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.

Greenfield School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	2200 Chestnut St.	Enrollment	623
	Philadelphia, Pa 19103	Grade Range	'00-08'
Phone/Fax	215-299-3566 / 215-299-3567	Admissions Category	Neighborhood
Website	Www.Centercityschools.Com/Greenfield/	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	**39.18%**	**$18,738,245**	**$47,831,422**
Building	37.69 %	$17,696,107	$46,956,360
Grounds	119.09 %	$1,042,137	$875,062

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	97.62 %	$993,492	$1,017,728
Exterior Walls (Shows condition of the structural condition of the exterior facade)	22.20 %	$786,572	$3,543,360
Windows (Shows functionality of exterior windows)	113.71 %	$1,966,009	$1,728,960
Exterior Doors (Shows condition of exterior doors)	65.43 %	$91,073	$139,200
Interior Doors (Classroom doors)	141.58 %	$477,059	$336,960
Interior Walls (Paint and Finishes)	00.00 %	$0	$1,268,160
Plumbing Fixtures	00.00 %	$0	$1,297,920
Boilers	12.72 %	$227,915	$1,792,320
Chillers/Cooling Towers	02.50 %	$58,782	$2,350,080
Radiators/Unit Ventilators/HVAC	92.66 %	$3,824,134	$4,127,040
Heating/Cooling Controls	158.90 %	$2,059,401	$1,296,000
Electrical Service and Distribution	99.85 %	$929,817	$931,200
Lighting	45.67 %	$1,520,520	$3,329,280
Communications and Security (Cameras, Pa System and Fire Alarm)	51.64 %	$643,979	$1,247,040

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

S247001;Greenfield

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):	96,000
Year Built:	1970
Last Renovation:	
Replacement Value:	$47,831,422
Repair Cost:	$18,738,244.57
Total FCI:	39.18 %
Total RSLI:	76.13 %

Description:

Facility Assessment

September 2015

School District of Philadelphia
Greenfield Elementary School
2200 Chestnut St
Philadelphia, PA 19103

96,000 SF / 676 Students / LN 03

Mr. Tom Sharer, Facility Area Coordinator provided input to the Parsons assessment team on current problems and planned renovation projects. Mr. William Savage, building engineer accompanied us on our tour of the school and provided limited information on the building systems and recent maintenance history. School's principal, Mr. Daniel Lazar added to the information gathered during the site visit.

The Greenfield Elementary school building is located at 2200 Chestnut Street in Philadelphia, PA. The three story with basement,

approximately 96,000 square foot building was originally constructed in 1970.

STRUCTURAL/ EXTERIOR CLOSURE:

The original building typically rests on concrete foundations and concrete bearing walls that are not showing signs of settlement. There are no signs of moisture penetration through basement walls

The main structure consists typically of cast-in-place concrete columns, beams and ribbed concrete slabs (1-way and 2-way). Long spans (gym and auditorium) are supported by concrete encased steel framing. The superstructure is in good condition.

The building envelope is typically face brick masonry with CMU backup. In general, masonry is in fair condition. Water penetration through walls has not been reported, however, some missing mortar, cracking and face brick buckling has been observed, especially at the top of wall just below roof slab reveals.

The building windows are extruded aluminum, curtain wall type with base panels louvered and pivoting operable panels in bay window configuration. All windows are generally in poor condition with deteriorated operable frames and hardware. It's been reported that one operable panel fell out. The leaks around the windows perimeters have been reported due to deteriorated or missing gaskets on operable units. All windows are single glazed, not energy efficient and beyond their service life.

The exterior doors are typically hollow metal doors and frames, painted. The doors are generally in poor condition; no weather-stripping is installed. The entrances on the south and north side of the building leading to main lobby are fully glazed aluminum doors in aluminum, store front type frames showing substantial frames and hardware deterioration.

Roofing system is a built-up system installed approximately in 1990 and in poor condition with large soft spot areas and water ponding; roofing over the classroom bay windows is severely deteriorated. Leaks have been reported. Roof access door is located close to roof edge without OSHA required guardrail.

INTERIORS:

The building partition wall types include painted CMU and hollow metal, hollow metal, glazed borrowed light partitions and drywall partitions; generally in good condition. Folding partition between auditorium and cafeteria is in good condition.

Interior doors are generally solid core wood doors, some glazed, with hollow metal frames. Most doors have deteriorated finish and some are missing hardware, they are beyond service life. The doors leading to exits stairways are hollow metal doors and frames in good condition.

Fittings include toilet accessories and toilet partitions, generally in good condition, installed approximately in 2000, no accessible compartments; chalkboards are mostly original in fair condition. Handrails and ornamental metals are generally in good condition. Built -in cabinets are wood in good condition, installed in mid 2000's. Interior identifying signage is typically directly painted on wall or door surfaces generally in poor condition.

The interior wall finishes in the building are generally painted CMU or drywall. Main lobby on the ground floor and basement is finished with face brick matching the exterior walls. Interiors were painted in 2005 and are in good condition.

Most ceilings in classrooms are 2x2 suspended acoustical panels installed in 2012. Ceilings in most corridors are old and beyond their service life. Acoustical treatment in gym consists of 1x1 tiles directly applied to underside of the slab between structural framing in good condition.

Flooring is typically a mix of VCT, VAT (mostly in gym and corridors) and resilient flooring (cafeteria); and ceramic tile in toilets and main lobby on ground floor and basement. Flooring in the kitchen is quarry tile in good condition. Approximately 50% of VCT flooring was replaced in 2012. Most flooring is in fair to good condition. Portion of Auditorium and Library spaces have carpet installed in 2012 in good condition. Some mold build-up has been reported in moisture damaged areas.

Stair construction is generally steel with concrete filled steel pan treads cast iron non-slip treads in good condition.

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

Furnishings include fixed casework in classrooms, and other spaces are generally in good condition; window shades/blinds, generally

in good condition; fixed seating in auditorium is in good condition.

CONVEYING SYSTEMS:

The building has 2500 lb hydraulic elevator, original to the building. Cabin size does not conform to ADA requirement and its finishes are old and deteriorating.

GROUNDS (SITE):

There is no parking lot at the site; staff parking is located on a separate lot south of Sansom Street. Pavement is in very poor condition, striping is deteriorated with no accessible stalls or signage.

Playground adjacent to the building was renovated in 2009, however, portion of paving is cracked and deteriorated; playground equipment is in good condition. Perimeter of the site comprises of brick knee walls in various stages of deterioration, generally in very poor condition. Structural slab overhang over the gym egress stair is spalled with exposed, severely rusted reinforcement. Most concrete stairs leading from streets surrounding the site to playground and main entrance are substantially deteriorated.

The landscaping around the playground and property line on the north side consists of mature and semi-mature trees and shrubs, generally well maintained.

ACCESSIBILITY:

Generally, the building has an accessible route per ADA requirements, however, floors other than the ground floor are not accessible due to non-compliant elevator cabin. Toilets are not equipped with accessible fixtures and accessories, such as grab bars, and accessible partitions. Most of the doors in the building do not have ADA required door handles.

PLUMBING:

Plumbing Fixtures - Many of the original plumbing fixtures were replaced in 2005 according to the Building Engineer. Fixtures in the restrooms on each floor consist of wall mounted push button flush water closets, wall hung urinals, and lavatories with wheel handle faucets. The units appear to be in good condition and should provide reliable service for the next 20-25 years.

Drinking fountains in the corridors consist of wall hung fixtures with integral refrigerated coolers. The fixtures were replaced in 2005 and are within their service; most are accessible type.

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 sink with lever operated faucets. There are no grease traps. Chemicals are injected manually into the sanitizing basins.

Domestic Water Distribution -A 4” city water service enters the building from Chestnut Street. The 3” meter and valves are located in the basement mechanical room. A reduced pressure backflow preventer is not installed, but should be. Two vertical mounted 5HP domestic pressure booster pumps are installed on the domestic water line to ensure adequate pressure throughout the system, but the water pressure is sufficient that they are not used. The pumps are in poor condition and should be replaced with a skid mounted system. The domestic hot and cold water distribution piping is 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 by a qualified contractor.

One Bradford White Magnum Series electric, 80 gallon, vertical hot water heater with circulating pump supplies hot water for domestic use. The unit is located in the mechanical room on the basement level and has an installation date of 2012. The hot water heater is equipped with a T&P relief valve. The domestic hot water heater is within its service life and reliable service should be provided for the next 5-7 years.

Sanitary Waste - The original storm and sanitary sewer piping is heavy weight cast iron with hub and spigot fittings. A 20” sewer main exits the building in the mechanical room towards Chestnut Street. Downspouts from the roof run down the interior of the building and connect to the storm sewer system in the basement.

The building has a sewage ejector pit located in the basement mechanical room. The sewage ejector has two pumps and was operational at the time of the site visit, but the pumps are old and show signs of damage from rust. The sewage ejector pit should be

sealed, but is not.

The maintenance staff reported mostly minor problems with the sanitary waste piping systems. However, the sewer piping has been in service for 45 years and will require more frequent attention from the maintenance staff as time passes. The District should hire a qualified contractor to examine the sanitary waste piping using video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

Rain Water Drainage - Rain water from the roof is routed down through pipe chases in the interior of the building by both cast iron piping with hub and spigot fittings and galvanized piping with threaded fittings. The drain piping should be inspected by a qualified contractor and repaired as necessary. The Building Engineer reported no major issues with the rain water drainage piping in the addition.

MECHANICAL:

Energy Supply - A 2" city gas service enters the building in the basement from Chestnut Street, the meter is 2". Gas is used only for the kitchen equipment at this time.

Heat Generating Systems - High pressure steam is purchased from Trigen; there are no boilers in the building. The 2" high pressure steam line enters the building in the basement from Chestnut Street and goes through two pressure reducing valves. Two steam to hot water heat exchangers convert the steam to building heating hot water, with water distribution equipment in the basement mechanical room.

Cooling Generating Systems - Chilled water is generated by one (1) nominal 300 ton Carrier model 30XA air cooled screw chiller located on the roof. The chiller has two (2) compressors and utilizes R-134A refrigerant. The chiller was installed in 2013 according to the Building Engineer and appears to be in good condition. Screw chillers have an anticipated service life of 20 years; this unit has been in service 3 years and reliable service should be provided for the next 15-18 years.

Distribution Systems - Building dual temperature piping is black steel with threaded fittings. The Building Engineer reported that much of the dual temperature piping is not insulated, is damaged from rust, and has leaked in the past. The dual temperature distribution piping has been damaged due to improper insulating 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 dual temperature distribution 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.

Steam to hot water heat exchangers provide the building with heating hot water. Two expansion tanks are installed on the hot water piping to ensure proper pressure within the system.

A two pipe distribution system supplies building heating or cooling water to the unit ventilators, air handling units (AHU) and heating and ventilation units (HV). Two 40HP Bell and Gossett end suction chilled water return pumps, P-1 and P-2, serve the chiller. These pumps were installed with the chiller in 2012 and are in good condition. One 2HP Bell and Gossett end suction chilled water supply pump, P-3, also serves the chiller; this pump is in poor condition. One 3HP Armstrong end suction heating water supply pump, P-6, serves the HV units and is in poor condition. Two 7.5HP Armstrong end suction dual temperature pumps, P-4 and P-5, serve either the chilled or hot water loops depending on valve configuration. All piping in the mechanical room was covered with insulation. The heating water supply pump, dual temperature pumps, and chilled water supply pump are in poor condition, and should be replaced.

Unit ventilators provide heating and cooling for the majority of classrooms and indirectly to the hallways. The unit ventilators are original to the building and are beyond their service life. Outdoor air for the building is provided by wall openings in the unit ventilators. The existing unit ventilators should be removed and new units installed. Supplemental heating is provided along the perimeter of classrooms by fin tube radiators.

