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.

Kelly, JB School

Governance	DISTRICT	Report Type	Elementary
Address	5116 Pulaski Ave.	Enrollment	674
	Philadelphia, Pa 19144	Grade Range	'00-05'
Phone/Fax	215-951-4011 / 215-951-4182	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Kelly	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	**43.47%**	**$23,538,755**	**$54,148,943**
Building	42.00 %	$21,821,063	$51,949,017
Grounds	78.08 %	$1,717,692	$2,199,926

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	89.69 %	$2,553,174	$2,846,728
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.00 %	$0	$3,763,934
Windows (Shows functionality of exterior windows)	46.71 %	$857,908	$1,836,588
Exterior Doors (Shows condition of exterior doors)	186.16 %	$275,267	$147,865
Interior Doors (Classroom doors)	146.61 %	$524,765	$357,936
Interior Walls (Paint and Finishes)	17.09 %	$270,955	$1,585,727
Plumbing Fixtures	28.23 %	$389,172	$1,378,716
Boilers	44.77 %	$852,370	$1,903,892
Chillers/Cooling Towers	03.73 %	$93,046	$2,496,372
Radiators/Unit Ventilators/HVAC	162.00 %	$7,102,012	$4,383,948
Heating/Cooling Controls	158.90 %	$2,187,599	$1,376,676
Electrical Service and Distribution	79.28 %	$784,223	$989,167
Lighting	31.95 %	$1,129,764	$3,536,528
Communications and Security (Cameras, Pa System and Fire Alarm)	47.85 %	$633,867	$1,324,668

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

S647001;Kelly, John

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):	101,976
Year Built:	1970
Last Renovation:	
Replacement Value:	$54,148,943
Repair Cost:	$23,538,754.52
Total FCI:	43.47 %
Total RSLI:	77.94 %

Description:

Facility Assessment, December 2015

School District of Philadelphia

John B. Kelly Elementary School

5116 Pulaski Ave.

Philadelphia, PA 19144

101,976 SF / 795 Students / LN 06

The Kelly Elementary school building is located at 5116 Pulaski Ave in Philadelphia, PA. The two story 101,976 square foot building was originally constructed in 1970. A small basement area houses mechanical rooms.

The Facility Area Coordinator was not able to accompany the Parsons assessment team on this site visit. Mr. Greg Hawkins, the Custodial Assistant, accompanied us on our tour of the school and provided us with information on the building systems and recent maintenance history. The Building

Engineer was not available during the site visit.

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.

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.

The building windows are extruded aluminum, curtain wall type with translucent panels over louvered glazed windows. All windows and panels are generally in poor condition with damaged, missing, and deteriorated frames and hardware.

The exterior doors are typically hollow metal doors and frames, painted. The doors are generally in poor condition and beyond service life; no weather-stripping is installed.

Roofing system is a built-up system and in poor condition with large soft spot areas and water ponding. Multiple leaks have been reported. Roof access hatch is beyond service life.

INTERIORS:

The building partition wall types include painted CMU with some gypsum wall board in good condition. Folding partition between pod classrooms are in fair 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 poor condition, not accessible, and beyond service life; chalkboards are mostly original in fair condition. Handrails and ornamental metals are generally in good condition. Built-in cabinets are wood in good condition. Interior identifying signage is typically directly painted on wall or door surfaces generally in fair condition.

The interior wall finishes in the building are generally painted CMU or drywall in fair condition with some areas needing re-painting.

Most ceilings in are suspended acoustical panels in fair condition and nearing the end of service life. Ceilings in toilets, stairways, and service areas are painted structural concrete in good condition. Gym ceiling is exposed steel in good condition.

Flooring is typically VCT in most areas in fair to poor condition. Approximately 40% of VCT is damaged or beyond service life. Resilient vinyl flooring in gym, tile in kitchen, and concrete in toilets are in good condition. Carpet in library has been recently replaced.

Stair construction is generally steel with concrete filled steel pan treads with cast iron non-slip nosing 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 1200 lb hydraulic elevator, original to the building. Cabin size does not conform to ADA requirement and its finishes are old and deteriorating.

MECHANICAL

Plumbing Fixtures

The original plumbing fixtures remain in service. Fixtures in the restrooms on each floor consist of both floor and wall mounted flush valve water closets, wall hung urinals and lavatories with wheel handle faucets. Several of the fixtures were out of service during the site visit. The units have been in use beyond their service life and should be replaced. All plumbing fixtures should be replaced with new, code compliant fixtures.

Drinking fountains in the corridors consist of wall hung fixtures with integral refrigerated coolers, floor mounted fixtures with integral refrigerated coolers, and recessed porcelain fixtures. Several of the drinking fountains were damaged and out of service during the site visit. The drinking fountains in the corridors should be replaced as they are beyond their service lives and several of the units are damaged.

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

The Kitchen has four (4) sinks; one (1) three-compartment stainless steel sink with lever operated faucets and integral grease trap, one (1) two-compartment stainless steel sink with lever operated faucets, and two (2) single-compartment stainless steel sinks. Chemicals are injected manually into the sanitizing basins.

