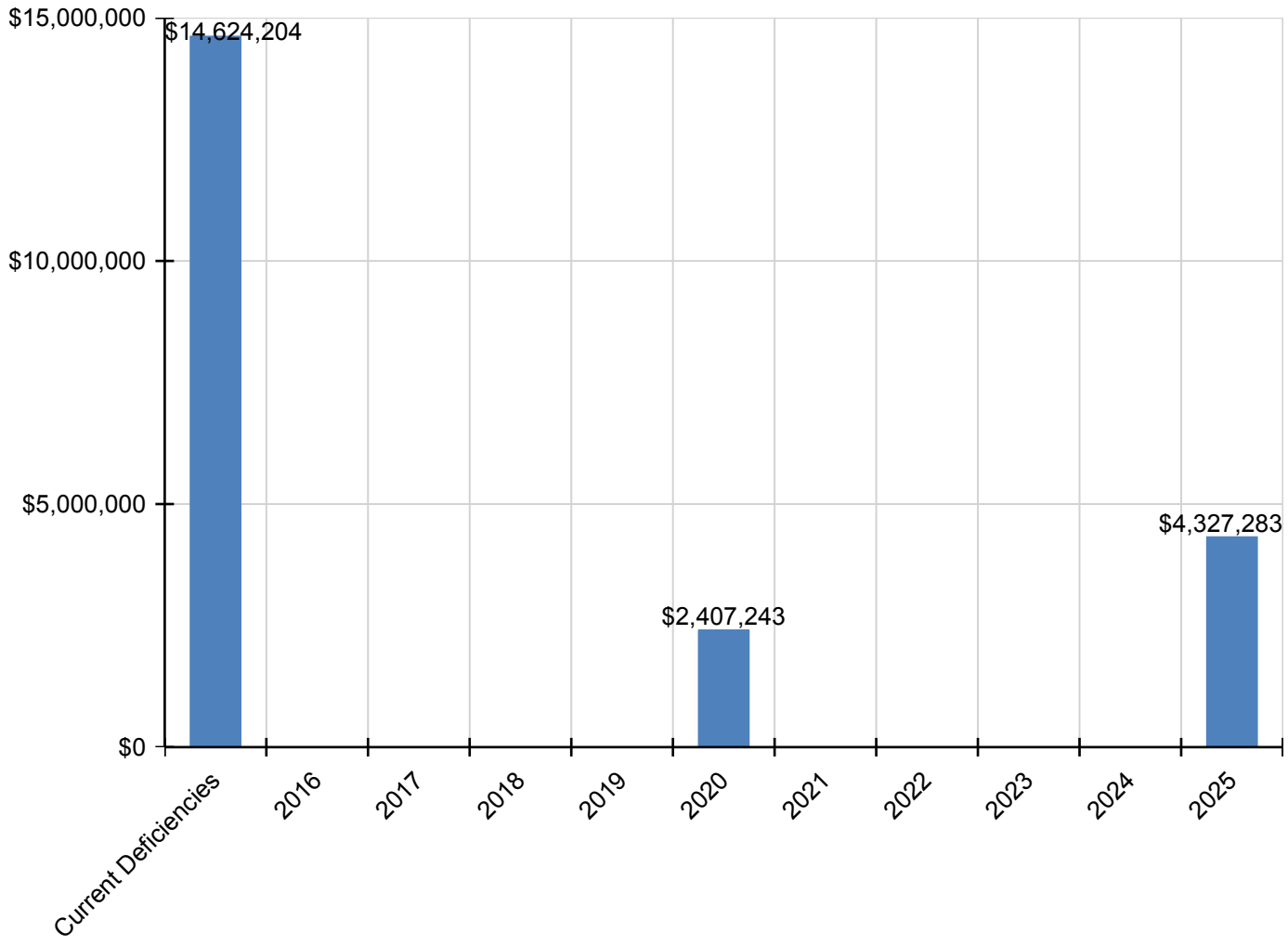
C1020 - Interior Doors	$41,743	$0	$0	$0	$0	$322,269	$0	$0	$0	$0	$0	**$364,012**
C1030 - Fittings	$29,800	$0	$0	$0	$0	$286,461	$0	$0	$0	$0	$0	**$316,262**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$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	$50,804	$0	$0	$0	$0	$1,212,870	$0	$0	$0	$0	$0	**$1,263,674**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$241,472	$0	$0	$0	$0	$0	**$241,472**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$18,618	$0	$0	$0	$0	$0	**$18,618**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$159,250	$0	$0	$0	$0	$304,896	$0	$0	$0	$0	$0	**$464,146**
C3020414 - Wood Flooring	$56,007	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$56,007**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$20,657	$0	$0	$0	$0	$0	**$20,657**
C3030 - Ceiling Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,232,009	**$2,232,009**
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	$1,012,601	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,012,601**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2020 - Domestic Water Distribution	$439,857	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$439,857**
D2030 - Sanitary Waste	$353,214	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$353,214**
D2040 - Rain Water Drainage	$319,279	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$319,279**
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	$1,123,153	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,123,153**
D3040 - Distribution Systems	$5,493,077	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$5,493,077**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,544,551	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,544,551**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$1,029,992	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,029,992**
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	$698,095	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$698,095**
D5020 - Lighting and Branch Wiring	$856,239	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$856,239**
D5030 - Communications and Security	$686,656	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$686,656**
D5090 - Other Electrical Systems	$470,127	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$470,127**
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	$513,032	**$513,032**
E1090 - Other Equipment	$87,912	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$87,912**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$82,729	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$82,729**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

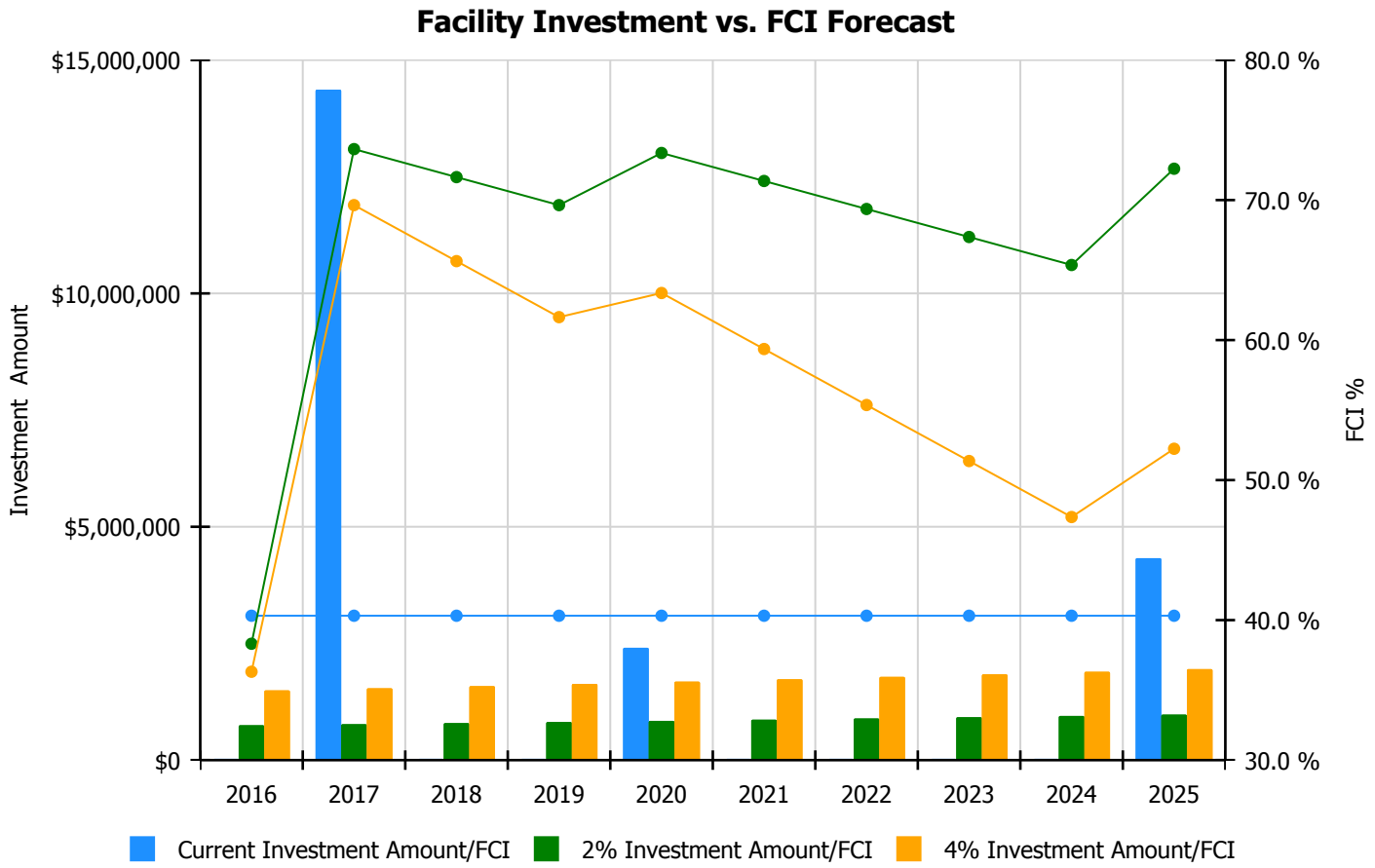
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