Three (3) air handling units and one (1) heating and ventilation unit, all original to the building, provide conditioned air to the Gymnasium, interior classrooms, Administration offices, Cafeteria, and Auditorium. One (1) HV unit provides heating and ventilation to the Gymnasium and is located in the mechanical room on the basement level. One (1) AHU, serving the Administration offices and interior classrooms, is located in the mechanical room on the basement level. Two (2) AHUs, serving the Cafeteria and Auditorium respectively, are located in a mechanical room on the ground level. The AHU and HV units are beyond their service life and should be replaced with more efficient modern units.

Mechanical ventilation is provided in the restrooms and Gymnasium by three (3) roof mounted exhaust fans and one (1) through wall. The exhaust fans serving the restrooms are roof mounted and the fan serving the Gymnasium is a through wall fan. All fans but one

(1) are operational according to the Building Engineer; normal maintenance is required for the inoperable fan. No major issues were reported with the exhaust fans. Four (4) power ventilators, located on the roof, allow relief air to escape from the building. All are in working order and good condition

Terminal & Package Units - A Mitsubishi split system air conditioner provides cooling to the LAN room located on the second floor. 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.

Conditioned air is provided to four classrooms by four (4) roof mounted Carrier heat pumps and associated unit ventilators. Larger classrooms were divided into several smaller rooms, thus requiring new fan coil units to be installed to condition the newly created spaces. These units were installed in 2007 and are in good condition. Commercial heat pumps have an anticipated service life of 15 years; these units have been in service 3 years and reliable service should be provided for the next 10-12 years.

Controls & Instrumentation - The original pneumatic systems no longer provide basic control functions. Pneumatic room thermostats are intended to control the dual temperature unit ventilator control valves. In reality the ventilator control valves are wide open and heating and cooling control is achieved via the steam valve or chiller. Pneumatic control air is supplied from a Quincy compressor located in the mechanical room. The pneumatic systems are beyond their service life and require too much attention from the maintenance staff. The original control valves and pneumatic actuators are beyond their service life and should be rebuilt or replaced. These controls should be converted to DDC.

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

Sprinklers - The school building is NOT covered by an automatic sprinkler or fire standpipe 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.

ELECTRICAL:

Site electrical service - The primary power is at 13.2KV from the street power pole which goes underground and feeds pad-mounted transformers (500 KVA, 13.2KV – 120V/208V, 3 Phase). The electrical service is old and has reached the end of its useful service. The main disconnect is rated at 1200A, 120V/208V, 3 phase, and the PECO meter (PECO 01 012453028) is also located inside the electrical room. The service entrance and the main building electrical distribution systems that feeds the building lighting and receptacle loads are old, in poor condition.

A second electrical service was installed recently to provide power for the new HVAC system and IT System (less than 5 years). The new service has a primary power at 13.2KV from the street power pole which goes underground and feeds new transformers (500 KVA, 13.2KV – 480V/227V, 3 Phase). The second electrical service is fairly new and in good condition. The new switchboard and second PECO meter (PECO 01 017457268) is also located inside the electrical room.

Distribution system - The electrical distribution is accomplished with a 120V/208V, 3 phase distribution switchboards. Switchboard feeds the 120V panels throughout the building (two in each floor). These panels are in poor condition and have reached the end of their useful service. However the HVAC and IT panels and MCCs are in good condition.

Receptacles - There is not enough receptacles in classrooms, computer rooms, libraries, and other areas. There should be a minimum of two receptacles on each wall of the classrooms, and other areas.

Lighting -Interior building is illuminated by various types of fixtures. They include fluorescent lighting (with T-12 & T-8 lamp) in majority of the areas, including; classrooms, corridor, offices, and the Kitchen. Surface or pendant mounted industrial fluorescent fixtures are used in mechanical and electrical rooms. Auditorium has new retrofitted high efficiency lamps. The Gymnasium still has the original mercury vapor fixtures installed in 1970. However, the majority of interior lighting fixtures is in a poor condition and has reached the end of their useful service (50% of the building).

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

Telephone/LAN - The school telephone and data systems are new and working adequately. A main distribution frame (MDF) along

with a telephone PBX system is providing the necessary communication function of the building. School is also equipped with Wi-Fi system.

Public Address - Separate PA system does not exist. School uses the telephone systems for public announcement. This system is working adequately. The present Intercom System is functioning fine. Each class room is provided with intercom telephone service. The system permits paging and intercom communication between main office to classrooms, and vice versa (classrooms to main office), and communication between classrooms to classrooms.

Clock and Program system – Program system is new and in good working. The classrooms are provided with the original 12-inch wall mounted round clocks installed in 1970 and controlled properly by central master control panel.

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

Security Systems, access control, and video surveillance - The school does not have a video surveillance system. There are no cameras at exit doors, corridors, exterior, and other critical areas. The school principal expressed some desire to have a video surveillance system. The new cameras should be controlled by a Closed Circuit Television system (CCTV).

Emergency Power System - School has an old (30KW) emergency generator which feeds elevators, emergency lighting and other emergency loads. The Generator is undersized and also has reached the end of its useful service.

Emergency lighting system, including exit lighting - there are insufficient emergency lighting fixtures in corridors and other exit ways. Exit signs and emergency fixtures are old and have reached the end of their useful service.

Lightning Protection System - There is inadequate lightning protection system in the school. The roof has lightning rods, and they are connected to the ground properly via stranded aluminum cables.

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

Site Lighting - The school grounds and building perimeters are not adequately lighted for safety of the people and security of property.

Site Paging - The present Site paging System is not adequate. There is insufficient number of speaker on building’s exterior walls.

Solar Power – The roof has photo-voltaic solar panels that generate electricity. It is a science experiment that the science teacher with the help of students is performing. The entire solar system works properly.

RECOMMENDATIONS:

- Repair cracked and buckling face brick tuck-point all walls.
- Replace structural slab overhand over basement exit
- Install all new roofing system including insulation; tear-down existing roofing; install flashing, and counter flashing
- Remove & reinstall stone coping after completion of roof replacement
- Install safety guardrail at roof access door
- Replace all windows (curtain wall type)
- Replace exterior egress and service doors
- Replace interior doors (70%)
- Replace interior doors hardware for ADA accessibility
- Replace non-ADA compliant toilet partitions; reconfigure remaining toilet partitions
- Replace all VAT flooring
- Conduct a mold remediation in affected areas
- Replace acoustical ceilings in corridors
- Install new signage throughout
- Replace existing elevator with an ADA compliant 2500 lb elevator serving all floors
- Replace pavement of existing parking
- Stripe spaces including accessible spaces, provide ADA signage
- Resurface portion of (40%) playground paving.
- Rebuild knee walls at site perimeter
- Rebuild all site stairs
- Install a reduced pressure backflow preventer on the incoming 4” domestic water line.

- Hire a qualified contractor to perform a detailed inspection of the domestic water piping in use for almost 50 years, and replace any damaged piping.
- Hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Replace existing sewage ejector pump system and piping in the basement as it is beyond its service life and could pose a health risk if the pumps fail.
- 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.
- Hire a qualified contractor to examine the dual temperature distribution piping, in service for nearly 45 years and showing signs of rust damage, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Replace the 2HP end suction chilled water supply pump which is beyond its service life and is in poor condition.
- Replace the two 7.5HP end suction dual temperature water pumps which are beyond their service life and in poor condition.
- Replace the 3HP end suction heating water supply pump which is beyond its service life and is in poor condition.
- Replace the existing unit ventilators with two pipe units that have integral heat exchangers to introduce outdoor air to the building.
- Replace the air handling unit, located in the basement mechanical room, serving the Administration office which is beyond its service life, with a new more efficient unit.
- Replace the air handling unit, located in the ground level mechanical room, serving the Cafeteria which is beyond its service life, with a new more efficient unit.
- Replace the air handling unit, located in the ground level mechanical room, serving the Auditorium which is beyond its service life, with a new more efficient unit.
- Replace the one (1) heating and ventilation unit serving the Gymnasium, which is beyond its service life, by installing a constant volume air handling unit with distribution ductwork and registers.
- 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 new Site electrical service 1500KVA, 480V, 3 Phase to feed the new HVAC Loads as well as the old 120V loads.
- Install a new 480V, 3 phase switchgear.
- Install a new 120V/208V, 3 phase switchgear.
- Install new 120V panelboards throughout the building for lighting, and receptacles loads.
- Install new receptacles in all classrooms and other areas (minimum two receptacles on each wall).
- Install new a lighting system for most of building, except the auditorium and other updated areas (50%).
- Install new emergency exit signs & emergency lights.
- Install a new automated FA System
- Install a new 100KW Emergency Generator.
- Install a new security system with cameras and monitor (CCTV).
- Install new site lighting for safety of the people and security of property.
- Install new site paging on building exterior walls.
- Provide GPS master clock systems and replace the original 12-inch wall mounted round clocks installed in 1970 with battery operated synchronized wireless clocks.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 3 / Tm 4
Status:	Accepted by SDP	Team:	Tm 4
Site ID:	S247001		

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.

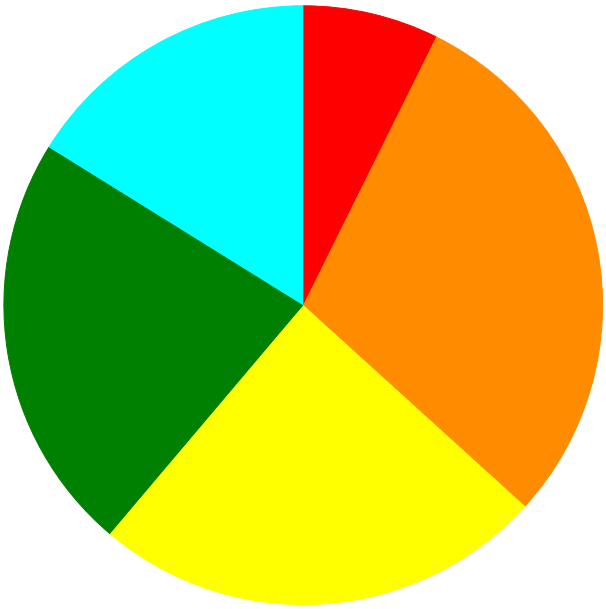
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	55.00 %	0.00 %	$0.00
A20 - Basement Construction	55.00 %	0.00 %	$0.00
B10 - Superstructure	55.00 %	0.76 %	$64,502.65
B20 - Exterior Enclosure	72.34 %	52.55 %	$2,843,653.91
B30 - Roofing	110.00 %	97.62 %	$993,492.18
C10 - Interior Construction	64.69 %	23.01 %	$542,017.05
C20 - Stairs	55.00 %	0.00 %	$0.00
C30 - Interior Finishes	95.65 %	10.78 %	$452,763.40
D10 - Conveying	105.71 %	220.01 %	$323,144.32
D20 - Plumbing	96.88 %	71.50 %	$1,401,644.20
D30 - HVAC	75.41 %	57.78 %	$6,170,232.40
D40 - Fire Protection	105.71 %	177.49 %	$1,373,322.85
D50 - Electrical	110.11 %	62.58 %	$3,531,334.24
E10 - Equipment	57.14 %	0.00 %	$0.00
E20 - Furnishings	62.50 %	0.00 %	$0.00
G20 - Site Improvements	82.35 %	123.68 %	$793,386.28
G40 - Site Electrical Utilities	0.00 %	106.50 %	$248,751.09
Totals:	**76.13 %**	**39.18 %**	**$18,738,244.57**