Domestic Water Distribution

An 8” city water service enters the basement mechanical room on the South side of the building from Hansberry Street. The 6” meter and valves are located in the mechanical room and a reduced pressure backflow preventer is installed. Duplex skid mounted 7.5HP Armstrong domestic pressure booster pumps with expansion tank are installed on the domestic water line to ensure adequate pressure throughout the building. The pumps are rusted and in poor condition; one (1) of the pumps was leaking during the site visit. The District should replace the pressure booster pumps. 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 45 years and should be inspected and replaced by a qualified contractor.

Two (2) Paloma instant hot water heaters with associated circulating pumps, installed in 1985, supply hot water for domestic use. The heaters are located in a mechanical room on the first floor adjacent to the stairs leading down to the basement mechanical room. The heaters were operable during the site visit; however they are well beyond their service lives and should be replaced in the next 1-3 years.

Sanitary Waste

The original sanitary sewer piping is galvanized piping with threaded fittings. Repairs have been made with cast iron piping and no-hub fittings.

A sewage ejector or sump pump are not installed in this building.

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

Energy Supply

An 8” city gas service enters the basement mechanical room on the South side of the building from Hansberry Street. The gas meter is 4” and located in the basement mechanical room.

Heat Generating Systems

Low pressure steam is generated at a maximum of 15 lbs. /sq. in. by two (2) 104HP Weil-McLain model 94 cast iron sectional boilers, estimated to be original to the building. Each boiler is equipped with a Gordon-Piatt burner designed to operate on natural gas. Combustion air makeup is supplied by louvers equipped with motorized dampers. Induced draft fans with positive draft control are installed on the rear of each boiler. The gas train serving the boilers appears to have code required venting of the regulators and dual solenoid valves with venting of the chamber between. The condensate makeup has a chemical treatment system. Gas burners have an anticipated service life of 18 years; these burners have been in service an estimated 15 years and should be replaced with new units that have direct spark oil ignition and solid state flame sensing. Cast

iron sectional boilers have an anticipated service life of 35 years or more; these units have been in service an estimated 45 years. The District should replace these boilers in the next 1-3 years.

A condensate receiver with duplex 2HP pumps, located in the basement mechanical room, returns condensate to the boilers. The condensate receiver has rust damage to its base, looks to be in poor condition, and should be replaced. The pumps appear to have been recently replaced and are in good condition.

Cooling Generating Systems

Chilled water is generated by one (1) nominal 200 ton Carrier water-cooled screw chiller located in the basement mechanical room. The chiller has three (3) compressors, utilizes R-134A refrigerant, and was installed in 2009. Heat from the chiller is rejected by one (1) double cell Evapco model LSTA forced draft, counterflow cooling tower; the cooling tower is located on the roof on the South side of the building. It is assumed that the cooling tower was also replaced in 2009. Screw compressor chillers have an anticipated service life of 20 years; this unit has been in service 7 years. Galvanized metal cooling towers have an anticipated service life of 18 years; this unit has been in service 7 years. The District should provide reliable service for the next 10 to 14 years.

Distribution Systems

Building water distribution piping is black steel with threaded fittings and smaller distribution piping is copper with sweat fittings. An air separator and expansion tank are located on the dual temperature distribution piping. Several sections of the distribution piping have been damaged by rust and several locations leak. The piping is beyond its service life and will require more frequent attention from the maintenance staff to address pipe/valve failures as time passes. The District should hire a qualified contractor to examine the 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.

A steam to water shell and tube heat exchanger provides hydronic heating for the building. The tube bundle of the heat exchanger should be removed, inspected for damage and replaced if necessary, as it is beyond its anticipated service life. The heat exchanger is estimated to be the original unit installed in 1970 and has been in service more than 35 years. Shell-and-tube heat exchangers have an anticipated service life of 20 years. The heat exchanger tube bundle should be removed and inspected. If deficiencies are found, the tube bundle should be replaced.

A two pipe dual temperature distribution system supplies building heating or cooling water to the unit ventilators and air handling units (AHU). Two (2) 10HP end-suction Armstrong dual temperature pumps, P-1 and P-2, circulate building heating or cooling water. The pumps are in poor condition and are covered in rust. End suction pumps have an anticipated service life of 25 years; the age of these pumps is estimated to be 20 years. These pumps should be replaced within the next 1-3 years.

A two pipe condenser water loop serves the chiller and cooling tower. One (1) 15HP end-suction Armstrong condenser water supply pump serves the system. The pump is in poor condition and should be replaced in the next 2-4 years.

Conditioned air is provided to several spaces within the building by AHUs. Two (2) Nesbit AHUs, AC-1 and AC-2 located in separate mechanical rooms on the second floor, provide conditioned air to the IMC and the second floor. One (1) Nesbitt heating and ventilation unit, AC-3 located in a mechanical room adjacent to the Gymnasium, provides conditioned air to the Gymnasium. AC-4 could not be located but it serves the Auditorium. Two (2) Nesbit AHUs, AC-5 and AC-6 located on the first floor, provide conditioned air to the first floor. AC-5 serves the Administration area and is located in a mechanical room in that area. AC-6 serves the Cafeteria and is located in the Kitchen. All AHUs are original to the building and are beyond their service lives. The heating and ventilation unit and AHUs should be replaced with new units. Replace the heating and ventilation units serving the Gymnasium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the existing wall openings. Replace the AHU serving the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers. Replace the air handling unit serving the Auditorium by installing a fan coil air handling unit with outdoor air ducted to the unit from existing louvers.