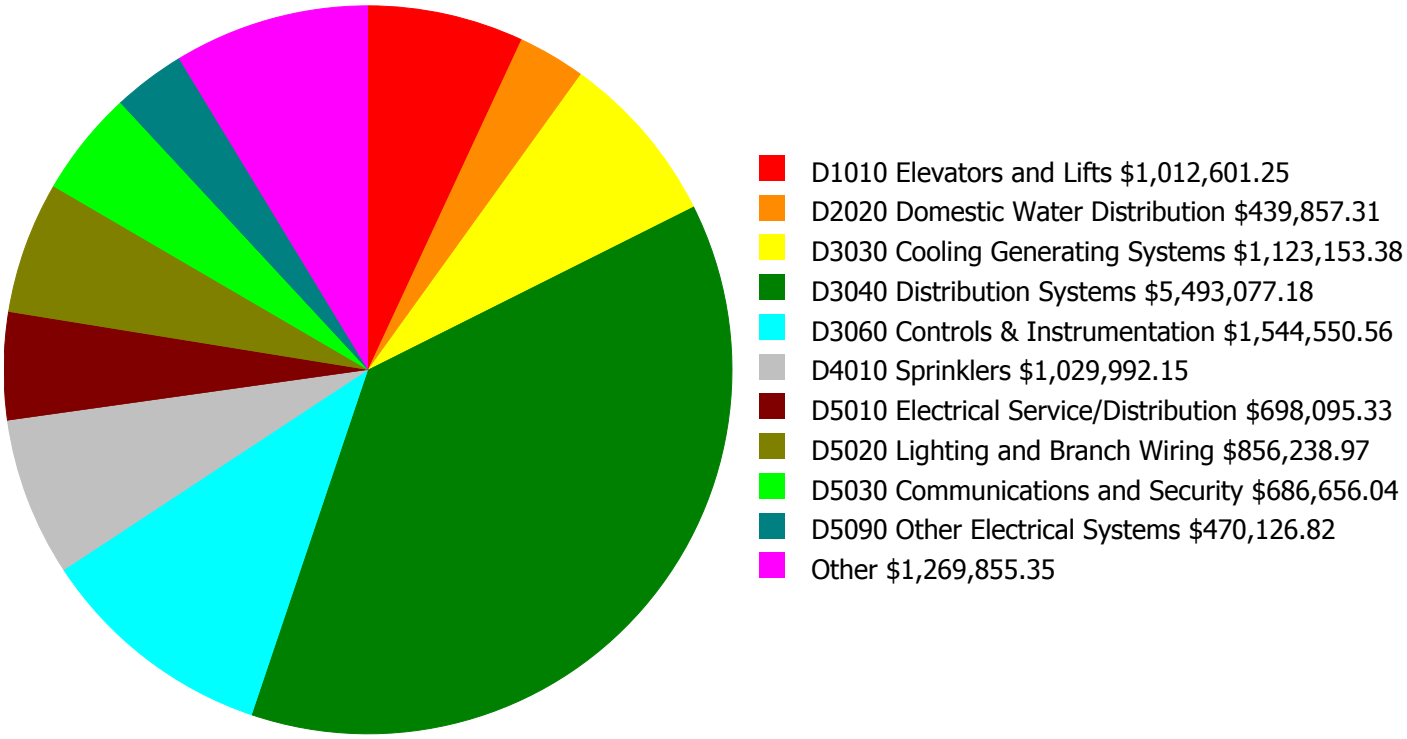
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 40.31%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$747,303.00	38.31 %	$1,494,606.00	36.31 %
2017	$14,364,939	$769,722.00	73.64 %	$1,539,444.00	69.64 %
2018	$0	$792,814.00	71.64 %	$1,585,627.00	65.64 %
2019	$0	$816,598.00	69.64 %	$1,633,196.00	61.64 %
2020	$2,407,243	$841,096.00	73.36 %	$1,682,192.00	63.36 %
2021	$0	$866,329.00	71.36 %	$1,732,658.00	59.36 %
2022	$0	$892,319.00	69.36 %	$1,784,638.00	55.36 %
2023	$0	$919,088.00	67.36 %	$1,838,177.00	51.36 %
2024	$0	$946,661.00	65.36 %	$1,893,322.00	47.36 %
2025	$4,327,283	$975,061.00	72.24 %	$1,950,122.00	52.24 %
Total:	**$21,099,465**	**$8,566,991.00**		**$17,133,982.00**	

Deficiency Summary by System

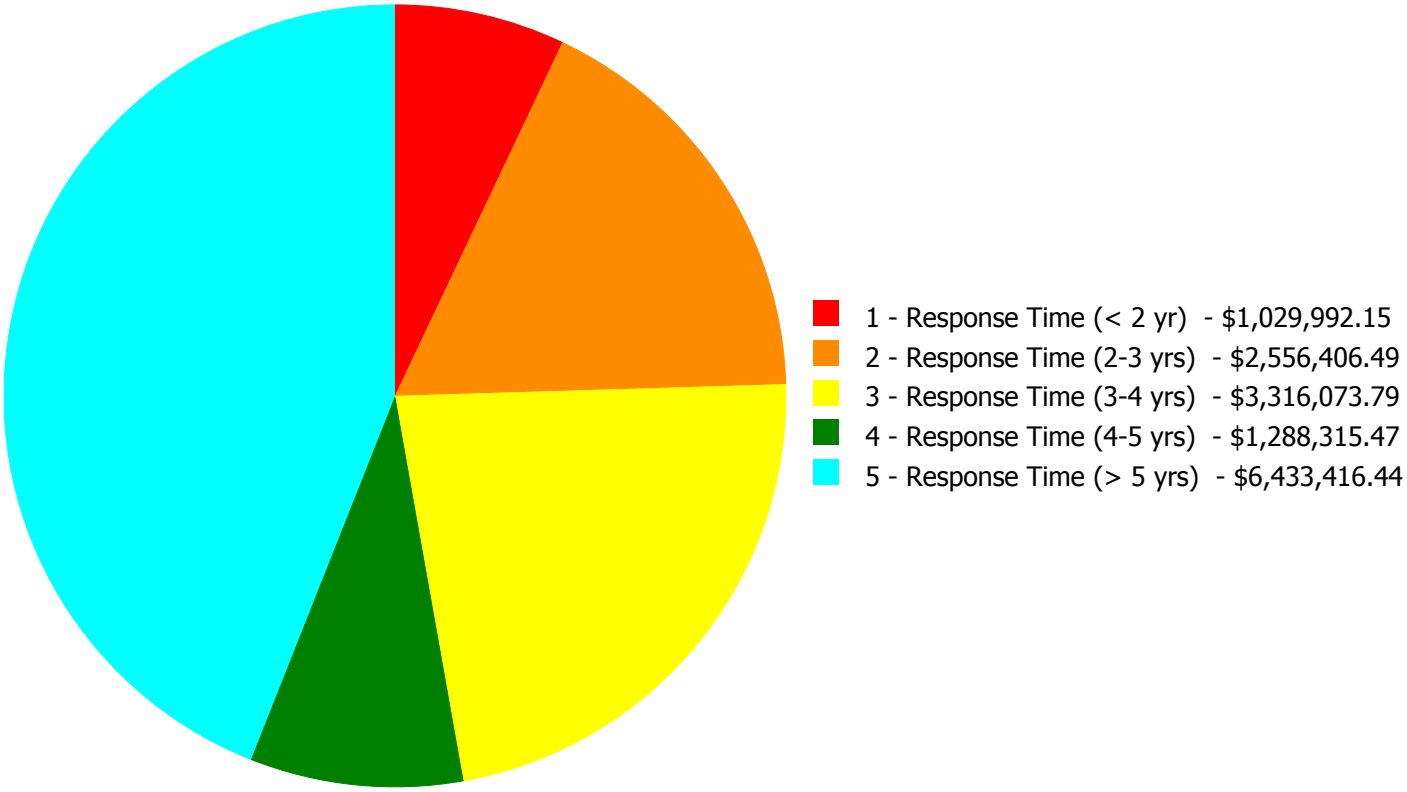
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $14,624,204.34