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)
B247001;Greenfield	96,000	37.69	$1,373,322.85	$5,508,283.36	$4,057,079.39	$3,781,072.34	$2,976,349.26
G247001;Grounds	40,200	119.09	$0.00	$0.00	$524,433.42	$467,363.97	$50,339.98
Total:		**39.18**	**$1,373,322.85**	**$5,508,283.36**	**$4,581,512.81**	**$4,248,436.31**	**$3,026,689.24**

Deficiencies By Priority



- 1 - Response Time (< 2 yr) - $1,373,322.85
- 2 - Response Time (2-3 yrs) - $5,508,283.36
- 3 - Response Time (3-4 yrs) - $4,581,512.81
- 4 - Response Time (4-5 yrs) - $4,248,436.31
- 5 - Response Time (> 5 yrs) - $3,026,689.24

Budget Estimate Total: $18,738,244.57

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):	96,000
Year Built:	1970
Last Renovation:	
Replacement Value:	$46,956,360
Repair Cost:	$17,696,107.20
Total FCI:	37.69 %
Total RSLI:	76.42 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B247001
Sewage Ejector:	Yes	Status:	Accepted by SDP
Site ID:	S247001		

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	55.00 %	0.00 %	$0.00
A20 - Basement Construction	55.00 %	0.00 %	$0.00
B10 - Superstructure	55.00 %	0.76 %	$64,502.65
B20 - Exterior Enclosure	72.34 %	52.55 %	$2,843,653.91
B30 - Roofing	110.00 %	97.62 %	$993,492.18
C10 - Interior Construction	64.69 %	23.01 %	$542,017.05
C20 - Stairs	55.00 %	0.00 %	$0.00
C30 - Interior Finishes	95.65 %	10.78 %	$452,763.40
D10 - Conveying	105.71 %	220.01 %	$323,144.32
D20 - Plumbing	96.88 %	71.50 %	$1,401,644.20
D30 - HVAC	75.41 %	57.78 %	$6,170,232.40
D40 - Fire Protection	105.71 %	177.49 %	$1,373,322.85
D50 - Electrical	110.11 %	62.58 %	$3,531,334.24
E10 - Equipment	57.14 %	0.00 %	$0.00
E20 - Furnishings	62.50 %	0.00 %	$0.00
Totals:	**76.42 %**	**37.69 %**	**$17,696,107.20**

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.	96,000	100	1970	2070		55.00 %	0.00 %	55			$1,766,400
A1030	Slab on Grade	$7.73	S.F.	96,000	100	1970	2070		55.00 %	0.00 %	55			$742,080
A2010	Basement Excavation	$6.55	S.F.	96,000	100	1970	2070		55.00 %	0.00 %	55			$628,800
A2020	Basement Walls	$12.70	S.F.	96,000	100	1970	2070		55.00 %	0.00 %	55			$1,219,200
B1010	Floor Construction	$75.10	S.F.	96,000	100	1970	2070		55.00 %	0.89 %	55		$64,502.65	$7,209,600
B1020	Roof Construction	$13.88	S.F.	96,000	100	1970	2070		55.00 %	0.00 %	55			$1,332,480
B2010	Exterior Walls	$36.91	S.F.	96,000	100	1970	2070		55.00 %	22.20 %	55		$786,571.54	$3,543,360
B2020	Exterior Windows	$18.01	S.F.	96,000	40	1970	2010	2057	105.00 %	113.71 %	42		$1,966,009.16	$1,728,960
B2030	Exterior Doors	$1.45	S.F.	96,000	25	1970	1995	2042	108.00 %	65.43 %	27		$91,073.21	$139,200
B3010105	Built-Up	$37.76	S.F.	26,800	20	1990	2010	2037	110.00 %	97.51 %	22		$986,781.24	$1,011,968
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.	96,000	20	1990	2010	2037	110.00 %	116.51 %	22		$6,710.94	$5,760
C1010	Partitions	$17.91	S.F.	96,000	100	1970	2070		55.00 %	0.00 %	55			$1,719,360
C1020	Interior Doors	$3.51	S.F.	96,000	40	1970	2010	2057	105.00 %	141.58 %	42		$477,058.71	$336,960
C1030	Fittings	$3.12	S.F.	96,000	40	2005	2045		75.00 %	21.69 %	30		$64,958.34	$299,520
C2010	Stair Construction	$1.41	S.F.	96,000	100	1970	2070		55.00 %	0.00 %	55			$135,360

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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.	96,000	10	2005	2015	2027	120.00 %	0.00 %	12			$1,268,160
C3010231	Vinyl Wall Covering	$0.97	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.		30				0.00 %	0.00 %				$0
C3020411	Carpet	$7.30	S.F.	3,600	10	2012	2022		70.00 %	0.00 %	7			$26,280
C3020412	Terrazzo & Tile	$75.52	S.F.	3,600	50	1970	2020		10.00 %	0.00 %	5			$271,872
C3020413	Vinyl Flooring	$9.68	S.F.	63,800	20	1970	1990	2037	110.00 %	24.56 %	22		$151,666.68	$617,584
C3020414	Wood Flooring	$22.27	S.F.		25				0.00 %	0.00 %				$0
C3020415	Concrete Floor Finishes	$0.97	S.F.	4,800	50	1970	2020		10.00 %	0.00 %	5			$4,656
C3030	Ceiling Finishes	$20.97	S.F.	96,000	25	2012	2037		88.00 %	14.96 %	22		$301,096.72	$2,013,120
D1010	Elevators and Lifts	$1.53	S.F.	96,000	35	1970	2005	2052	105.71 %	220.01 %	37		$323,144.32	$146,880
D2010	Plumbing Fixtures	$13.52	S.F.	96,000	35	2012	2047		91.43 %	0.00 %	32			$1,297,920
D2020	Domestic Water Distribution	$1.68	S.F.	96,000	25	1970	1995	2042	108.00 %	333.32 %	27		$537,578.75	$161,280
D2030	Sanitary Waste	$2.90	S.F.	96,000	25	1970	1995	2042	108.00 %	157.46 %	27		$438,360.16	$278,400
D2040	Rain Water Drainage	$2.32	S.F.	96,000	30	1970	2000	2047	106.67 %	191.14 %	32		$425,705.29	$222,720
D3020	Heat Generating Systems	$18.67	S.F.	96,000	35	1970	2005	2020	14.29 %	12.72 %	5		$227,915.22	$1,792,320
D3030	Cooling Generating Systems	$24.48	S.F.	96,000	20	2012	2032		85.00 %	2.50 %	17		$58,782.36	$2,350,080
D3040	Distribution Systems	$42.99	S.F.	96,000	25	1970	1995	2037	88.00 %	92.66 %	22		$3,824,134.07	$4,127,040
D3050	Terminal & Package Units	$11.60	S.F.	96,000	15	2010	2025		66.67 %	0.00 %	10			$1,113,600
D3060	Controls & Instrumentation	$13.50	S.F.	96,000	20	1970	1990	2037	110.00 %	158.90 %	22		$2,059,400.75	$1,296,000
D4010	Sprinklers	$7.05	S.F.	96,000	35			2052	105.71 %	202.91 %	37		$1,373,322.85	$676,800
D4020	Standpipes	$1.01	S.F.	96,000	35			2052	105.71 %	0.00 %	37			$96,960
D5010	Electrical Service/Distribution	$9.70	S.F.	96,000	30	1970	2000	2047	106.67 %	99.85 %	32		$929,817.38	$931,200
D5020	Lighting and Branch Wiring	$34.68	S.F.	96,000	20	1970	1990	2037	110.00 %	45.67 %	22		$1,520,520.44	$3,329,280
D5030	Communications and Security	$12.99	S.F.	96,000	15	1970	1985	2032	113.33 %	51.64 %	17		$643,979.18	$1,247,040
D5090	Other Electrical Systems	$1.41	S.F.	96,000	30	1970	2000	2047	106.67 %	322.86 %	32		$437,017.24	$135,360
E1020	Institutional Equipment	$4.82	S.F.	96,000	35	2000	2035		57.14 %	0.00 %	20			$462,720
E1090	Other Equipment	$11.10	S.F.	96,000	35	2000	2035		57.14 %	0.00 %	20			$1,065,600
E2010	Fixed Furnishings	$2.13	S.F.	96,000	40	2000	2040		62.50 %	0.00 %	25			$204,480
								Total	**76.42 %**	**37.69 %**			**$17,696,107.20**	**$46,956,360**

System Notes

The facility description in the site executive summary contains an overview of each system. The notes listed below provide additional information on select systems found within the facility.

System: C3010 - Wall Finishes — This system contains no images

Note: Paint 90%
Face brick 10%

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

Note: VCT 70%
VAT 13%
Carpet 5%
Ceramic tile 5%
Concrete 7%

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

Note: Acoustic tile 70%
Exposed/ plaster/ GWB 30%

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:	**$17,696,107**	**$0**	**$0**	**$0**	**$0**	**$2,638,198**	**$0**	**$35,553**	**$0**	**$0**	**$1,646,244**	**$22,016,102**
*** 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	$64,503	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$64,503**
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	$786,572	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$786,572**
B2020 - Exterior Windows	$1,966,009	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,966,009**
B2030 - Exterior Doors	$91,073	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$91,073**
B30 - Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010 - Roof Coverings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010105 - Built-Up	$986,781	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$986,781**
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	$6,711	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$6,711**
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**