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 beyond their service life. The existing unit ventilators should be removed and new units installed with hot and chilled water coils and integral heat exchangers to introduce sufficient outdoor air to the building.

The building is exhausted by a total of fifty (50) roof mounted exhaust fans and twenty-eight (28) gravity ventilators located on the four (4) distinct roof levels. Many of the exhaust fans and ventilators were damaged. The exhaust fans remove air from the ceiling plenum above the drop ceiling, from restrooms, and from the kitchen. Roof mounted exhaust fans have an anticipated service life of twenty (20) years; these units have been in service well beyond that and should be replaced within the next 2-4 years. The gravity ventilators, in poor condition, should also be replaced within the next 2-4 years.

Terminal & Package Units

Three (3) small kitchen hoods are installed above the cooking equipment; integral fire suppression and outdoor air make-up systems are NOT installed. An automatic gas shutoff valve is not installed with the kitchen hood equipment. The equipment is estimated to be beyond its service life but is rarely used, as only premade meals are served.

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

Controls & Instrumentation

The original pneumatic systems still provide basic control functions. Pneumatic room thermostats are intended to control the unit ventilator and AHU control valves. In reality the ventilator control valves are wide open and heating and cooling control is achieved via the boilers or chiller. Pneumatic control air is supplied from a duplex Champion compressor and Hankison air dryer located in the basement 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 building is equipped with a wet pipe sprinkler system only in limited areas on the first and second floors; the IMC on the first floor and the room above the IMC on the second floor. These two (2) spaces are located on the East side of the building. An 8" fire water line enters the basement mechanical room on the South side of the building from Hansberry Street. The fire suppression system is estimated to be the originally installed equipment is beyond its service life. Installing a sprinkler system throughout the building with quick response type heads should reduce insurance costs by providing protection for the property investment. A fire pump may be required depending on the available city water pressure.

The building is not equipped with fire standpipes.

ELECTRICAL:

Site electrical service - The primary power is at 13.2KV from the power poles. The primary power is brought into the school underground and feeding a 750 KVA dry-type transformers (13.2KV – 120V/208V, 3 phase). The secondary power feeds a 2400A, 120V/208V, 3 phase switchboard in the same line up. The PECO meter (PECO 01 017457295) is also located inside the new electrical room (basement). The switchboard is relatively old (built in 1970), and has reached the end of its useful service life.

Distribution system - The electrical distribution is accomplished by using the main 120V/240V switchboard (located in the electrical room) and feeding several 120V lighting and receptacle panels throughout the building (total of 12). These panels are old, and they have reached the end of their useful service life.

Receptacles - The receptacles in classrooms, computer rooms, libraries, and other areas are not adequate. The walls in classrooms and the computer rooms have insufficient number of receptacles (minimum of 2 on each wall is required). Only about 20% of school has been upgraded with more receptacles, however the majority of the school (80%) lacks enough receptacles.

Lighting - Interior building is illuminated by various types of fixtures. They include fluorescent lighting (mostly T-12 lamps) in majority of the areas, including; classrooms, corridors, offices, Library, cafeteria, Kitchen, etc. Surface or pendant mounted industrial fluorescent fixtures are used in mechanical and electrical rooms. There are upgraded HID lighting fixtures in the Gymnasium. About 20% of the school lighting has been upgraded, however the majority of the building (80%) lacks adequate illumination level. The majority of interior lighting fixtures (80%) are in poor condition and have reached the end of their useful service life.

Fire alarm - The present Fire Alarm system is old, not automatic/addressable, and is not in compliance with safety codes. There are some manual pulls stations throughout the building. There are also some horn/strobes in the classrooms, corridors, offices and other areas in the school. Overall, the FA system is old and has reached the end of its useful service life.

Telephone/LAN - The school telephone and data systems are working properly. A main distribution frame (MDF) along with a telephone PBX

system are providing the communication system function for the building. School is also equipped with Wi-Fi system.

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

Clock and Program system – There are clocks in each classroom (12-inch round clocks), however the clocks are not controlled properly by the master clock control.

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

Security Systems, access control, and video surveillance - The school has a video surveillance system. There are cameras installed at exit doors, corridors, exterior, and other critical areas. However school would like to have more cameras to cover critical areas. The new cameras should be controlled by a Closed Circuit Television system (CCTV).

Emergency Power System – There is an old 15 KW emergency generator in this building (installed in 1970). The emergency generator has reached the end of its useful service life.

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

Lightning Protection System - There are several lightning protection rods installed on the roof. The rods are connected to the ground by using stranded aluminum cables from the roof top all the way to the ground floor.

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

Auditorium – The auditorium general lighting uses decorative light fixtures with adequate lumens. The stage lighting has old fixtures without a proper controller. Also, the auditorium has an old sound system.

The auditorium stage lighting and sound systems are old and they have reached the end of their useful service life.

Elevators – This school has a hydraulic elevator (1200 lbs., 10HP).

GROUNDS (SITE):

Staff parking is located on the west side of the building. Pavement is in very poor condition with no striping or accessible stalls or signage.

Concrete sidewalks are in poor condition with multiple cracks and heaving areas.