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: $14,624,204.34

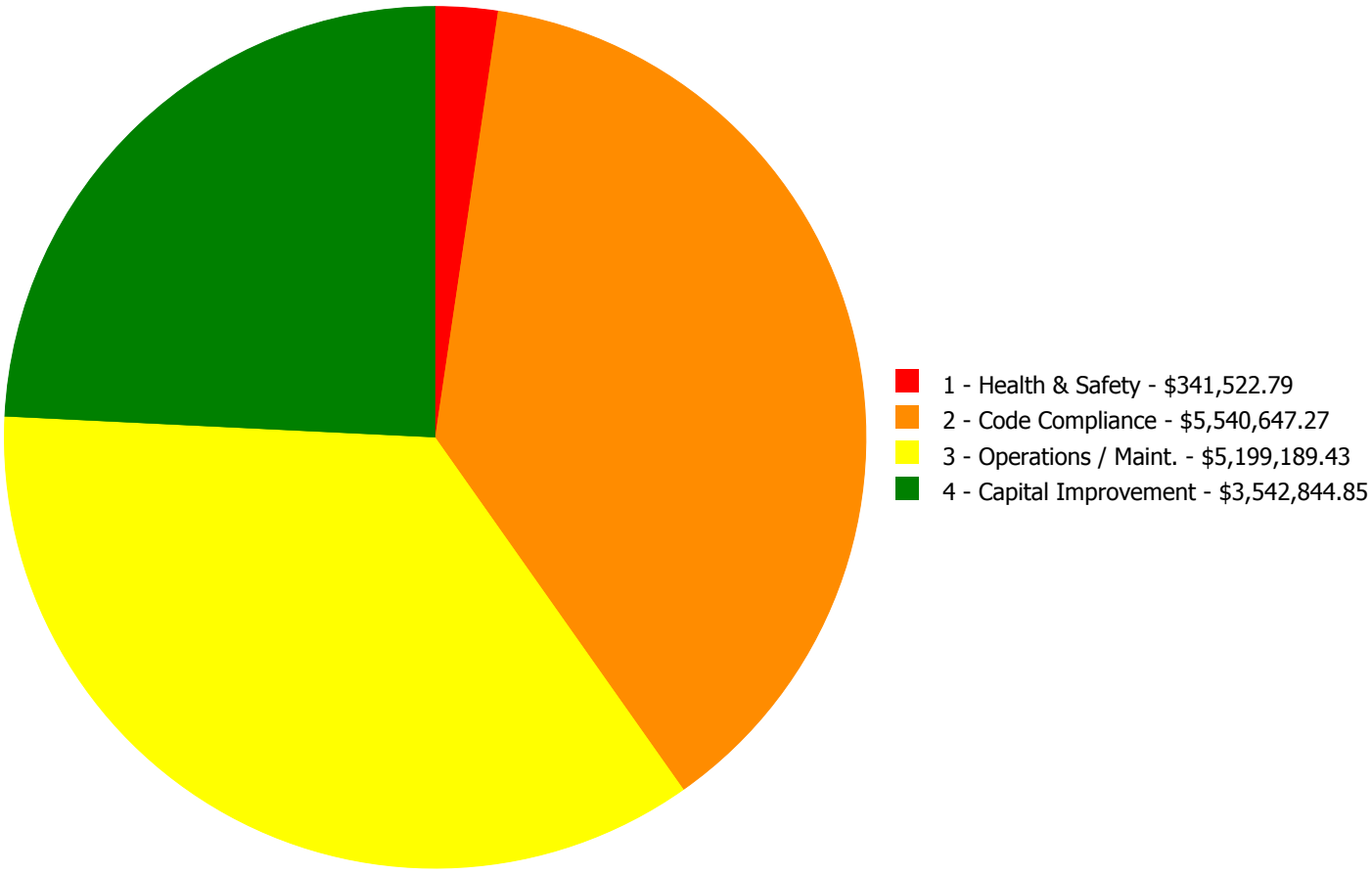
Deficiency By Priority Investment Table

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
B2010	Exterior Walls	$0.00	$41,574.23	$0.00	$0.00	$0.00	$41,574.23
B2020	Exterior Windows	$0.00	$0.00	$0.00	$10,592.19	$0.00	$10,592.19
B2030	Exterior Doors	$0.00	$0.00	$0.00	$36,950.74	$0.00	$36,950.74
C1020	Interior Doors	$0.00	$0.00	$0.00	$41,742.71	$0.00	$41,742.71
C1030	Fittings	$0.00	$0.00	$0.00	$29,800.37	$0.00	$29,800.37
C3010230	Paint & Covering	$0.00	$0.00	$0.00	$50,804.08	$0.00	$50,804.08
C3020413	Vinyl Flooring	$0.00	$159,250.01	$0.00	$0.00	$0.00	$159,250.01
C3020414	Wood Flooring	$0.00	$56,007.45	$0.00	$0.00	$0.00	$56,007.45
D1010	Elevators and Lifts	$0.00	$1,012,601.25	$0.00	$0.00	$0.00	$1,012,601.25
D2020	Domestic Water Distribution	$0.00	$50,533.86	$0.00	$389,323.45	$0.00	$439,857.31
D2030	Sanitary Waste	$0.00	$0.00	$353,213.96	$0.00	$0.00	$353,213.96
D2040	Rain Water Drainage	$0.00	$319,278.97	$0.00	$0.00	$0.00	$319,278.97
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$1,123,153.38	$1,123,153.38
D3040	Distribution Systems	$0.00	$546,577.83	$1,180,786.85	$0.00	$3,765,712.50	$5,493,077.18
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$0.00	$1,544,550.56	$1,544,550.56
D4010	Sprinklers	$1,029,992.15	$0.00	$0.00	$0.00	$0.00	$1,029,992.15
D5010	Electrical Service/Distribution	$0.00	$370,582.89	$0.00	$327,512.44	$0.00	$698,095.33
D5020	Lighting and Branch Wiring	$0.00	$0.00	$856,238.97	$0.00	$0.00	$856,238.97
D5030	Communications and Security	$0.00	$0.00	$285,066.55	$401,589.49	$0.00	$686,656.04
D5090	Other Electrical Systems	$0.00	$0.00	$470,126.82	$0.00	$0.00	$470,126.82
E1090	Other Equipment	$0.00	$0.00	$87,912.14	$0.00	$0.00	$87,912.14
E2010	Fixed Furnishings	$0.00	$0.00	$82,728.50	$0.00	$0.00	$82,728.50
	Total:	$1,029,992.15	$2,556,406.49	$3,316,073.79	$1,288,315.47	$6,433,416.44	$14,624,204.34

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: $14,624,204.34

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: D4010 - Sprinklers

Location: Throughout building

Distress: Life Safety / NFPA / PFD

Category: 2 - Code Compliance

Priority: 1 - Response Time (< 2 yr)

Correction: Install a fire protection sprinkler system

Qty: 72,000.00

Unit of Measure: S.F.

Estimate: $1,029,992.15

Assessor Name: System

Date Created: 01/08/2016

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: B2010 - Exterior Walls

Location: East elevation second floor; Element 2

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Remove and replacing failing steel lintels in brick wall construction

Qty: 75.00

Unit of Measure: L.F.

Estimate: $41,574.23

Assessor Name: System

Date Created: 02/13/2016

Notes: Replace cast stone lintels and coping on second floor east elevation.

System: C3020413 - Vinyl Flooring

Location: Corridors; classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 10,500.00

Unit of Measure: S.F.

Estimate: $159,250.01

Assessor Name: System

Date Created: 02/13/2016

Notes: Replace all VAT flooring.

System: C3020414 - Wood Flooring

Location: Gym

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 500.00

Unit of Measure: S.F.

Estimate: $56,007.45

Assessor Name: System

Date Created: 02/13/2016

Notes: Repair (10%) refinish hardwood flooring (50%).

System: D1010 - Elevators and Lifts

This deficiency has no image.

Location: Near main lobby on the exterior

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Add external 4 stop elevator - adjust the electrical run lengths to hook up the elevator

Qty: 1.00

Unit of Measure: Ea.

Estimate: $1,012,601.25

Assessor Name: System

Date Created: 02/13/2016

Notes: Provide ADA compliant elevator serving basement and all floors (exterior).

System: D2020 - Domestic Water Distribution

Location: Boiler room

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $50,533.86

Assessor Name: System

Date Created: 01/08/2016

Notes: Replace the duplex 5HP domestic water booster pumps and isolation valves on incoming domestic water line with a new skid mounted pressure booster system.

System: D2040 - Rain Water Drainage

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 72,000.00

Unit of Measure: S.F.

Estimate: $319,278.97

Assessor Name: System

Date Created: 01/08/2016

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

System: D3040 - Distribution Systems

Location: Element 2

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 10.00

Unit of Measure: Ea.

Estimate: $498,786.73

Assessor Name: System

Date Created: 01/08/2016

Notes: Remove the existing unit ventilators in Element 2 and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.

System: D3040 - Distribution Systems

Location: Element 2 mechanical room

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace Condensate Receiver Pump Set

Qty: 1.00

Unit of Measure: Ea.

Estimate: $47,791.10

Assessor Name: System

Date Created: 01/08/2016

Notes: Replace the existing condensate receiver serving Element 2 which has duplex pumps and is damaged from rust.

System: D5010 - Electrical Service/Distribution

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Panelboard - 400 amp

Qty: 1.00

Unit of Measure: Ea.

Estimate: $370,582.89

Assessor Name: System

Date Created: 02/04/2016

Notes: Install new distribution panels 4 in each floor plus two in the basement, and one in the kitchen (9 total).

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

System: D2030 - Sanitary Waste

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 72,000.00

Unit of Measure: S.F.

Estimate: $353,213.96

Assessor Name: System

Date Created: 01/08/2016

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

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 72,000.00

Unit of Measure: S.F.

Estimate: $681,146.81

Assessor Name: System

Date Created: 01/08/2016

Notes: Hire a qualified contractor to examine the steam piping, in service for 90 years, 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: Auditorium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Auditorium (200 seat).

Qty: 300.00

Unit of Measure: Seat

Estimate: $499,640.04

Assessor Name: System

Date Created: 01/08/2016

Notes: Replace the two (2) existing heating and ventilation units which are beyond their service lives and provide ventilation for the Auditorium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.

System: D5020 - Lighting and Branch Wiring

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Lighting Fixtures (SF)

Qty: 0.00

Unit of Measure: S.F.

Estimate: $451,084.44

Assessor Name: System

Date Created: 02/04/2016

Notes: Install new lighting system for 70% of the building.
72,000 SF x 70% = 50,400 SF

System: D5020 - Lighting and Branch Wiring

Location: throughout the building

Distress: Inadequate

Category: 4 - Capital Improvement

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

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

Qty: 0.00

Unit of Measure: S.F.

Estimate: $405,154.53

Assessor Name: System

Date Created: 02/04/2016

Notes: Install surface-mounted receptacles (two on each wall minimum) in all classrooms and other areas within the building.

System: D5030 - Communications and Security

Location: throughout the building

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Replace fire alarm system

Qty: 1.00

Unit of Measure: S.F.