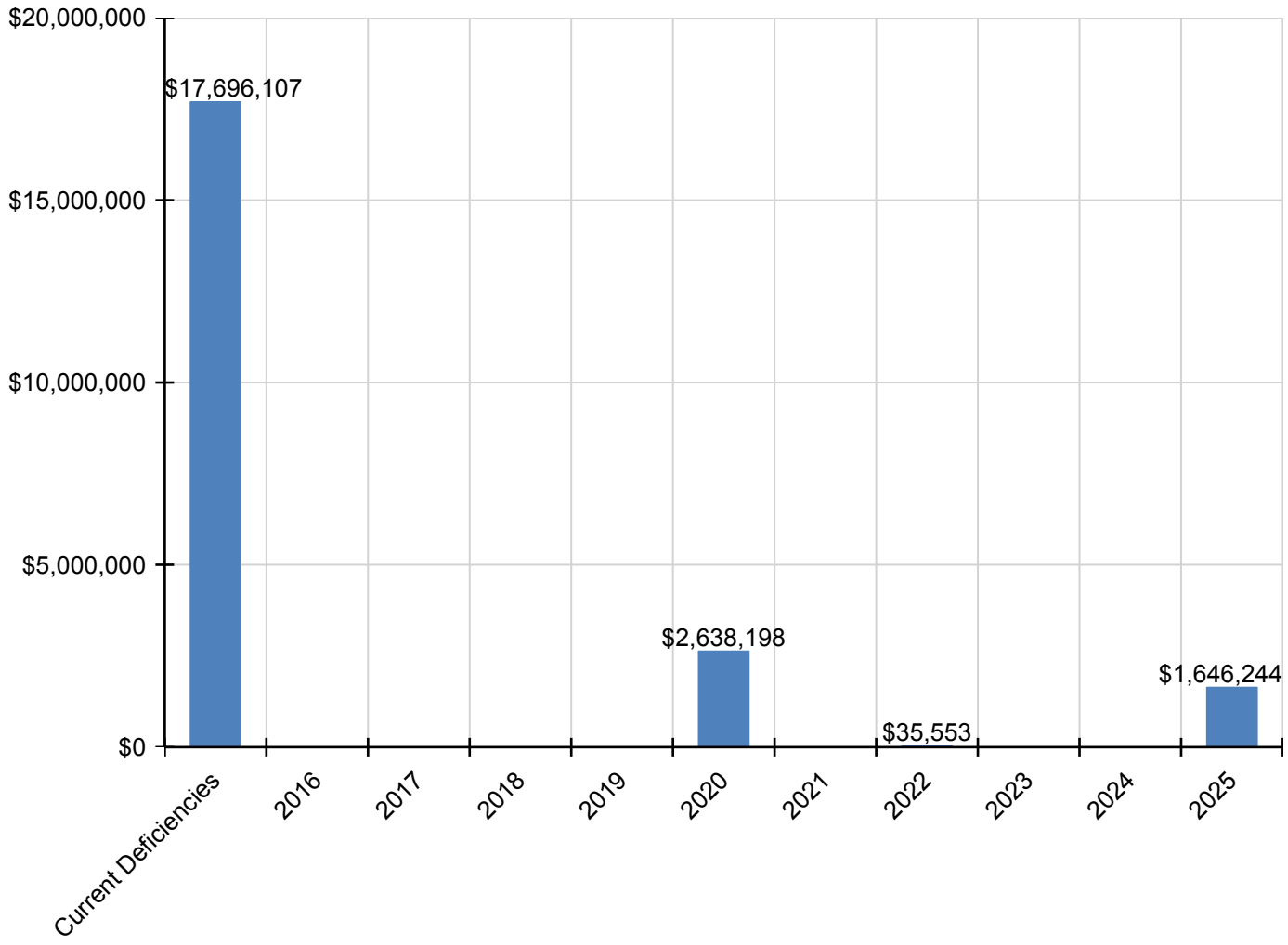
C1020 - Interior Doors	$477,059	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$477,059**
C1030 - Fittings	$64,958	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$64,958**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$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	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$35,553	$0	$0	$0	**$35,553**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$346,691	$0	$0	$0	$0	$0	**$346,691**
C3020413 - Vinyl Flooring	$151,667	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$151,667**
C3020414 - Wood Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$5,938	$0	$0	$0	$0	$0	**$5,938**
C3030 - Ceiling Finishes	$301,097	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$301,097**
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	$323,144	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$323,144**
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	$537,579	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$537,579**
D2030 - Sanitary Waste	$438,360	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$438,360**
D2040 - Rain Water Drainage	$425,705	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$425,705**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$227,915	$0	$0	$0	$0	$2,285,569	$0	$0	$0	$0	$0	**$2,513,484**
D3030 - Cooling Generating Systems	$58,782	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$58,782**
D3040 - Distribution Systems	$3,824,134	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,824,134**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,646,244	**$1,646,244**
D3060 - Controls & Instrumentation	$2,059,401	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,059,401**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$1,373,323	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,373,323**
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	$929,817	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$929,817**
D5020 - Lighting and Branch Wiring	$1,520,520	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,520,520**
D5030 - Communications and Security	$643,979	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$643,979**
D5090 - Other Electrical Systems	$437,017	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$437,017**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

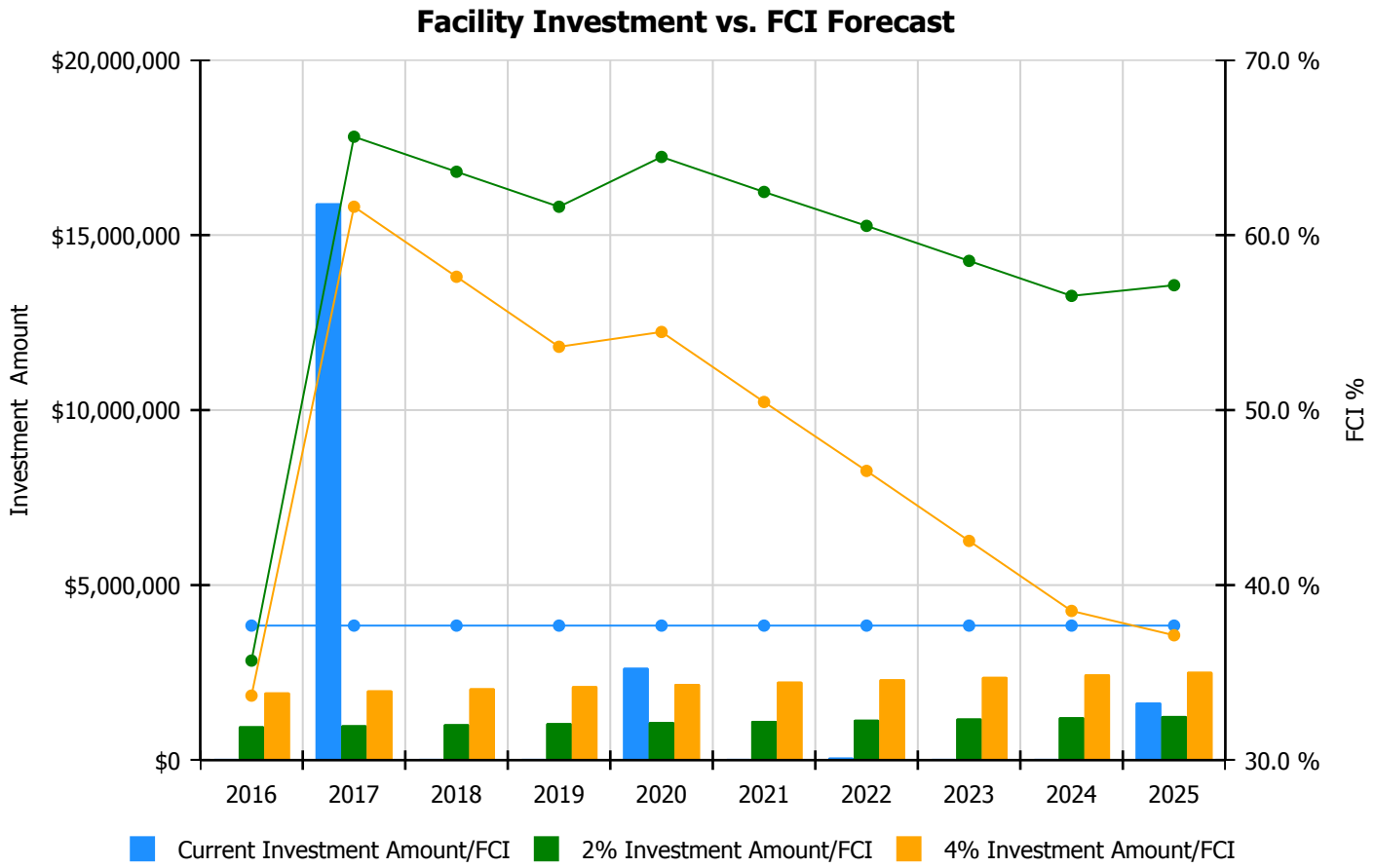
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

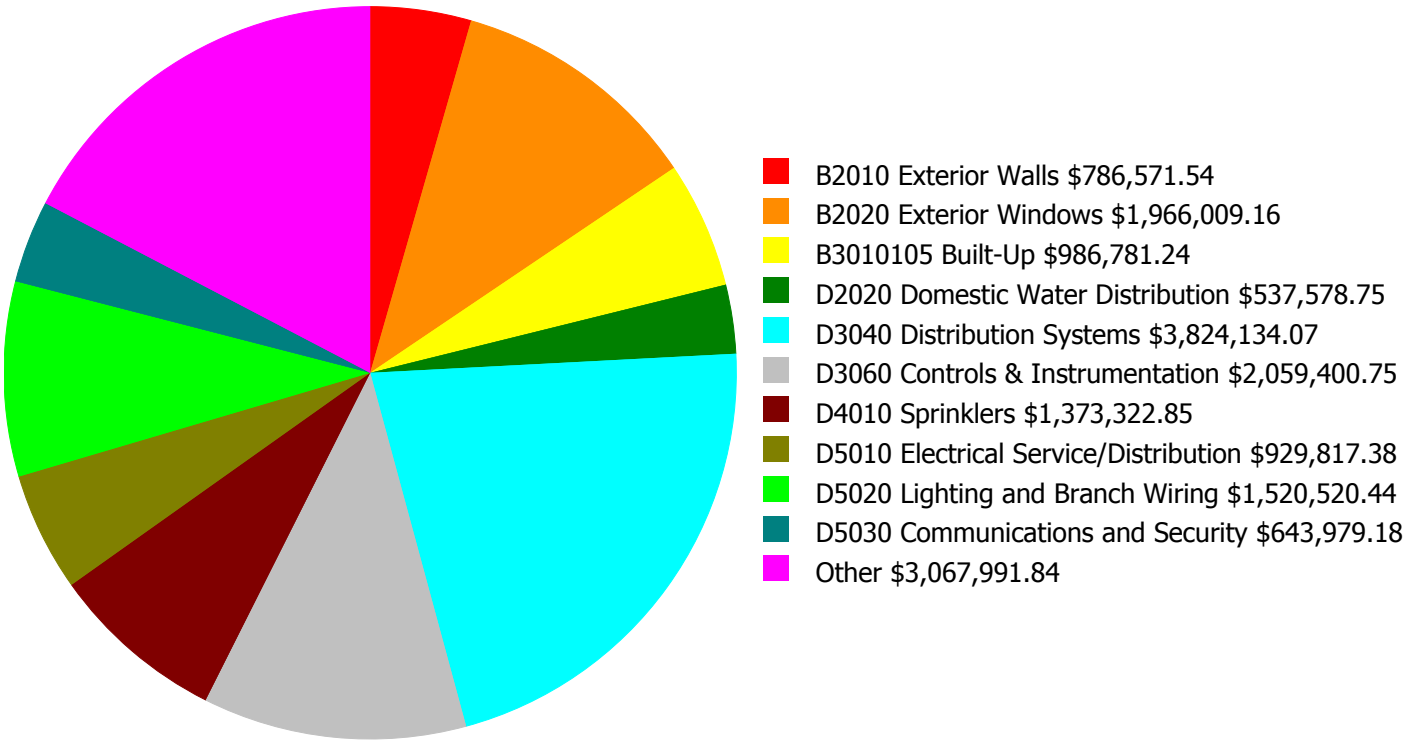
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 37.69%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$967,301.00	35.69 %	$1,934,602.00	33.69 %
2017	$15,906,671	$996,320.00	65.62 %	$1,992,640.00	61.62 %
2018	$0	$1,026,210.00	63.62 %	$2,052,419.00	57.62 %
2019	$0	$1,056,996.00	61.62 %	$2,113,992.00	53.62 %
2020	$2,638,198	$1,088,706.00	64.46 %	$2,177,412.00	54.46 %
2021	$0	$1,121,367.00	62.46 %	$2,242,734.00	50.46 %
2022	$35,553	$1,155,008.00	60.53 %	$2,310,016.00	46.53 %
2023	$0	$1,189,658.00	58.53 %	$2,379,316.00	42.53 %
2024	$0	$1,225,348.00	56.53 %	$2,450,696.00	38.53 %
2025	$1,646,244	$1,262,108.00	57.13 %	$2,524,217.00	37.13 %
Total:	**$20,226,666**	**$11,089,022.00**		**$22,178,044.00**	