Play yard area on southeast side of building has resilient rubber mat with some damaged tiles. Perimeter chain link fencing and gates is in poor condition and beyond service life. The landscaping around site consists of mature trees and shrubs that are overgrown, with grass areas in fair condition.

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

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

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.

RECOMMENDATIONS:

- Replace exterior windows and translucent panels (curtain wall type)
- Replace exterior doors and hardware
- Replace entire roofing system, including insulation
- Replace roof access hatch
- Replace interior doors and hardware
- Replace and reconfigure toilet partitions; beyond service life and not accessible
- Replace toilet accessories – broken and missing
- Paint interior walls – 20%
- Replace VCT flooring – 40% of vinyl flooring
- Replace existing elevator with an ADA compliant 2500 lb elevator serving all floors

- Replace sixteen (16) urinals, in use beyond their service life, with new low flow fixtures.
- Replace thirty (30) water closets, in use beyond their service life, with new code compliant fixtures.
- Replace three (3) lavatories, in use beyond their service life, with new code compliant fixtures.
- Replace six (6) wall hung drinking fountains and integral refrigerated coolers in the corridors, they are beyond their service lives and many of the units were out of service during the site visit.
- Replace the duplex 7.5HP domestic water booster pumps, expansion tank, and isolation valves on incoming domestic water line with a new skid mounted pressure booster system.
- Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for 45 years, and replace any damaged piping.
- Replace the two (2) existing Paloma instant hot water heaters, which are well beyond their service lives.
- Hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Hire a qualified contractor to perform a detailed examination of the rain water drainage piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Replace the two (2) existing 3,480MBH cast iron boilers, which are well beyond their service lives, including burners, and boiler stack.
- Replace the existing condensate receiver serving the boilers, which has duplex 2HP pumps that are damaged from rust, with a new condensate receiver.
- Hire a qualified contractor to examine the dual temperature distribution piping which is 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 steam to water shell and tube heat exchanger serving the building heating water system.
- Replace two (2) 10HP end-suction dual temperature pumps, P-1 and P-2, in the basement mechanical room which are damaged from rust.
- Replace one (1) 15HP end-suction condenser water pump, located in the basement mechanical room which is damaged from rust.
- Remove the existing unit ventilators and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.
- Remove the existing AC-1 which is beyond its service life and provide ventilation for the IMC by installing fan coil air handling unit in the existing mechanical room with outdoor air ducted to the unit from the existing outdoor air louvers.
- Remove the existing AC-2 which is beyond its service life and provide ventilation for the second floor by installing fan coil air handling unit in the existing mechanical room with outdoor air ducted to the unit from the existing outdoor air louvers.
- Remove the existing AC-3 which is beyond its service life and provide ventilation for the Auditorium by installing a fan coil air handling unit in the existing mechanical room with outdoor air ducted to the unit from the existing outdoor air louvers.
- Remove the existing heating and ventilation unit AC-4 which is beyond its service life and provide ventilation for the Gymnasium by installing a fan coil air handling unit in the existing mechanical room with outdoor air ducted to the unit from the existing outdoor air louvers.
- Remove the existing AC-5 which is beyond its service life and provide ventilation for the administration offices by installing a fan coil air handling unit in the existing mechanical room with outdoor air ducted to the unit from the existing outdoor air louvers.
- Remove the existing AC-6 which is beyond its service life and provide ventilation for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers.
- Replace fifty (50) roof mounted exhaust fans which are in poor condition and at the end of their service lives.
- Replace twenty-eight (28) roof mounted gravity ventilators which are in poor condition and at the end of their service lives.
- 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 throughout the building to reduce insurance costs by providing protection for the property. A fire pump may be required depending on the available city water pressure.
- Install a new electrical service to replace the old electrical distribution system built in 1970.
- Install new 120V lighting and receptacle panels throughout the building (total of 12)
- Install new lighting system for 80% of the building.
- Install new receptacles for 80% of the building
- Install new clock system
- Install additional video surveillance system for indoor and outdoor.
- Install new automated/addressable FA system.
- Install a new emergency generator to replace the old one.
- Install new exit lights and emergency lights.
- Install an upgraded auditorium stage lighting, lighting control and sound system.
- Replace pavement of existing parking including striping and accessible spaces, provide ADA signage
- Resurface play yard and sidewalk paving
- Replace chain link fence and gates – beyond service life
- Install additional pole-mounted lights for the grounds
- Install additional exterior speakers for the grounds

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 4
Status:	Accepted by SDP	Team:	Tm 4
Site ID:	S647001		

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.