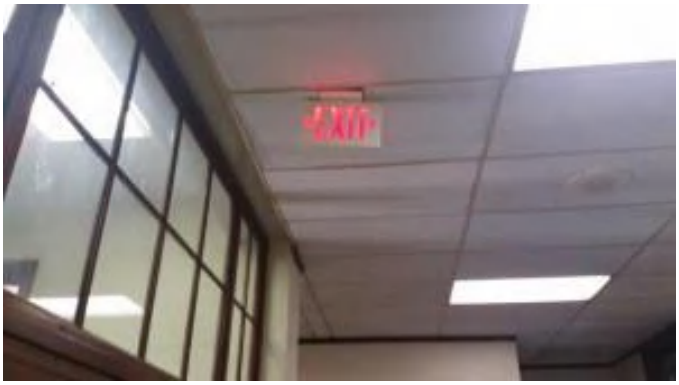
Estimate: $285,066.55

Assessor Name: System

Date Created: 02/04/2016

Notes: Install new automated FA system.

System: D5090 - Other Electrical Systems



Location: throughout the building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace Emergency/Exit Lighting
Qty: 1.00
Unit of Measure: Ea.
Estimate: $309,541.78
Assessor Name: System
Date Created: 02/04/2016

Notes: Install new emergency exit signs emergency lights.

System: D5090 - Other Electrical Systems

Location: electrical room
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: $160,585.04
Assessor Name: System
Date Created: 02/04/2016

Notes: Install a new emergency generator.

System: E1090 - Other Equipment

Location: Kitchen

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace kitchen exhaust hood (10 ft)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $87,912.14

Assessor Name: System

Date Created: 01/08/2016

Notes: Replace the existing Kitchen exhaust hood which is beyond its service life.

System: E2010 - Fixed Furnishings

Location: Main corridors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 200.00

Unit of Measure: L.F.

Estimate: $82,728.50

Assessor Name: System

Date Created: 02/15/2016

Notes: Replace lockers in corridors

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

System: B2020 - Exterior Windows

Location: Stairwell window guards

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Clean debris from enclosed window covers and re-paint

Qty: 16.00

Unit of Measure: Ea.

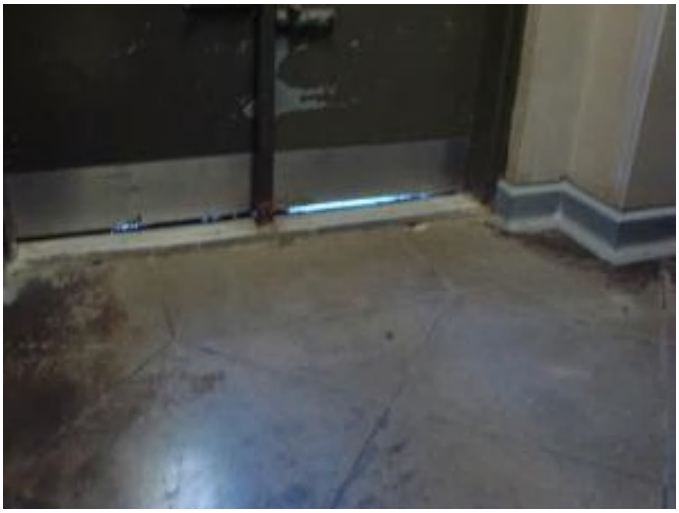
Estimate: $10,592.19

Assessor Name: System

Date Created: 02/13/2016

Notes: Refurbish window safety screens on stairwells.

System: B2030 - Exterior Doors



Location: Exterior doors

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 8.00

Unit of Measure: Ea.

Estimate: $36,950.74

Assessor Name: System

Date Created: 02/13/2016

Notes: Replace damaged exterior doors.

System: C1020 - Interior Doors

Location: Interior doors; corridors, classrooms, restrooms

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Replace door knobs with compliant lever type

Qty: 75.00

Unit of Measure: Ea.

Estimate: $41,742.71

Assessor Name: System

Date Created: 02/13/2016

Notes: Provide ADA compliant hardware on interior doors.

System: C1030 - Fittings

Location: Corridors

Distress: Inadequate

Category: 3 - Operations / Maint.

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

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

Qty: 110.00

Unit of Measure: Ea.

Estimate: $29,800.37

Assessor Name: System

Date Created: 02/13/2016

Notes: Install new signage throughout.

System: C3010230 - Paint & Covering

Location: Ceiling in corridors, classrooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

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

Qty: 7,500.00

Unit of Measure: S.F.

Estimate: $50,804.08

Assessor Name: System

Date Created: 02/13/2016

Notes: Repair (10%) and repaint all ceilings.

System: D2020 - Domestic Water Distribution

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace domestic water piping (75 KSF)

Qty: 72,000.00

Unit of Measure: S.F.

Estimate: $364,849.90

Assessor Name: System

Date Created: 01/08/2016

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

System: D2020 - Domestic Water Distribution

Location: Boiler room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace instantaneous water heater

Qty: 1.00

Unit of Measure: Ea.

Estimate: $24,473.55

Assessor Name: System

Date Created: 01/08/2016

Notes: Replace one (1) existing Paloma instant hot water heater that is approaching the end of its service life.

System: D5010 - Electrical Service/Distribution

Location: electrical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Service Transformer, Add Switchboard

Qty: 0.00

Unit of Measure: Ea.

Estimate: $327,512.44

Assessor Name: System

Date Created: 02/04/2016

Notes: Install a new electrical service to replace the old one and have enough capacity for future mechanical loads.

System: D5030 - Communications and Security

Location: throughout the building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace clock/program system
Qty: 0.00
Unit of Measure: Ea.
Estimate: $238,589.19
Assessor Name: System
Date Created: 02/04/2016

Notes: Install new Clock System.

System: D5030 - Communications and Security

Location: auditorium
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Add/Replace Sound System
Qty: 1.00
Unit of Measure: LS
Estimate: $106,544.06
Assessor Name: System
Date Created: 02/04/2016

Notes: Install new auditorium stage lighting controls, plus new sound system.

System: D5030 - Communications and Security

This deficiency has no image.

Location: throughout the building

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Add/Replace Video Surveillance System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $56,456.24

Assessor Name: System

Date Created: 02/04/2016

Notes: Install a new Video Surveillance system with cameras and CCTV
Note: There is no picture attached since this school presently has no Cameras and CCTV.

Priority 5 - Response Time (> 5 yrs):

System: D3030 - Cooling Generating Systems

This deficiency has no image.

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: 72,000.00

Unit of Measure: S.F.

Estimate: $1,123,153.38

Assessor Name: System

Date Created: 01/08/2016

Notes: Remove the window air conditioning units and install a 200 ton air-cooled chiller with chilled water distribution piping and pumps located in a mechanical room to supply more reliable air conditioning for the building with a much longer service life.

System: D3040 - Distribution Systems

Location: Element 1

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 30.00

Unit of Measure: C

Estimate: $2,491,829.70

Assessor Name: System

Date Created: 01/08/2016

Notes: Remove the existing cast iron steam radiators in Element 1 and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.

System: D3040 - Distribution Systems

Location: Gymnasium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 6,000.00

Unit of Measure: Ea.

Estimate: $344,860.27

Assessor Name: System

Date Created: 01/08/2016

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

System: D3040 - Distribution Systems

Location: Cafeteria

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install HVAC unit for Cafeteria (850 students).

Qty: 656.00

Unit of Measure: Pr.

Estimate: $335,688.89

Assessor Name: System

Date Created: 01/08/2016

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

System: D3040 - Distribution Systems

Location: Kitchen

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Install GF makeup air unit for kitchen exhaust hood (single 10 ft hood).

Qty: 1.00

Unit of Measure: Ea.

Estimate: $309,401.34

Assessor Name: System

Date Created: 01/08/2016

Notes: Install a gas fired make-up air system for the Kitchen exhaust hood.

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: 656.00

Unit of Measure: Pr.

Estimate: $283,932.30

Assessor Name: System

Date Created: 01/08/2016

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

System: D3060 - Controls & Instrumentation

Location: Throughout building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 72,000.00

Unit of Measure: S.F.

Estimate: $1,544,550.56

Assessor Name: System

Date Created: 01/08/2016

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

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D2020 Domestic Water Distribution	Pump, pressure booster system, 5 HP pump, includes diaphragm tank, control and pressure switch	2.00	Ea.	Boiler Room	Bell and Gossett				25	2006	2031	$10,972.50	$24,139.50
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, steam, gross output, 5230 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Boiler Room	Weil-McLain	1994			35	2006	2041	$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	Weil-McLain	1994			35	2006	2041	$122,870.00	$270,314.00
D5010 Electrical Service/Distribution	Load interrupter switch, 2 position, 300 kVA & below, 13.8 kV, 600 amp w/CLF fuses, NEMA 1	1.00	Ea.	electrical room					30	1927	2047	$42,600.60	$46,860.66
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NQOD, 120/208 V, 400 A, 1 stories, 25' horizontal	4.00	Ea.	electrical room					30			$12,109.50	$53,281.80
D5010 Electrical Service/Distribution	Switchboards, distribution section, aluminum bus bars, 4 W, 120/208 or 277/480 V, 1200 amp, excl breakers	1.00	Ea.	electrical room					30			$6,551.55	$7,206.71
D5090 Other Electrical Systems	Generator set, diesel, 3 phase 4 wire, 277/480 V, 125 kW, incl battery, charger, muffler, & day tank, excl conduit, wiring, & concrete	1.00	Ea.	electrical room					30	1927	2047	$50,797.80	$55,877.58
												Total:	**$727,994.25**

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):	83,600
Year Built:	1927
Last Renovation:	
Replacement Value:	$1,805,628
Repair Cost:	$387,661.53
Total FCI:	21.47 %
Total RSLI:	54.37 %

Description:

Attributes:

General Attributes:

Bldg ID:	S626001	Site ID:	S626001

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	35.13 %	15.09 %	$199,109.17
G40 - Site Electrical Utilities	106.67 %	38.82 %	$188,552.36
Totals:	**54.37 %**	**21.47 %**	**$387,661.53**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2010	Roadways	$11.52	S.F.		30				0.00 %	0.00 %				$0
G2020	Parking Lots	$8.50	S.F.	6,000	30	1990	2020	2047	106.67 %	119.90 %	32		$61,148.05	$51,000
G2030	Pedestrian Paving	$12.30	S.F.	68,000	40	1990	2030		37.50 %	13.59 %	15		$113,629.19	$836,400
G2040	Site Development	$4.36	S.F.	83,600	25	1927	1952	2020	20.00 %	6.68 %	5		$24,331.93	$364,496
G2050	Landscaping & Irrigation	$4.36	S.F.	15,600	15	2005	2020		33.33 %	0.00 %	5			$68,016
G4020	Site Lighting	$4.84	S.F.	83,600	30	1927	1957	2047	106.67 %	38.19 %	32		$154,545.48	$404,624
G4030	Site Communications & Security	$0.97	S.F.	83,600	30	1927	1957	2047	106.67 %	41.94 %	32		$34,006.88	$81,092
								Total	**54.37 %**	**21.47 %**			**$387,661.53**	**$1,805,628**

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.