Deficiency Summary by System

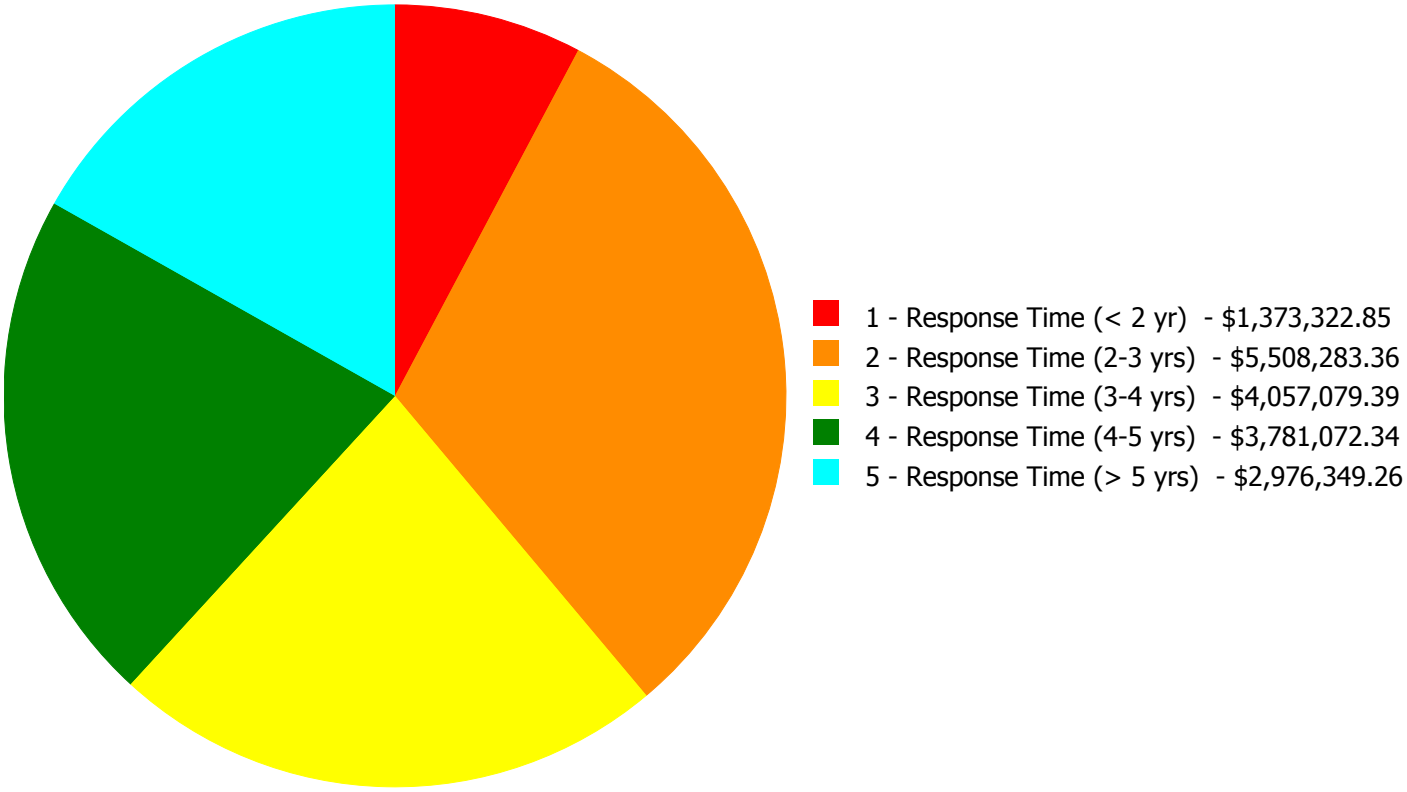
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $17,696,107.20

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: $17,696,107.20

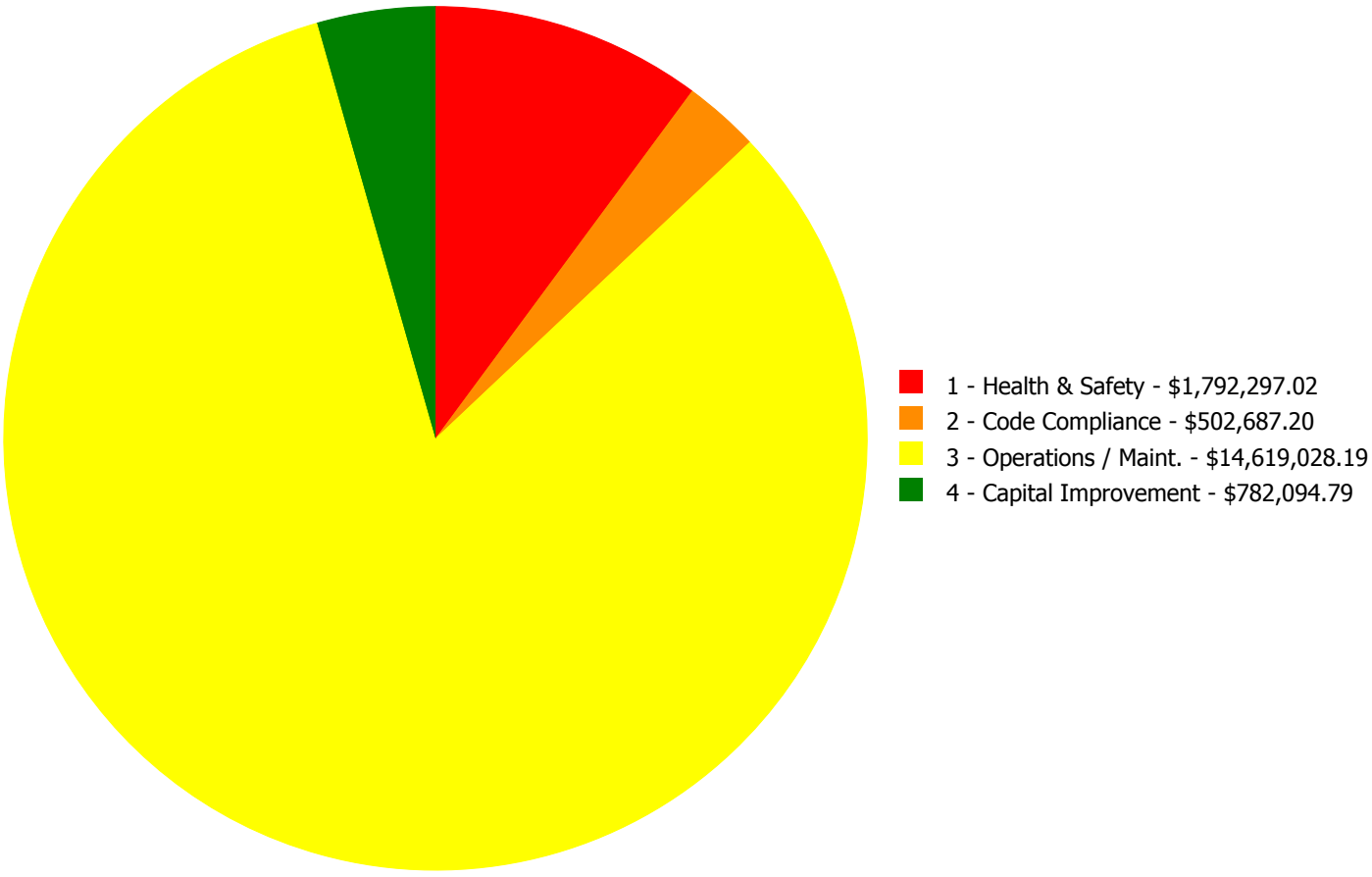
Deficiency By Priority Investment Table

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
B1010	Floor Construction	$0.00	$64,502.65	$0.00	$0.00	$0.00	$64,502.65
B2010	Exterior Walls	$0.00	$786,571.54	$0.00	$0.00	$0.00	$786,571.54
B2020	Exterior Windows	$0.00	$1,966,009.16	$0.00	$0.00	$0.00	$1,966,009.16
B2030	Exterior Doors	$0.00	$0.00	$91,073.21	$0.00	$0.00	$91,073.21
B3010105	Built-Up	$0.00	$908,037.90	$78,743.34	$0.00	$0.00	$986,781.24
B3020	Roof Openings	$0.00	$6,710.94	$0.00	$0.00	$0.00	$6,710.94
C1020	Interior Doors	$0.00	$0.00	$0.00	$477,058.71	$0.00	$477,058.71
C1030	Fittings	$0.00	$0.00	$0.00	$64,958.34	$0.00	$64,958.34
C3020413	Vinyl Flooring	$0.00	$0.00	$0.00	$151,666.68	$0.00	$151,666.68
C3030	Ceiling Finishes	$0.00	$56,761.35	$0.00	$244,335.37	$0.00	$301,096.72
D1010	Elevators and Lifts	$0.00	$0.00	$323,144.32	$0.00	$0.00	$323,144.32
D2020	Domestic Water Distribution	$0.00	$0.00	$51,112.25	$486,466.50	$0.00	$537,578.75
D2030	Sanitary Waste	$0.00	$30,685.95	$407,674.21	$0.00	$0.00	$438,360.16
D2040	Rain Water Drainage	$0.00	$0.00	$425,705.29	$0.00	$0.00	$425,705.29
D3020	Heat Generating Systems	$0.00	$227,915.22	$0.00	$0.00	$0.00	$227,915.22
D3030	Cooling Generating Systems	$0.00	$58,782.36	$0.00	$0.00	$0.00	$58,782.36
D3040	Distribution Systems	$0.00	$908,195.77	$303,114.92	$1,695,874.87	$916,948.51	$3,824,134.07
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$0.00	$2,059,400.75	$2,059,400.75
D4010	Sprinklers	$1,373,322.85	$0.00	$0.00	$0.00	$0.00	$1,373,322.85
D5010	Electrical Service/Distribution	$0.00	$494,110.52	$0.00	$435,706.86	$0.00	$929,817.38
D5020	Lighting and Branch Wiring	$0.00	$0.00	$1,520,520.44	$0.00	$0.00	$1,520,520.44
D5030	Communications and Security	$0.00	$0.00	$418,974.17	$225,005.01	$0.00	$643,979.18
D5090	Other Electrical Systems	$0.00	$0.00	$437,017.24	$0.00	$0.00	$437,017.24
	Total:	$1,373,322.85	$5,508,283.36	$4,057,079.39	$3,781,072.34	$2,976,349.26	$17,696,107.20

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: $17,696,107.20

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: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Install a fire protection sprinkler system

Qty: 96,000.00

Unit of Measure: S.F.

Estimate: $1,373,322.85

Assessor Name: Craig Anding

Date Created: 11/10/2015

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

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

System: B1010 - Floor Construction

Location: Exterior

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace elevated concrete deck with one way concrete beams and slab

Qty: 240.00

Unit of Measure: S.F.

Estimate: $64,502.65

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Replace structural slab overhand over basement exit

System: B2010 - Exterior Walls

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

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

Qty: 24,360.00

Unit of Measure: S.F.

Estimate: $786,571.54

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Repair cracked and buckling face brick tuck-point all walls

System: B2020 - Exterior Windows

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Remove and replace curtain wall systems - SF of curtain wall area

Qty: 12,000.00

Unit of Measure: S.F.

Estimate: $1,966,009.16

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Replace all windows (curtain wall type)

System: B3010105 - Built-Up

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Built Up Roof

Qty: 26,800.00

Unit of Measure: S.F.

Estimate: $908,037.90

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Install all new roofing system including insulation; tear-down existing roofing; install flashing, and counter flashing

System: B3020 - Roof Openings

Location: Exterior

Distress: OSHA

Category: 2 - Code Compliance

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

Correction: Install safety guard rails at roof perimeter (OSHA required if roof hatch is 10' from roof edge).

Qty: 10.00

Unit of Measure: L.F.

Estimate: $6,710.94

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Install safety guardrail at roof access door

System: C3030 - Ceiling Finishes

Location: Interior

Distress: Life Safety / NFPA / PFD

Category: 2 - Code Compliance

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

Correction: Ceiling mold remediation - select the material and insert quantities

Qty: 2,000.00

Unit of Measure: S.F.

Estimate: $56,761.35

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Conduct a mold remediation in affected areas

System: D2030 - Sanitary Waste

Location: Basement mechanical room

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $30,685.95

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Replace existing sewage ejector pump system and piping in the basement as it is beyond its service life and could pose a health risk if the pumps fail.