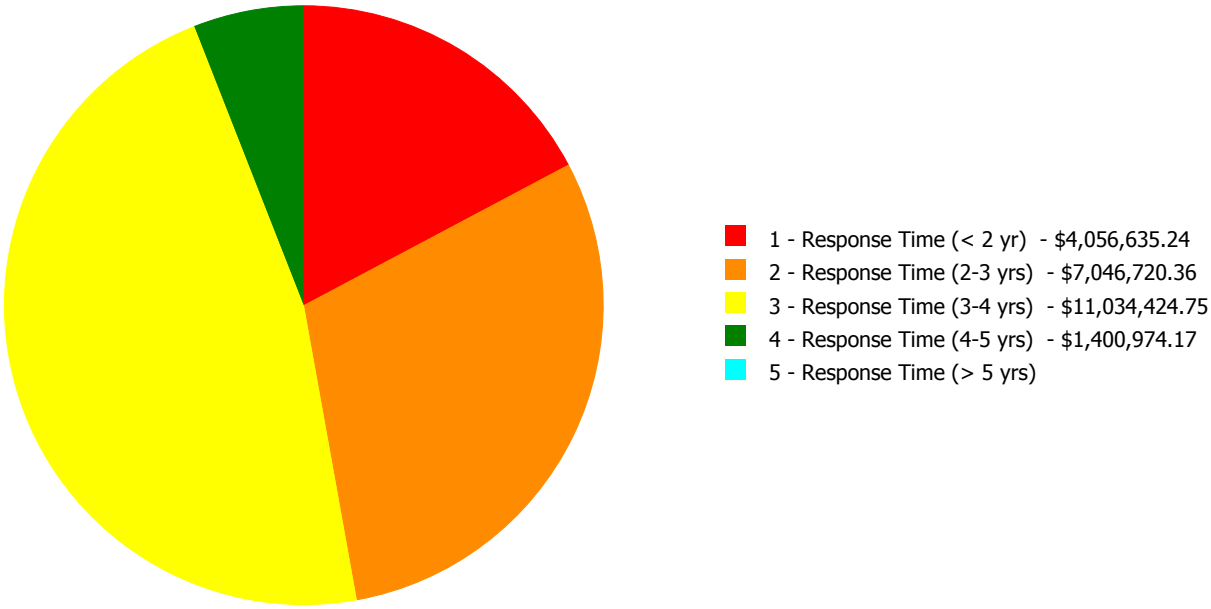
Current Investment Requirement and Condition by Uniformat Classification

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 %	0.00 %	$0.00
B20 - Exterior Enclosure	72.34 %	19.71 %	$1,133,174.43
B30 - Roofing	110.00 %	89.69 %	$2,553,173.55
C10 - Interior Construction	68.51 %	35.46 %	$887,376.42
C20 - Stairs	55.00 %	0.00 %	$0.00
C30 - Interior Finishes	48.92 %	14.51 %	$691,568.69
D10 - Conveying	105.71 %	25.50 %	$39,791.67
D20 - Plumbing	106.34 %	90.97 %	$1,894,331.40
D30 - HVAC	88.23 %	90.23 %	$10,235,027.02
D40 - Fire Protection	92.47 %	177.49 %	$1,458,812.22
D50 - Electrical	110.11 %	47.09 %	$2,822,779.08
E10 - Equipment	65.71 %	6.47 %	$105,028.21
E20 - Furnishings	37.50 %	0.00 %	$0.00
G20 - Site Improvements	107.16 %	89.11 %	$1,451,384.54
G40 - Site Electrical Utilities	106.67 %	46.63 %	$266,307.29
Totals:	**77.94 %**	**43.47 %**	**$23,538,754.52**

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)
B647001;Kelly, John	101,976	42.00	$4,056,635.24	$5,977,140.29	$10,556,760.04	$1,230,527.12	$0.00
G647001;Grounds	131,300	78.08	$0.00	$1,069,580.07	$477,664.71	$170,447.05	$0.00
Total:		**43.47**	**$4,056,635.24**	**$7,046,720.36**	**$11,034,424.75**	**$1,400,974.17**	**$0.00**

Deficiencies By Priority



Budget Estimate Total: $23,538,754.52

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):	101,976
Year Built:	1970
Last Renovation:	
Replacement Value:	$51,949,017
Repair Cost:	$21,821,062.69
Total FCI:	42.00 %
Total RSLI:	76.71 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B647001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S647001		

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 %	0.00 %	$0.00
B20 - Exterior Enclosure	72.34 %	19.71 %	$1,133,174.43
B30 - Roofing	110.00 %	89.69 %	$2,553,173.55
C10 - Interior Construction	68.51 %	35.46 %	$887,376.42
C20 - Stairs	55.00 %	0.00 %	$0.00
C30 - Interior Finishes	48.92 %	14.51 %	$691,568.69
D10 - Conveying	105.71 %	25.50 %	$39,791.67
D20 - Plumbing	106.34 %	90.97 %	$1,894,331.40
D30 - HVAC	88.23 %	90.23 %	$10,235,027.02
D40 - Fire Protection	92.47 %	177.49 %	$1,458,812.22
D50 - Electrical	110.11 %	47.09 %	$2,822,779.08
E10 - Equipment	65.71 %	6.47 %	$105,028.21
E20 - Furnishings	37.50 %	0.00 %	$0.00
Totals:	**76.71 %**	**42.00 %**	**$21,821,062.69**