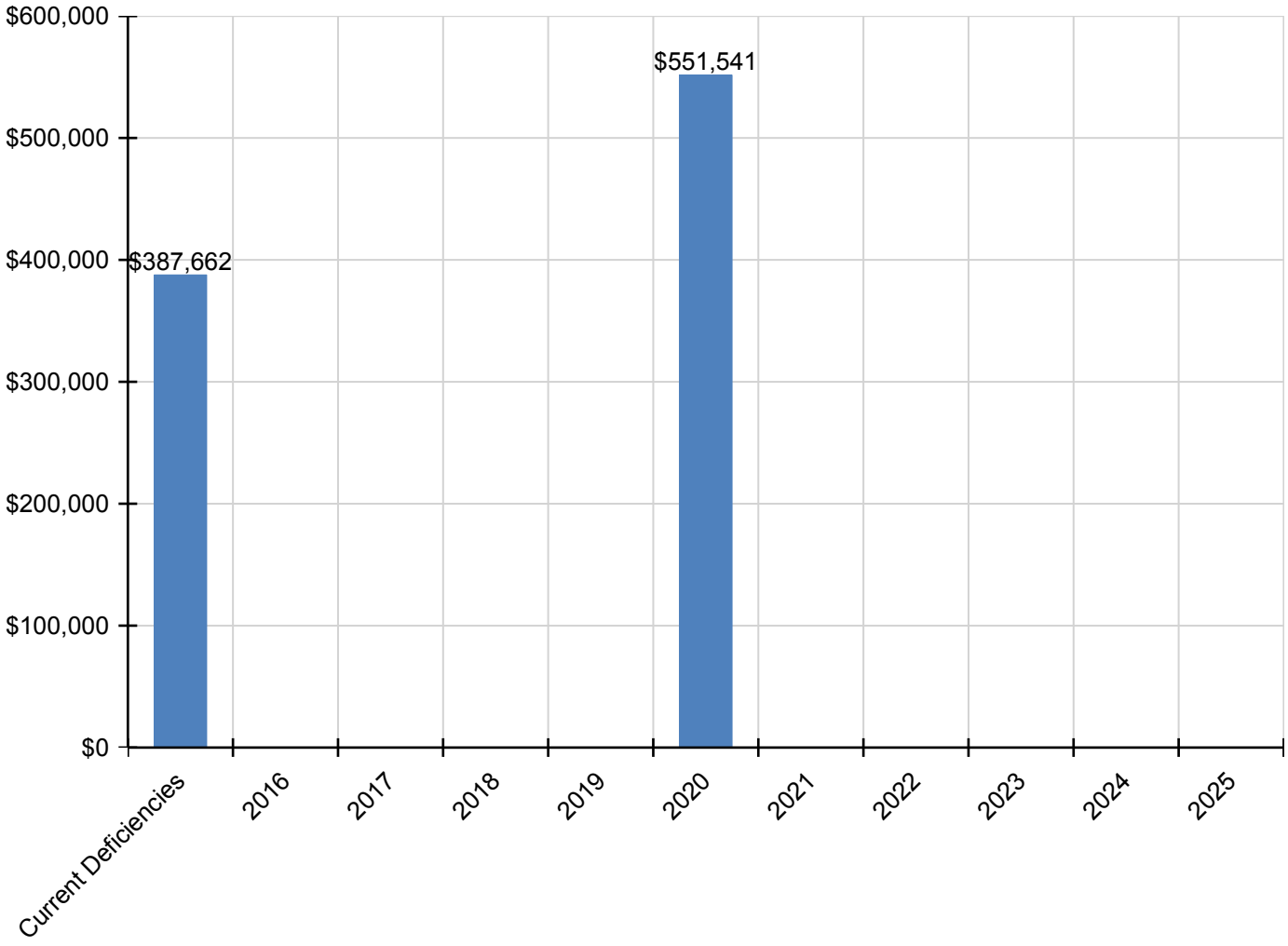
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$387,662**	**$0**	**$0**	**$0**	**$0**	**$551,541**	**$0**	**$0**	**$0**	**$0**	**$0**	**$939,202**
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	$61,148	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$61,148**
G2030 - Pedestrian Paving	$113,629	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$113,629**
G2040 - Site Development	$24,332	$0	$0	$0	$0	$464,806	$0	$0	$0	$0	$0	**$489,138**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$86,735	$0	$0	$0	$0	$0	**$86,735**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$154,545	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$154,545**
G4030 - Site Communications & Security	$34,007	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$34,007**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

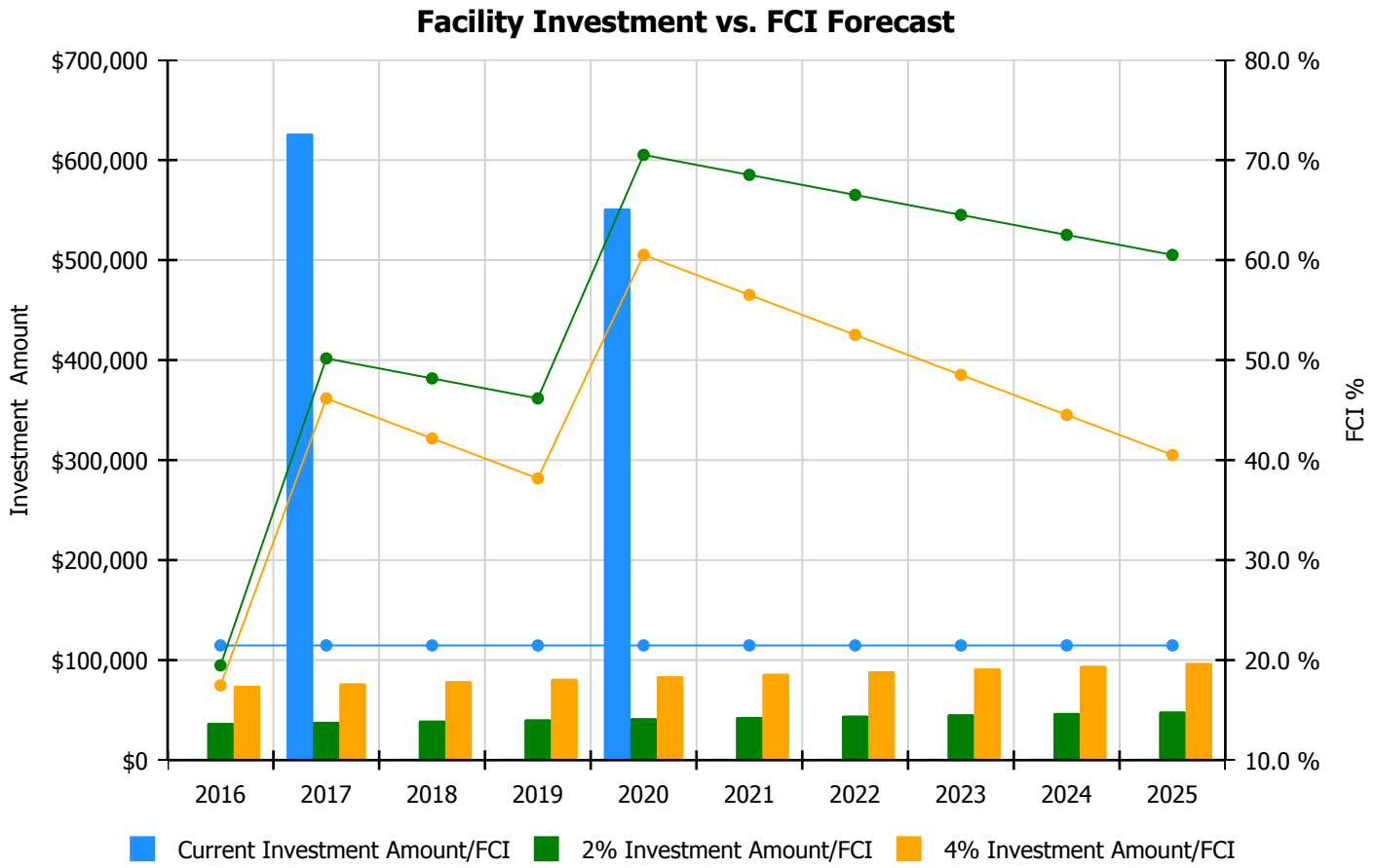
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