System: D3020 - Heat Generating Systems

Location: Basement mechanical room

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace pump, base-mounted, end suction HHW (4" size, 7-1/2 HP, to 350 GPM)

Qty: 2.00

Unit of Measure: Ea.

Estimate: $161,580.94

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Replace the two 7.5HP end suction dual temperature water pumps which are beyond their service life and in poor condition.

System: D3020 - Heat Generating Systems

Location: Basement mechanical room

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace pump, base-mounted, end suction HHW (3" size, 5 HP, to 225 GPM)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $66,334.28

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Replace the 3HP end suction heating water supply pump which is beyond its service life and is in poor condition.

System: D3030 - Cooling Generating Systems

Location: Basement mechanical room

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace base mounted, end suction CHW pump (3" size, 5 HP, to 225 GPM)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $58,782.36

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Replace the 2HP end suction chilled water supply pump which is beyond its service life and is in poor condition.

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 96,000.00

Unit of Measure: S.F.

Estimate: $908,195.77

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Hire a qualified contractor to examine the dual temperature distribution piping, in service for nearly 45 years and showing signs of rust damage, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.

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: $494,110.52

Assessor Name: Craig Anding

Date Created: 01/05/2016

Notes: Install new 120V panel-boards throughout the building for lighting, and receptacles loads.

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

System: B2030 - Exterior Doors

Location: Exterior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 10.00

Unit of Measure: Ea.

Estimate: $91,073.21

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Replace exterior egress and service doors

System: B3010105 - Built-Up

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace parapet caps - BUR

Qty: 920.00

Unit of Measure: L.F.

Estimate: $78,743.34

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Remove reinstall stone coping after completion of roof replacement

System: D1010 - Elevators and Lifts

Location: Interior

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Replace elevator - 4 stop electric traction

Qty: 1.00

Unit of Measure: Ea.

Estimate: $323,144.32

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Replace existing elevator with an ADA compliant 2500 lb elevator serving all floors

System: D2020 - Domestic Water Distribution

This deficiency has no image.

Location: Basement mechanical room

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Provide 4" reduced pressure back flow preventer

Qty: 1.00

Unit of Measure: Ea.

Estimate: $51,112.25

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Install a reduced pressure backflow preventer on the incoming 4” domestic water line to meet code.

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. (+100KSF)

Qty: 96,000.00

Unit of Measure: S.F.

Estimate: $407,674.21

Assessor Name: Craig Anding

Date Created: 11/10/2015

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

System: D2040 - Rain Water Drainage

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 96,000.00

Unit of Measure: S.F.

Estimate: $425,705.29

Assessor Name: Craig Anding

Date Created: 11/10/2015

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

System: D3040 - Distribution Systems

Location: 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: 182.00

Unit of Measure: Seat

Estimate: $303,114.92

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Replace the air handling unit, located in the ground level mechanical room, serving the Auditorium which is beyond its service life, with a new more efficient unit.

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: $844,759.40

Assessor Name: Craig Anding

Date Created: 01/05/2016

Notes: Install new a lighting system for most of building, except the Gym, the auditorium and other updated areas (50%). Total SF = 50% of 96,000 SF = 48,000 SF

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 Wiring Devices (SF) - surface mounted conduit and boxes

Qty: 0.00

Unit of Measure: S.F.

Estimate: $675,761.04

Assessor Name: Craig Anding

Date Created: 01/05/2016

Notes: Install new receptacles in all classrooms and other areas (minimum two receptacles on each wall).

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 Communications and Alarm Systems

Qty: 0.00

Unit of Measure: S.F.

Estimate: $418,974.17

Assessor Name: Craig Anding

Date Created: 01/05/2016

Notes: Install a new automated FA System
Note: A multiplier 0f 4.0 was selected instead of 1.0 due to the size of the building.

System: D5090 - Other Electrical Systems

Location: throuout 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: $296,433.61

Assessor Name: Craig Anding

Date Created: 01/05/2016

Notes: Install new emergency exit signs emergency lights.

System: D5090 - Other Electrical Systems

Location: electrical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace standby generator system

Qty: 1.00

Unit of Measure: Ea.

Estimate: $140,583.63

Assessor Name: Craig Anding

Date Created: 01/05/2016

Notes: Install a new 100KW Emergency Generator.

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

System: C1020 - Interior Doors

Location: Interiors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 100.00

Unit of Measure: Ea.

Estimate: $477,058.71

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Replace interior doors (70%)

System: C1030 - Fittings

Location: Interior

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Remove and replace damaged toilet paritions - handicap units

Qty: 20.00

Unit of Measure: Ea.

Estimate: $64,958.34

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Replace non-ADA compliant toilet partitions; reconfigure remaining toilet partitions

System: C3020413 - Vinyl Flooring

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 10,000.00

Unit of Measure: S.F.

Estimate: $151,666.68

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Replace all VAT flooring

System: C3030 - Ceiling Finishes

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 16,200.00

Unit of Measure: S.F.

Estimate: $244,335.37

Assessor Name: Craig Anding

Date Created: 01/06/2016

Notes: Replace acoustical ceilings in corridors

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: 96,000.00

Unit of Measure: S.F.

Estimate: $486,466.50

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for almost 50 years, and replace any damaged piping.

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 34.00

Unit of Measure: Ea.

Estimate: $1,695,874.87

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Replace the existing unit ventilators with two pipe units that have integral heat exchangers to introduce outdoor air to the building.

System: D5010 - Electrical Service/Distribution

Location: electrical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Service Transformer, Add Switchboard

Qty: 0.00

Unit of Measure: Ea.

Estimate: $435,706.86

Assessor Name: Craig Anding

Date Created: 01/05/2016

Notes: Install new Site electrical service 1500KVA, 480V, 3 Phase to feed the new HVAC Loads as well as the old 120V loads.
Install a new 480V, 3 phase switchgear.
Install a new 120V/208V, 3 phase switchgear.
•

System: D5030 - Communications and Security

This deficiency has no image.

Location: throughout the building

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add/Replace Video Surveillance System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $95,148.18

Assessor Name: Craig Anding

Date Created: 01/05/2016

Notes: Install new security system with cameras and CCTV monitoring for a complete video surveillance system.
Note: there is no picture attached since presently school does not have a security camera system.

System: D5030 - Communications and Security

Location: throughout the building

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add/Replace Video Surveillance System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $86,056.76

Assessor Name: Craig Anding

Date Created: 01/05/2016

Notes: Install a new security system with cameras and monitor (CCTV).

System: D5030 - Communications and Security

Location: Classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Add/Replace Clock System or Components

Qty: 1.00

Unit of Measure: Ea.

Estimate: $43,800.07

Assessor Name: Craig Anding

Date Created: 02/17/2016

Notes: Provide GPS master clock systems and replace the original 12-inch wall mounted round clocks installed in 1970 with battery operated synchronized wireless clocks.

Priority 5 - Response Time (> 5 yrs):

System: D3040 - Distribution Systems

Location: Cafeteria

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 676.00

Unit of Measure: Pr.

Estimate: $316,058.66

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Replace the air handling unit, located in the ground level mechanical room, serving the Cafeteria which is beyond its service life, with a new more efficient unit.

System: D3040 - Distribution Systems

Location: Gymnasium

Distress: Energy Efficiency

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 6,000.00

Unit of Measure: Ea.

Estimate: $308,301.04

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Replace the one (1) heating and ventilation unit serving the Gymnasium, which is beyond its service life, by installing a constant volume air handling unit with distribution ductwork and registers.

System: D3040 - Distribution Systems

Location: Administration

Distress: Energy Efficiency

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 676.00

Unit of Measure: Pr.

Estimate: $292,588.81

Assessor Name: Craig Anding

Date Created: 11/10/2015

Notes: Replace the air handling unit, located in the basement mechanical room, serving the Administration office which is beyond its service life, with a new more efficient unit.

System: D3060 - Controls & Instrumentation

Location: Throughout building

Distress: Failing

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 96,000.00

Unit of Measure: S.F.

Estimate: $2,059,400.75

Assessor Name: Craig Anding

Date Created: 11/10/2015

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

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D1010 Elevators and Lifts	Hydraulic, passenger elevator, 2500 lb, 5 floors, 100 FPM	1.00	Ea.	inside the building					30	1970	2040	$142,170.00	$156,387.00
D2020 Domestic Water Distribution	Pump, general utility, centrifugal, in-line, vertical mount, iron body, 125 lb. flanged, 1800 RPM, single stage, 5 H.P., 6" discharge, includes TEFC motor	2.00	Ea.	Basement Mechanical Room					25	1970	1995	$7,296.00	$16,051.20
D2020 Domestic Water Distribution	Pump, general utility, centrifugal, in-line, vertical mount, iron body, 125 lb. flanged, 1800 RPM, single stage, 5 H.P., 6" discharge, includes TEFC motor	2.00	Ea.	Basement Mechanical Room					25	1970	1995	$7,296.00	$16,051.20
D3030 Cooling Generating Systems	Water chiller, screw liquid chiller, air cooled, insulated evaporator, 320 ton, includes standard controls	1.00	Ea.	Roof	Carrier	30XAB30266	1413Q93075		20	2012	2032	$248,589.00	$273,447.90
D3040 Distribution Systems	Pump, general utility, centrifugal, end suction, horizontal base mounted, vertical split case, rated @ 100' head, single stage, 1050 GPM, 40 H.P., 5" discharge, includes drip proof motor	2.00	Ea.	Basement Mechanical Room	Bell and Gossett	1510	C166870-02D31		25	2012	2037	$13,794.00	$30,346.80
D3040 Distribution Systems	Pump, general utility, centrifugal, end suction, horizontal base mounted, vertical split case, rated @ 100' head, single stage, 1050 GPM, 40 H.P., 5" discharge, includes drip proof motor	2.00	Ea.	Basement Mechanical Room	Bell and Gossett	1510	C166870-01D31		25	2012	2037	$13,794.00	$30,346.80
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NQOD, 120/208 V, 400 A, 5 stories, 50' horizontal	2.00	Ea.	electrical room					30	2010	2040	$20,524.05	$45,152.91
D5010 Electrical Service/Distribution	Switchboards, distribution section, aluminum bus bars, 4 W, 120/208 or 277/480 V, 2000 amp, excl breakers	1.00	Ea.	electrical room					30	1970	2040	$8,352.45	$9,187.70
												Total:	**$576,971.51**

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):	40,200
Year Built:	1970
Last Renovation:	
Replacement Value:	$875,062
Repair Cost:	$1,042,137.37
Total FCI:	119.09 %
Total RSLI:	60.37 %

Description:

Attributes:

General Attributes:

Bldg ID:	S247001	Site ID:	S247001

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	82.35 %	123.68 %	$793,386.28
G40 - Site Electrical Utilities	0.00 %	106.50 %	$248,751.09
Totals:	**60.37 %**	**119.09 %**	**$1,042,137.37**

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.	6,300	30	1990	2020		16.67 %	166.36 %	5		$89,087.69	$53,550
G2030	Pedestrian Paving	$12.30	S.F.	29,900	40	1970	2010	2057	105.00 %	13.69 %	42		$50,339.98	$367,770
G2040	Site Development	$4.36	S.F.	40,200	25	2009	2034		76.00 %	373.11 %	19		$653,958.61	$175,272
G2050	Landscaping & Irrigation	$4.36	S.F.	10,300	15				0.00 %	0.00 %				$44,908
G4020	Site Lighting	$4.84	S.F.	40,200	30				0.00 %	79.43 %			$154,545.48	$194,568
G4030	Site Communications & Security	$0.97	S.F.	40,200	30				0.00 %	241.59 %			$94,205.61	$38,994
								Total	**60.37 %**	**119.09 %**			**$1,042,137.37**	**$875,062**

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.