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.	101,976	100	1970	2070		55.00 %	0.00 %	55			$1,876,358
A1030	Slab on Grade	$7.73	S.F.	101,976	100	1970	2070		55.00 %	0.00 %	55			$788,274
A2010	Basement Excavation	$6.55	S.F.	101,976	100	1970	2070		55.00 %	0.00 %	55			$667,943
A2020	Basement Walls	$12.70	S.F.	101,976	100	1970	2070		55.00 %	0.00 %	55			$1,295,095
B1010	Floor Construction	$75.10	S.F.	101,976	100	1970	2070		55.00 %	0.00 %	55			$7,658,398
B1020	Roof Construction	$13.88	S.F.	101,976	100	1970	2070		55.00 %	0.00 %	55			$1,415,427
B2010	Exterior Walls	$36.91	S.F.	101,976	100	1970	2070		55.00 %	0.00 %	55			$3,763,934
B2020	Exterior Windows	$18.01	S.F.	101,976	40	1970	2010	2057	105.00 %	46.71 %	42		$857,907.69	$1,836,588
B2030	Exterior Doors	$1.45	S.F.	101,976	25	1970	1995	2042	108.00 %	186.16 %	27		$275,266.74	$147,865
B3010105	Built-Up	$37.76	S.F.	75,228	20	1990	2010	2037	110.00 %	89.73 %	22		$2,548,875.93	$2,840,609
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.	101,976	20	1990	2010	2037	110.00 %	70.23 %	22		$4,297.62	$6,119
C1010	Partitions	$17.91	S.F.	101,976	100	1970	2070		55.00 %	0.00 %	55			$1,826,390
C1020	Interior Doors	$3.51	S.F.	101,976	40	1970	2010	2057	105.00 %	146.61 %	42		$524,764.58	$357,936
C1030	Fittings	$3.12	S.F.	101,976	40	1970	2010	2057	105.00 %	113.97 %	42		$362,611.84	$318,165
C2010	Stair Construction	$1.41	S.F.	101,976	100	1970	2070		55.00 %	0.00 %	55			$143,786

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	$15.55	S.F.	101,976	10	2009	2019	2025	100.00 %	17.09 %	10		$270,955.08	$1,585,727
C3010231	Vinyl Wall Covering	$0.00	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$0.00	S.F.		30				0.00 %	0.00 %				$0
C3020411	Carpet	$7.30	S.F.	1,020	10	2013	2023		80.00 %	0.00 %	8			$7,446
C3020412	Terrazzo & Tile	$75.52	S.F.	2,040	50	1970	2020	2030	30.00 %	0.00 %	15			$154,061
C3020413	Vinyl Flooring	$9.68	S.F.	87,699	20	1991	2011	2021	30.00 %	49.55 %	6		$420,613.61	$848,926
C3020414	Wood Flooring	$22.27	S.F.	1,020	25	2000	2025		40.00 %	0.00 %	10			$22,715
C3020415	Concrete Floor Finishes	$0.97	S.F.	10,198	50	1970	2020	2030	30.00 %	0.00 %	15			$9,892
C3030	Ceiling Finishes	$20.97	S.F.	101,976	25	1995	2020		20.00 %	0.00 %	5			$2,138,437
D1010	Elevators and Lifts	$1.53	S.F.	101,976	35	1970	2005	2052	105.71 %	25.50 %	37		$39,791.67	$156,023
D2010	Plumbing Fixtures	$13.52	S.F.	101,976	35	1970	2005	2052	105.71 %	28.23 %	37		$389,172.08	$1,378,716
D2020	Domestic Water Distribution	$1.68	S.F.	101,976	25	1970	1995	2042	108.00 %	361.84 %	27		$619,901.92	$171,320
D2030	Sanitary Waste	$2.90	S.F.	101,976	25	1970	1995	2042	108.00 %	146.43 %	27		$433,051.96	$295,730
D2040	Rain Water Drainage	$2.32	S.F.	101,976	30	1970	2000	2047	106.67 %	191.14 %	32		$452,205.44	$236,584
D3020	Heat Generating Systems	$18.67	S.F.	101,976	35	1970	2005	2052	105.71 %	44.77 %	37		$852,369.73	$1,903,892
D3030	Cooling Generating Systems	$24.48	S.F.	101,976	20	2009	2029		70.00 %	3.73 %	14		$93,046.00	$2,496,372
D3040	Distribution Systems	$42.99	S.F.	101,976	25	1970	1995	2042	108.00 %	162.00 %	27		$7,102,012.23	$4,383,948
D3050	Terminal & Package Units	$11.60	S.F.	101,976	20				0.00 %	0.00 %				$1,182,922
D3060	Controls & Instrumentation	$13.50	S.F.	101,976	20	1970	1990	2037	110.00 %	158.90 %	22		$2,187,599.06	$1,376,676
D4010	Sprinklers	$7.05	S.F.	101,976	35	1970	2005	2052	105.71 %	202.91 %	37		$1,458,812.22	$718,931
D4020	Standpipes	$1.01	S.F.	101,976	35				0.00 %	0.00 %				$102,996
D5010	Electrical Service/Distribution	$9.70	S.F.	101,976	30	1970	2000	2047	106.67 %	79.28 %	32		$784,223.43	$989,167
D5020	Lighting and Branch Wiring	$34.68	S.F.	101,976	20	1970	1990	2037	110.00 %	31.95 %	22		$1,129,763.79	$3,536,528
D5030	Communications and Security	$12.99	S.F.	101,976	15	1970	1985	2032	113.33 %	47.85 %	17		$633,866.82	$1,324,668
D5090	Other Electrical Systems	$1.41	S.F.	101,976	30	1970	2000	2047	106.67 %	191.20 %	32		$274,925.04	$143,786
E1020	Institutional Equipment	$4.82	S.F.	101,976	35	2003	2038		65.71 %	21.37 %	23		$105,028.21	$491,524
E1090	Other Equipment	$11.10	S.F.	101,976	35	2003	2038		65.71 %	0.00 %	23			$1,131,934
E2010	Fixed Furnishings	$2.13	S.F.	101,976	40	1970	2010	2030	37.50 %	0.00 %	15			$217,209
								Total	**76.71 %**	**42.00 %**			**$21,821,062.69**	**$51,949,017**