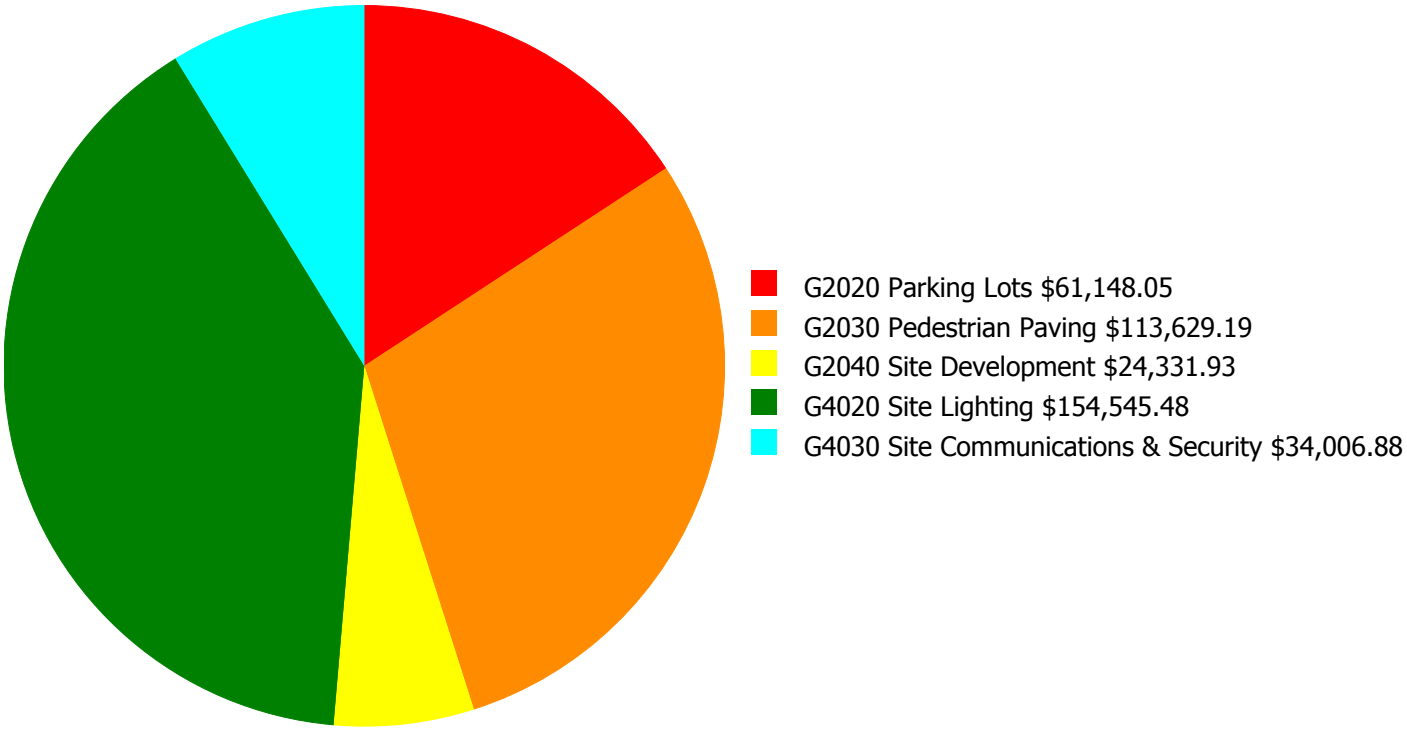
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 21.47%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$37,196.00	19.47 %	$74,392.00	17.47 %
2017	$626,342	$38,312.00	50.17 %	$76,624.00	46.17 %
2018	$0	$39,461.00	48.17 %	$78,922.00	42.17 %
2019	$0	$40,645.00	46.17 %	$81,290.00	38.17 %
2020	$551,541	$41,864.00	70.52 %	$83,729.00	60.52 %
2021	$0	$43,120.00	68.52 %	$86,241.00	56.52 %
2022	$0	$44,414.00	66.52 %	$88,828.00	52.52 %
2023	$0	$45,746.00	64.52 %	$91,493.00	48.52 %
2024	$0	$47,119.00	62.52 %	$94,237.00	44.52 %
2025	$0	$48,532.00	60.52 %	$97,065.00	40.52 %
Total:	**$1,177,882**	**$426,409.00**		**$852,821.00**	

Deficiency Summary by System

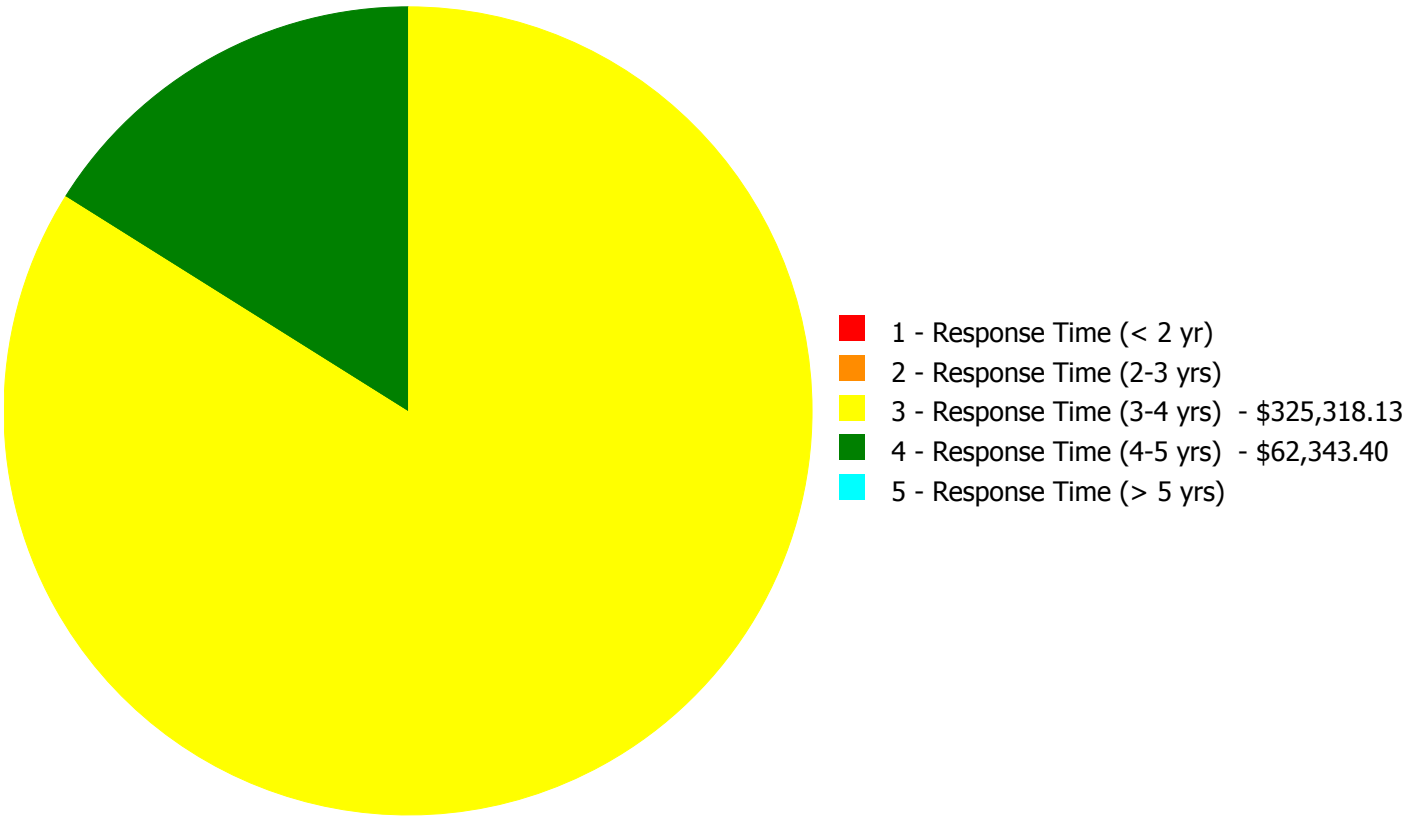
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $387,661.53