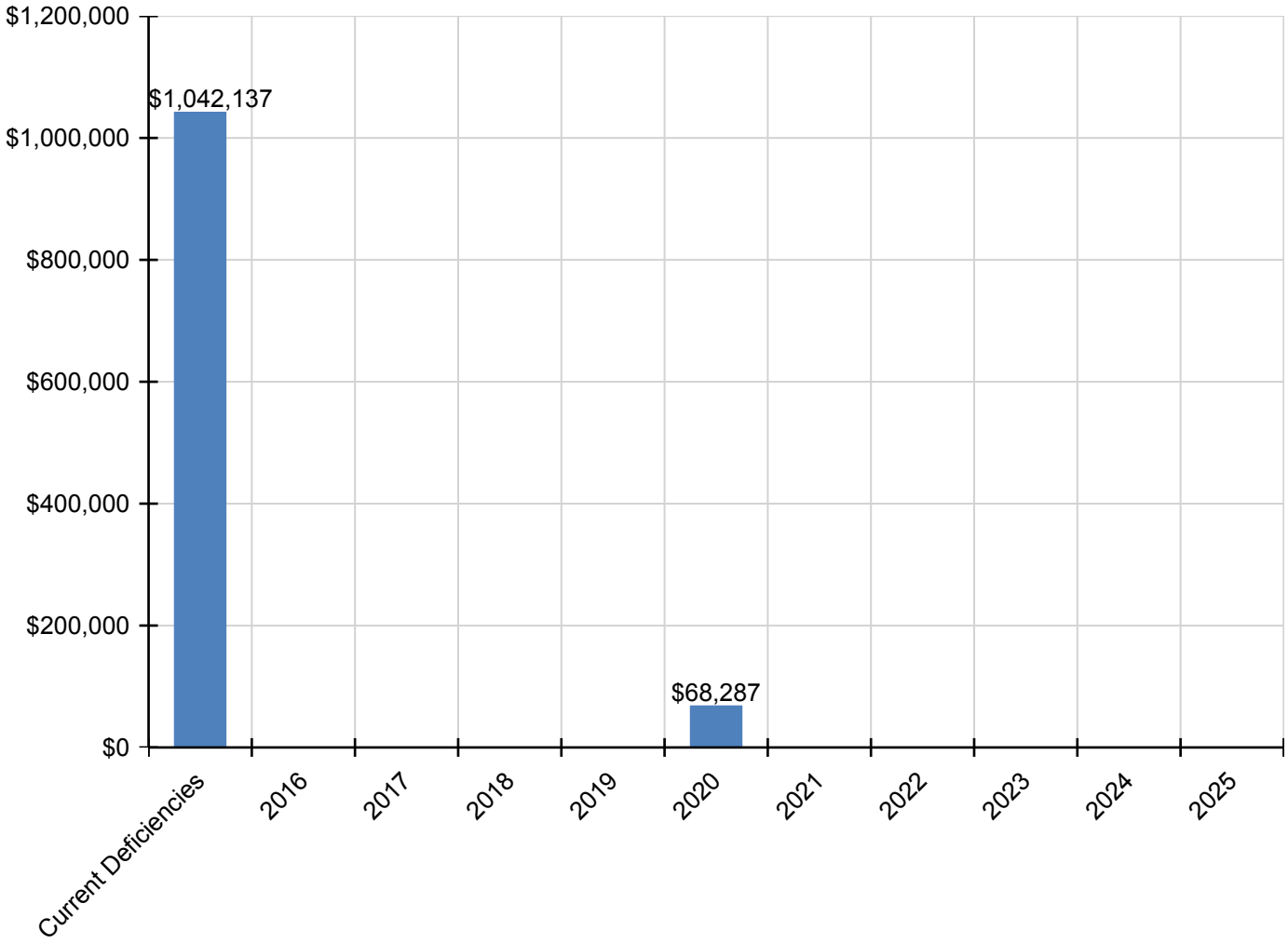
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$1,042,137**	**$0**	**$0**	**$0**	**$0**	**$68,287**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,110,424**
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	$89,088	$0	$0	$0	$0	$68,287	$0	$0	$0	$0	$0	**$157,375**
G2030 - Pedestrian Paving	$50,340	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$50,340**
G2040 - Site Development	$653,959	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$653,959**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$154,545	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$154,545**
G4030 - Site Communications & Security	$94,206	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$94,206**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

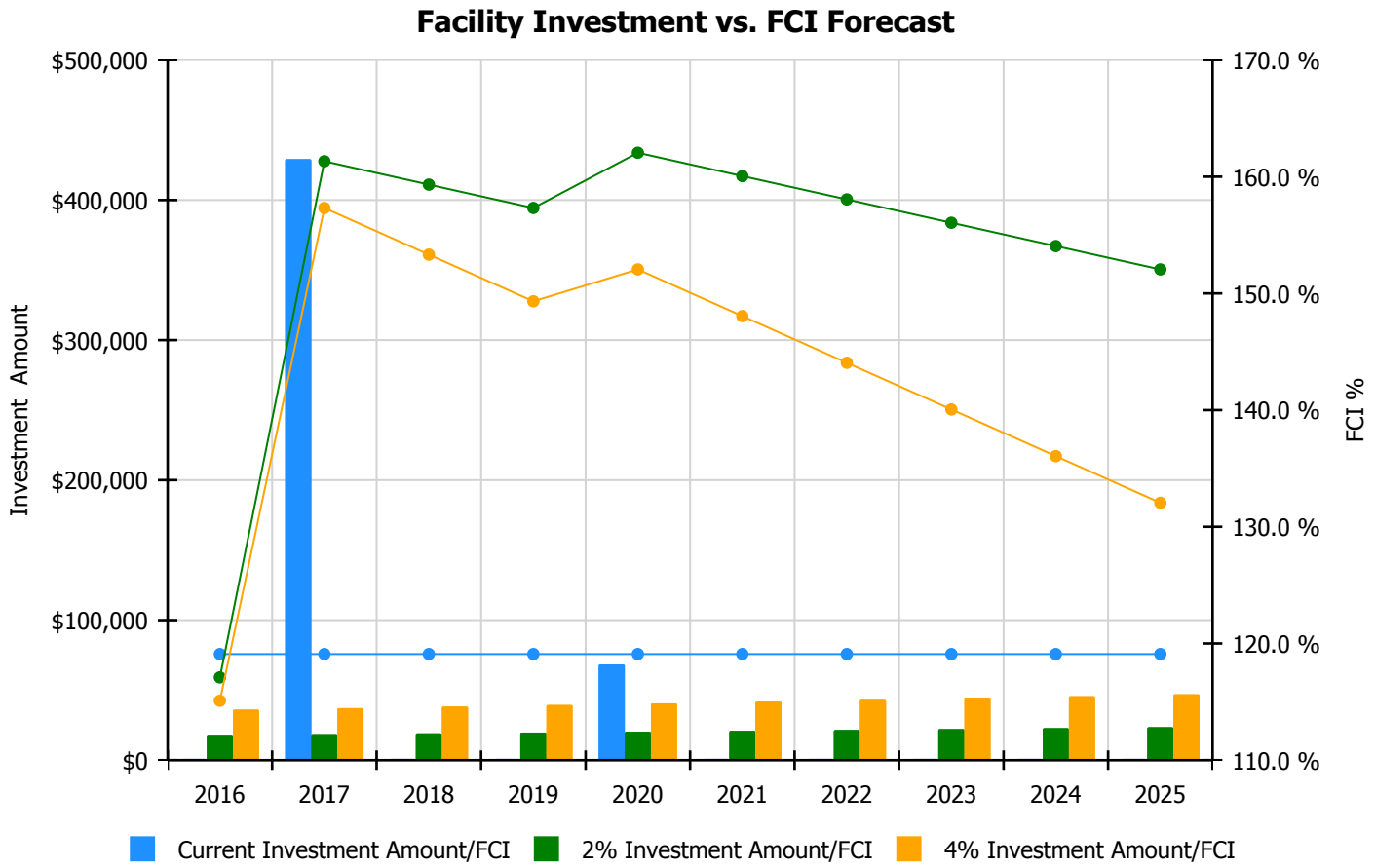
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

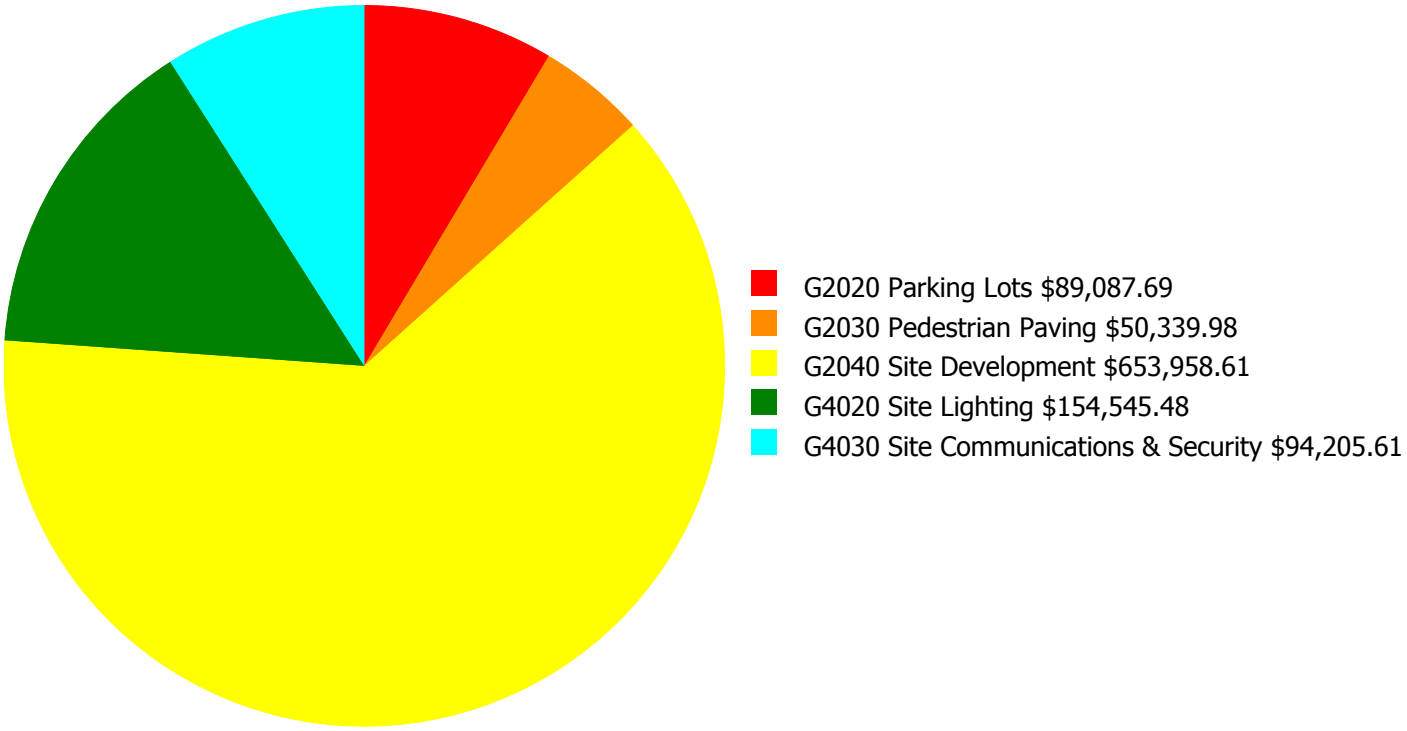
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 119.09%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$18,026.00	117.09 %	$36,053.00	115.09 %
2017	$429,184	$18,567.00	161.32 %	$37,134.00	157.32 %
2018	$0	$19,124.00	159.32 %	$38,248.00	153.32 %
2019	$0	$19,698.00	157.32 %	$39,396.00	149.32 %
2020	$68,287	$20,289.00	162.06 %	$40,577.00	152.06 %
2021	$0	$20,897.00	160.06 %	$41,795.00	148.06 %
2022	$0	$21,524.00	158.06 %	$43,049.00	144.06 %
2023	$0	$22,170.00	156.06 %	$44,340.00	140.06 %
2024	$0	$22,835.00	154.06 %	$45,670.00	136.06 %
2025	$0	$23,520.00	152.06 %	$47,040.00	132.06 %
Total:	**$497,471**	**$206,650.00**		**$413,302.00**	