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: 100% - Paint & Covering

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

Note: 1% - Carpet
2% - Terrazzo & Tile (quarry tile)
86% - Vinyl Flooring
1% - Wood Flooring
10% - Concrete Floor Finishes

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:	**$21,821,063**	**$0**	**$0**	**$0**	**$0**	**$2,726,937**	**$1,115,029**	**$0**	**$10,376**	**$0**	**$2,377,772**	**$28,051,177**
*** A - Substructure**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A10 - Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1010 - Standard Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1030 - Slab on Grade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A20 - Basement Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2010 - Basement Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2020 - Basement Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2020 - Exterior Windows	$857,908	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$857,908**
B2030 - Exterior Doors	$275,267	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$275,267**
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	$2,548,876	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,548,876**
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	$4,298	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,298**
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**

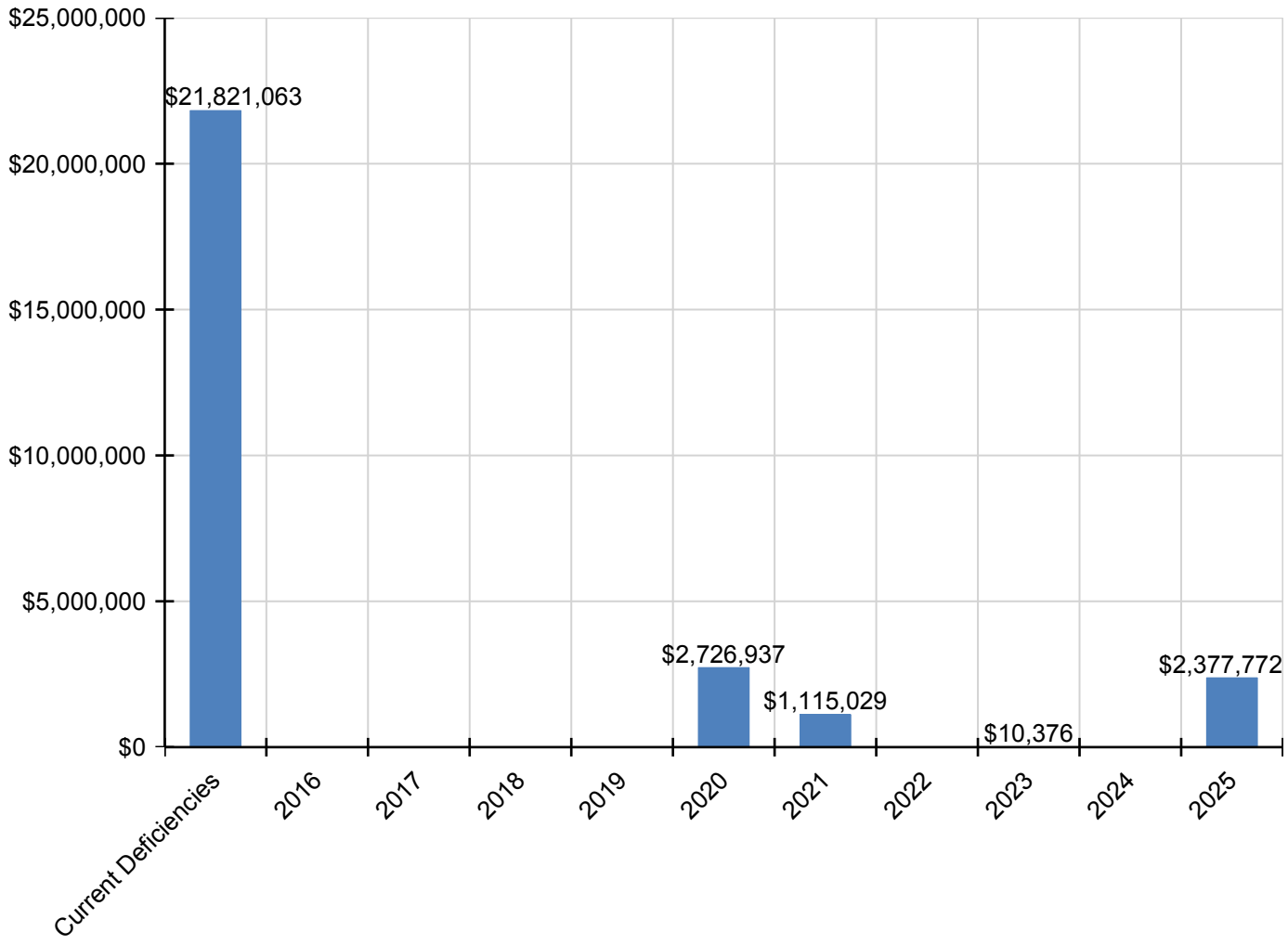
C1020 - Interior Doors	$524,765	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$524,765**
C1030 - Fittings	$362,612	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$362,612**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$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	$270,955	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,344,192	**$2,615,147**
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	$0	$10,376	$0	$0	**$10,376**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$420,614	$0	$0	$0	$0	$0	$1,115,029	$0	$0	$0	$0	**$1,535,642**
C3020414 - Wood Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$33,580	**$33,580**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$0	$0	$0	$0	$0	$2,726,937	$0	$0	$0	$0	$0	**$2,726,937**
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	$39,792	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$39,792**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$389,172	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$389,172**
D2020 - Domestic Water Distribution	$619,902	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$619,902**
D2030 - Sanitary Waste	$433,052	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$433,052**
D2040 - Rain Water Drainage	$452,205	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$452,205**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$852,370	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$852,370**
D3030 - Cooling Generating Systems	$93,046	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$93,046**
D3040 - Distribution Systems	$7,102,012	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$7,102,012**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$2,187,599	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,187,599**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$1,458,812	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,458,812**
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	$784,223	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$784,223**
D5020 - Lighting and Branch Wiring	$1,129,764	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,129,764**
D5030 - Communications and Security	$633,867	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$633,867**
D5090 - Other Electrical Systems	$274,925	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$274,925**
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	$105,028	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$105,028**
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