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: $387,661.53

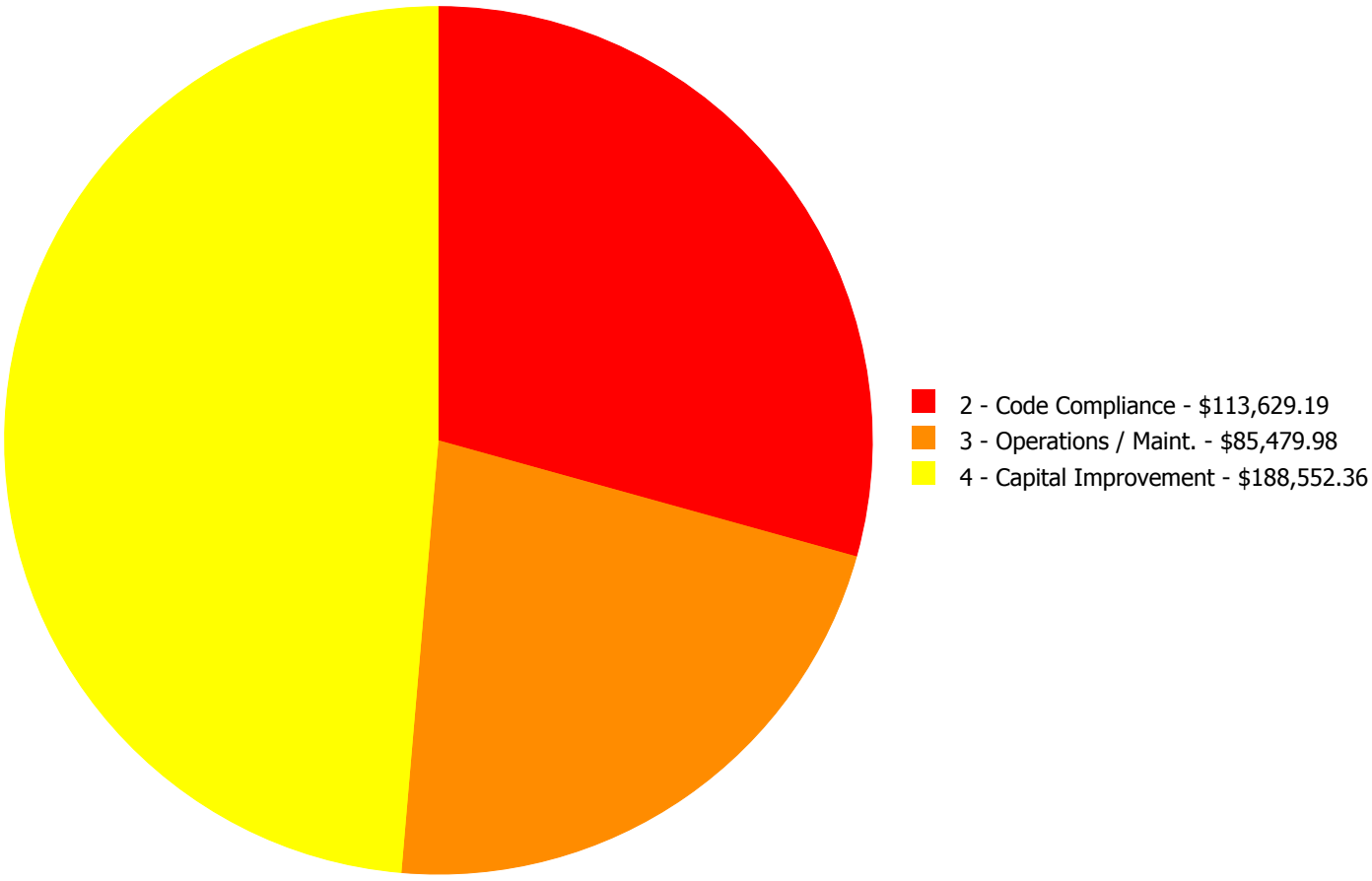
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2020	Parking Lots	$0.00	$0.00	$57,143.46	$4,004.59	$0.00	$61,148.05
G2030	Pedestrian Paving	$0.00	$0.00	$113,629.19	$0.00	$0.00	$113,629.19
G2040	Site Development	$0.00	$0.00	$0.00	$24,331.93	$0.00	$24,331.93
G4020	Site Lighting	$0.00	$0.00	$154,545.48	$0.00	$0.00	$154,545.48
G4030	Site Communications & Security	$0.00	$0.00	$0.00	$34,006.88	$0.00	$34,006.88
	Total:	$0.00	$0.00	$325,318.13	$62,343.40	$0.00	$387,661.53

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: $387,661.53

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: G2020 - Parking Lots

Location: On site parking area

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Resurface parking lot - grind and resurface including striping

Qty: 15,000.00

Unit of Measure: S.F.

Estimate: $57,143.46

Assessor Name: Craig Anding

Date Created: 02/13/2016

Notes: Resurface parking lot

System: G2030 - Pedestrian Paving

Location: Along accessible route to elevator

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Install an exterior ADA ramp - based on 5' wide by the linear foot - up to 84" rise - per LF of ramp - figure 1 LF of ramp per inch of rise

Qty: 48.00

Unit of Measure: L.F.

Estimate: $113,629.19

Assessor Name: Craig Anding

Date Created: 02/13/2016

Notes: Provide ADA compliant ramp at main entrance.

System: G4020 - Site Lighting

Location: grounds

Distress: Inadequate

Category: 4 - Capital Improvement

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $154,545.48

Assessor Name: Craig Anding

Date Created: 02/04/2016

Notes: Install additional pole-mounted lights for the grounds

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

System: G2020 - Parking Lots

Location: On site parking area

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Stripe parking stalls, install parking bumpers, provide handicap symbol and handicap post mounted sign - insert proper quantities in estimate

Qty: 5.00

Unit of Measure: Ea.

Estimate: $4,004.59

Assessor Name: Craig Anding

Date Created: 02/13/2016

Notes: Restripe parking, replace wheel stops.

System: G2040 - Site Development

Location: Along on site parking area

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace chain link gate - 8' high

Qty: 15.00

Unit of Measure: Ea.

Estimate: $24,331.93

Assessor Name: Craig Anding

Date Created: 02/13/2016

Notes: Replace chain link fence.

System: G4030 - Site Communications & Security

Location: grounds

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add Site Paging System

Qty: 0.00

Unit of Measure: Ea.

Estimate: $34,006.88

Assessor Name: Craig Anding

Date Created: 02/04/2016

Notes: Install additional exterior speakers for the grounds

Equipment Inventory

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

No data found for this asset

Glossary

ABMA	American Boiler Manufacturers Association http://www.abma.com/
ACEEE	American Council for an Energy-Efficient Economy
ACGIH	American Council of Governmental and Industrial Hygienists
AEE	Association of Energy Engineers
AFD	Adjustable Frequency Drive
AFTC	After Tax Cash Flow
AGA	American Gas Association
AHU	Air Handling Unit
Amp	Ampere
ANSI	American National Standards Institute
ARI	Air Conditioning and Refrigeration Institute
ASD	Adjustable Speed Drive
ASHRAE	American Society of Heating Refrigerating and Air-Conditioning Engineers Inc.
ASME	American Society of Mechanical Engineers
Assessment	Visual survey of a facility to determine its condition. It involves looking at the age of systems reviewing information from local sources and visual evidence of potential problems to assign a condition rating. It does not include destructive testing of materials or testing of systems or equipment for functionality.
ATS	After Tax Savings
AW	Annual worth
BACNET	Building Automation Control Network
BAS	Building Automation System
BCR	Benefit Cost Ratio
BEP	Business Energy Professional (AEE)
BF	Ballast Factor
BHP	Boiler Horsepower (boilers)
BHP	Brake Horsepower (motors)
BLCC	Building Life Cycle Cost analysis program (FEMP)
BOCA	Building Officials and Code Administrators
BTCF	Before Tax Cash Flow

BTS	Before Tax Savings
Btu	British thermal unit
Building Addition	An area space or component of a building added to a building after the original building's year built date.
CAA	Clean Air Act
CAAA-90	Clean Air Act Amendments of 1990
CABO	Council of American Building Officials
CAC	Conventional Air Conditioning
CADDET	Center for the Analysis and Dissemination of Demonstrated Energy Technologies
Calculated Next Renewal	The year a system or element would be expected to expire based solely on the date it was installed and the expected useful lifetime for that kind of system.
Capital Renewal	Capital renewal is condition work (excluding suitability and energy audit work) that includes the replacement of building systems or elements (as they become obsolete or beyond their useful life) not normally included in an annual operating budget. Calculated next renewal The year a system or element would be expected to expire based solely on the date it was installed and the expected useful lifetime for that kind of system. Next renewal The assessor adjusted expected useful life of a system or element based on on-site inspection.
CDD	Cooling Degree Days
CDGP	Certified Distributed Generation Professional
CEC	California Energy Commission
CEM	Certified Energy Manager
CEP	Certified Energy Procurement Professional
CFC	Chlorofluorocarbon
CFD	Cash Flow Diagram
CFL	Compact Fluorescent Light
CFM cfm	Cubic Feet per Minute
CHP	Combined Heat and Power (a.k.a. cogeneration)
CHW	Chilled Water
Condition	Condition refers to the state of physical fitness or readiness of a facility system or system element for its intended use.
COP	Coefficient of Performance
Cp	Heat Capacity of Material
CPUC	California Public Utility Commission
CRI	Color Rendering Index
CRT	Cathode Ray Tube VDT HMI

CTC	Competitive Transition Charge
Cu	Coefficient of Utilization
Current Replacement Value (CRV)	CRV represents the hypothetical total cost of rebuilding or replacing an existing facility in current dollars to its optimal condition (excluding auxiliary facilities) under current codes and construction standards.
Cv	Value Coefficient
CWS	Chilled Water System
D d	Distance (usually feet)
DB	Dry Bulb
DCV	Demand Control Ventilation
DD	Degree Day
DDB	Double Declining Balance
DDC	Direct Digital Controls
Deferred maintenance	Deferred maintenance is condition work (excluding suitability and energy audit needs) deferred on a planned or unplanned basis to a future budget cycle or postponed until funds are available.
Deficiency	A deficiency is a repair item that is damaged missing inadequate or insufficient for an intended purpose.
Delta	Difference
Delta P	Pressure Difference
Delta T	Temperature Difference
DG	Distributed Generation
DOE	Department of Energy
DP	Dew Point
DR	Demand Response
DX	Direct Expansion Air Conditioner
EA	Energy Audit
EBITDA	Earnings before Interest Taxes Depreciation and Amortization
ECI	Energy Cost Index
ECM	Energy Conservation Measure
ECO	Energy Conservation Opportunity
ECPA	Energy Conservation and Production Act
ECR	Energy Conservation Recommendation
ECS	Energy Control System

EER	Energy Efficiency Ratio
EERE	Energy Efficiency and Renewable Energy division of US DOE
EIA	Energy Information Agency
EIS	Energy Information System
EMCS	Energy Management Computer System
EMO	Energy Management Opportunity
EMP	Energy Management Project
EMR	Energy Management Recommendation
EMS	Energy Management System
Energy Utilization Index (EUI)	EUI is the measure of total energy consumed in the cooling or heating of a building in a period expressed as British thermal unit (BTU) per (cooled or heated) gross square foot.
EO	Executive Order
EPA	Environmental Protection Agency
EPACT	Energy Policy Act of 1992
EPCA	Energy Production and Conservation Act of 1975
EPRI	Electric Power Research Institute
EREN	Efficiency and Renewable Energy (Division of USDOE)
ERV	Energy Recovery Ventilator
ESCO	Energy Service Company
ESPC	Energy Savings Performance Contract
EUI	Energy Use Index
EWG	Exempt Wholesale Generators
Extended Facility Condition Index (EFCI)	EFCI is calculated as the condition needs for the current year plus facility system renewal needs going out to a set time in the future divided by Current Replacement Value.
f	Frequency
F	Fahrenheit
Facility	A facility refers to site(s) building(s) or building addition(s) or combinations thereof that provide a particular service.
Facility Condition Assessment (FCA)	FCA is a process for evaluating the condition of buildings and facilities for programming and budgetary purposes through an on site inspection and evaluation process.
Facility Condition Index (FCI)	FCI is an industry-standard measurement of a facility's condition that is the ratio of the cost to correct a facility's deficiencies to the Current Replacement Value of the facilities. The higher the FCI the poorer the condition of a facility. After an FCI is established for all buildings within a portfolio a building's condition can be ranked relative to other buildings. The FCI may also represent the condition of a portfolio based on the cumulative FCIs of the portfolio's facilities.