Deficiency Summary by System

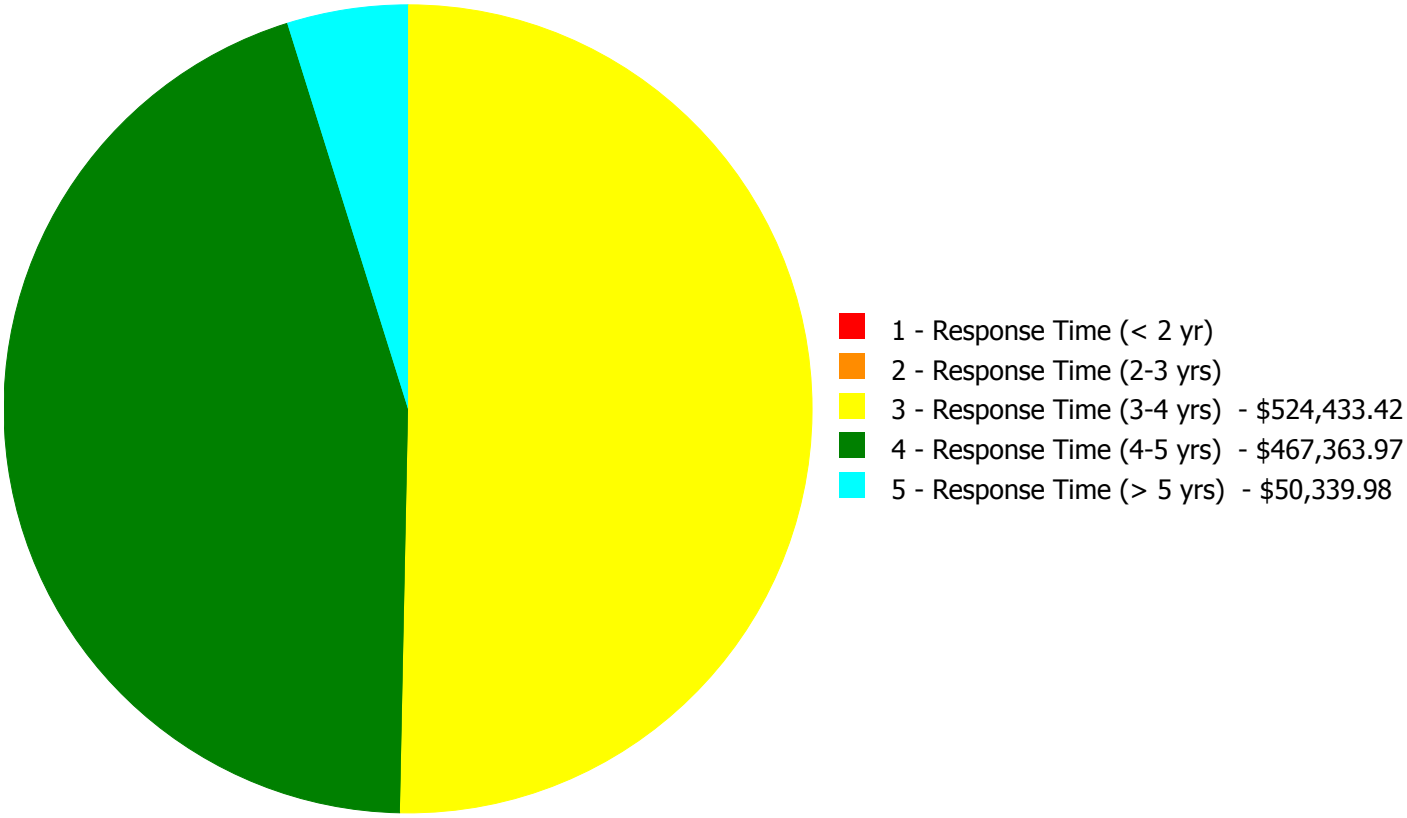
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $1,042,137.37

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: $1,042,137.37

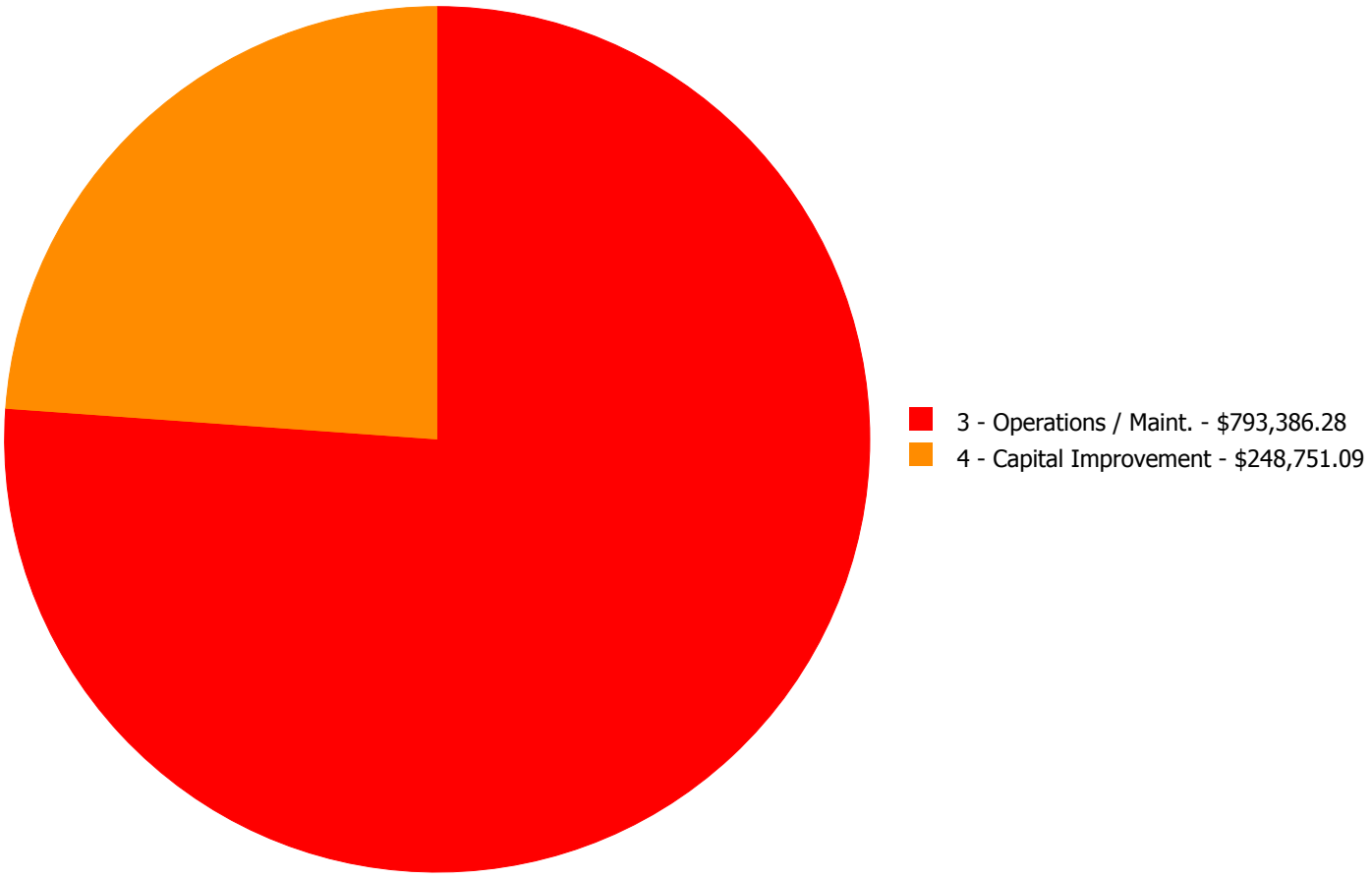
Deficiency By Priority Investment Table

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	$89,087.69	$0.00	$0.00	$89,087.69
G2030	Pedestrian Paving	$0.00	$0.00	$0.00	$0.00	$50,339.98	$50,339.98
G2040	Site Development	$0.00	$0.00	$280,800.25	$373,158.36	$0.00	$653,958.61
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	$94,205.61	$0.00	$94,205.61
	Total:	$0.00	$0.00	$524,433.42	$467,363.97	$50,339.98	$1,042,137.37

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:



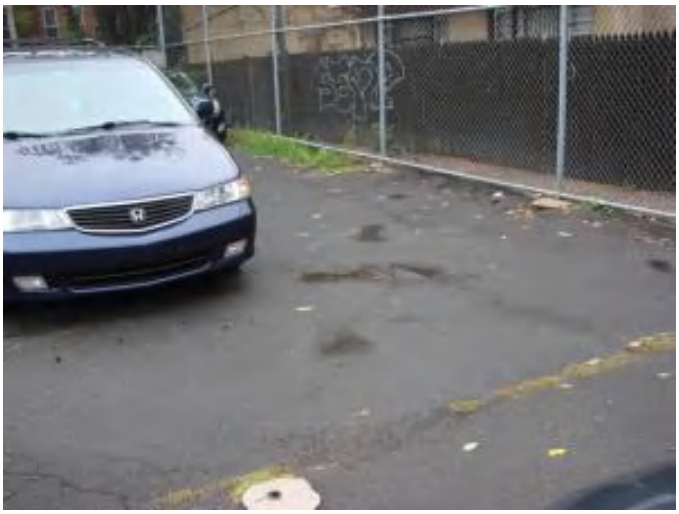
Budget Estimate Total: $1,042,137.37

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: Grounds
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 3 - Response Time (3-4 yrs)
Correction: Remove and replace AC paving parking lot
Qty: 6,300.00
Unit of Measure: S.F.
Estimate: $89,087.69
Assessor Name: Wlodek Pieczonka
Date Created: 01/06/2016

Notes: Replace pavement of existing parking

System: G2040 - Site Development

Location: Grounds
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 3 - Response Time (3-4 yrs)
Correction: Remove and replace on grade concrete steps - based on 6' wide steps and 6 or 12 risers - modify estimate to suit the configuration
Qty: 20.00
Unit of Measure: Flight
Estimate: $280,800.25
Assessor Name: Wlodek Pieczonka
Date Created: 01/06/2016

Notes: Rebuild all site stairs

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: Wlodek Pieczonka

Date Created: 01/05/2016

Notes: Install new site lighting for safety of the people and security of property.

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

System: G2040 - Site Development

Location: Grounds

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Repair and regrout stone retaining wall - LF of wall - up to 4' tall

Qty: 800.00

Unit of Measure: L.F.

Estimate: $373,158.36

Assessor Name: Wlodek Pieczonka

Date Created: 01/06/2016

Notes: Rebuild knee walls at site perimeter

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: $94,205.61

Assessor Name: Wlodek Pieczonka

Date Created: 01/05/2016

Notes: Install new site paging on building exterior walls.

Priority 5 - Response Time (> 5 yrs):

System: G2030 - Pedestrian Paving

Location: Grounds

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 3,500.00

Unit of Measure: S.F.

Estimate: $50,339.98

Assessor Name: Wlodek Pieczonka

Date Created: 01/06/2016

Notes: Resurface portion of (40%) playground paving

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