FC	Footcandle
FCA	Fuel Cost Adjustment
FEMIA	Federal Energy Management Improvement Act of 1988
FEMP	Federal Energy Management Program
FERC	Federal Energy Regulatory Commission
FESR	Fuel Energy Savings Ratio
FLA	Full Load Amps
FLF	Facility Load Factor (usually monthly)
FLRPM	Full Load Revolutions per Minute
FMS	Facility Management System
FPM fpm	Feet per Minute (velocity)
FSEC	Florida Solar Energy Center
Ft	Foot
GPM gpm	Gallons per Minute
GRI	Gas Research Institute
Gross Square Feet (GSF)	The size of the enclosed floor space of a building in square feet measured to the outside face of the enclosing wall.
GUI	Graphical User Interface
H h	Enthalpy Btu/lb
HCFC	Hydrochlorofluorocarbons
HDD	Heating Degree days
HFC	Hydrofluorocarbons
HHV	Higher Heating Value
HID	High Intensity Discharge (lamp)
HMI	Human Machine Interface
HMMI	Human Man Machine Interface
HO	High Output (lamp)
HP Hp hp	Horsepower
HPS	High Pressure Sodium (lamp)
HR	Humidity Ratio
Hr hr	Hour

HRU	Heat Recovery Unit
HVAC	Heating Ventilation and Air-Conditioning
Hz	Hertz
I	Intensity (lumen output of lamp)
I i	Interest rate or Discount rate
IAQ	Indoor Air Quality
ICA	International Cogeneration Alliance
ICBO	International Conference of Buildings Officials
ICC	International Code Council
ICP	Institutional Conservation Program
IECC	International Energy Conservation Code
IEEE	Institute of Electrical and Electronic Engineers
IESNA	Illuminating Engineering Society of North America
Install year	The year a building or system was built or the most recent major renovation date (where a minimum of 70 of the system?s Current Replacement Value (CRV) was replaced).
IRP	Integrated Resource Planning
IRR	Internal Rate of Return
ISO	Independent System Operator
ITA	Independent Tariff Administrator
k	Kilo multiple of thousands in SI system
K	Kelvins (color temperature of lamp)
K k	Thermal Conductivity of Material
KVA	Kilovolt Ampere
KVAR	Kilovolt Ampere Reactive
kW	kiloWatt
kWh	kiloWatt hour
L	Length (usually feet)
LCC	Life Cycle Costing
LDC	Local Distribution Company
LEED	Leadership in Energy and Environmental Design
LEED EB	LEED for Existing Buildings

LEED NC	LEED for new construction
LF	Load Factor
LHV	Lower Heating Value
Life cycle	The period of time that a building or site system or element can be expected to adequately serve its intended function.
LPS	Low Pressure Sodium (lamp)
Lu	Lumen Output of a Lamp or Fixture
M	Mega multiple of millions in SI system
M&V	Measurement and Verification
MACRS	Modified Accelerated Cost Recovery System
MARR	Minimum Attractive Rate of Return
Mbtu	Thousand Btu
MCF	Thousand Cubic Feet (usually of gas)
MEC	Model Energy Code
Mm	Multiple of Thousands in I/P System
MMBtu	Million Btu
MMCS	Maintenance Management Computer System
MMI	Man Machine Interface
MMS	Maintenance Management System
MSE 2000	Management System for Energy 2000 (ANSI Georgia Tech Univ)
MW	MegaWatt
MWH MWh	MegaWatt hour
NAAQS	National Ambient Air Quality Standards
NAESCO	National Association of Energy Service Companies
NAIMA	North American Insulation Manufacturers Association
NEA	National Energy Act of 1978
NECPA	National Energy Conservation Policy Act
NEMA	National Electrical Manufacturer's Association
NERC	North American Electric Reliability Council
Next Renewal	The Next Renewal date is an override of the 'Calculated Next Renewal' date and is based upon the assessor?s visual inspection.

NFPA	National Fire Protection Association
NGPA	National Gas Policy Act of 1978
NLRPM	No Load Revolutions per Minute (speed)
Nn	Equipment or Project lifetime in economic analysis
NOPR	Notice of Proposed Rule Making from FERC
NOx	Nitrogen Oxide Compounds
NPV	Net present value in economic analysis
NREL	National Renewable Energy Laboratory
NUG	Non-Utility Generator
O&M	Operation and Maintenance
OA	Outside Air
ODP	Ozone Depletion Potential
OPAC	Off-Peak Air Conditioning
P	Present value in economic analysis
PBR	Performance Based Rates
PEA	Preliminary Energy Audit
PF	Power Factor
PID	Proportional plus integral plus derivative (control system)
PM	Portfolio Manager in Energy Star rating system
PM	Preventive Maintenance
PoolCo	Power Pool Company or Organization
POU	Point of Use
PQ	Power Quality
PSC	Public Service Commission
PSIA psia	Pounds per square inch absolute (pressure)
PSIG psig	Pounds per square inch gauge (pressure)
PUC	Public Utility Commission
PUHCA	Public Utilities Holding Company Act of 1935
PURPA	Public Utilities Regulatory Policies of 1978
PV	Photovotaic system

PV	Present Value
PW	Present Worth
PX	Power Exchange
q	Rate of heat flow in Btu per hour
Q	Heat load due to conduction using degree days
QF	Qualifying Facility
R	Electrical resistance
R	Thermal Resistance
RC	Remote controller
RCR	Room Cavity Ratio
RCRA	Resource Conservation and Recovery Act
Remaining Service Life (RSL)	RSL is the number of years service remaining for a system or equipment item. It is automatically calculated based on the difference between the current year and the 'Calculated Next Renewal' date or the 'Next Renewal' date whichever one is the later date.
Remaining Service Life Index (RSLI)	RSLI is defined as a percentage ratio of the remaining service life of a system. It usually ranges from 0 to 100
REMR	Repair Evaluation Maintenance Rehabilitation (REMR) is a scale used to objectively rank systems based on their condition
Renewal Schedule	A timeline that provides the items that need repair the year in which the repair is needed and the estimated price of the renewal.
RH	Relative Humidity
RLA	Running Load Amps
RMS	Root Mean Square
RO	Reverse Osmosis
ROI	Return on Investment
RPM	Revolutions Per Minute
RTG	Regional Transmission Group
RTO	Regional Transmission Organization
RTP	Real Time Pricing
SBCCI	Southern Building Code Congress International
SC	Scheduling Coordinator
SC	Shading Coefficient
SCADA	Supervisory Control and Data Acquisition Systems

SEER	Seasonal Energy Efficiency Ratio
SHR	Sensible Heat Ratio
Site	The grounds and utilities roadways landscaping fencing and other typical land improvements needed to support the facility.
Soft Cost	An expense item that is not considered direct construction cost. Soft cost includes architectural engineering financing legal fees and other pre-and-post construction expenses.
SOx	Sulfur Oxide Compounds
SP	Static Pressure
SP SPB	Simple Payback
SPP	Simple Payback Period
SPP	Small Power Producers
STR	Stack Temperature Rise
SV	Specific Volume
System	System refers to building and related site work elements as described by ASTM Uniformat II Classification for Building Elements (E1557-97) a format for classifying major facility elements common to most buildings. Elements usually perform a given function regardless of the design specification construction method or materials used. See also Uniformat II.
T	Temperature
T	Tubular (lamps)
TAA	Technical Assistance Audit
TCP/IP	Transmission Control Protocol/Internet Protocol
TES	Thermal Energy Storage
THD	Total Harmonic Distortion
TOD	Time of Day
TOU	Time of Use
TQM	Total Quality Management
TransCo	Transmission Company
U	Thermal Conductance
UDC	Utility Distribution Company
UL	Underwriters Laboratories
UNIFORMAT II	The ASTM UNIFORMAT II Classification for Building Elements (E1557-97) a format for classifying major facility components common to most buildings.
USGBC	US Green Building Council
v	Specific Volume

V	Volts Voltage
V	Volume
VAV	Variable Air Volume
VDT	Video Display Terminal
VFD	Variable Frequency Drive
VHO	Very High Output
VSD	Variable Speed Drive
W	Watts
W	Width
WB	Wet bulb
WH Wh	Watt Hours
Year built	The year that a building or addition was originally built based on substantial completion or occupancy.
Z	Electrical Impedance