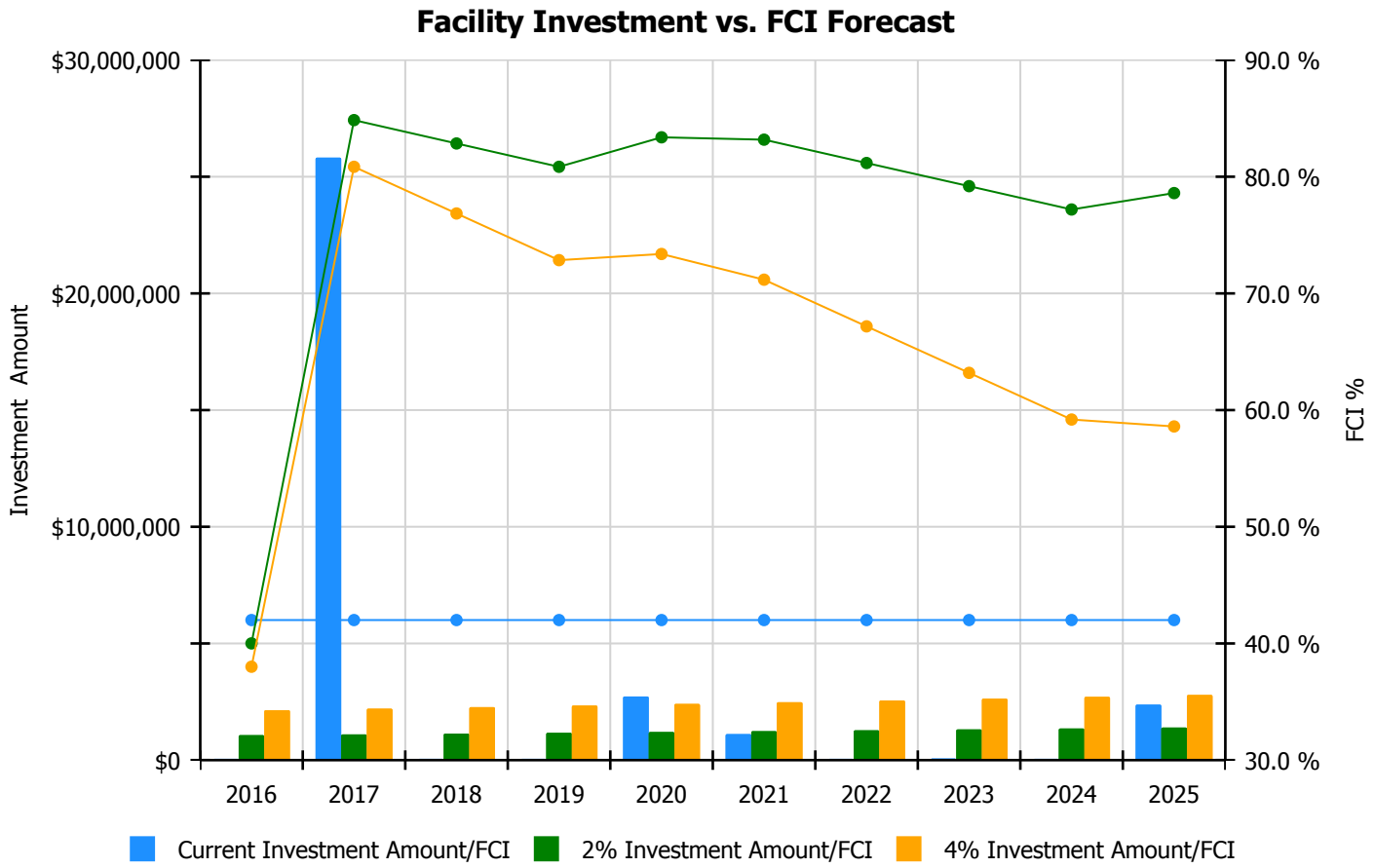
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

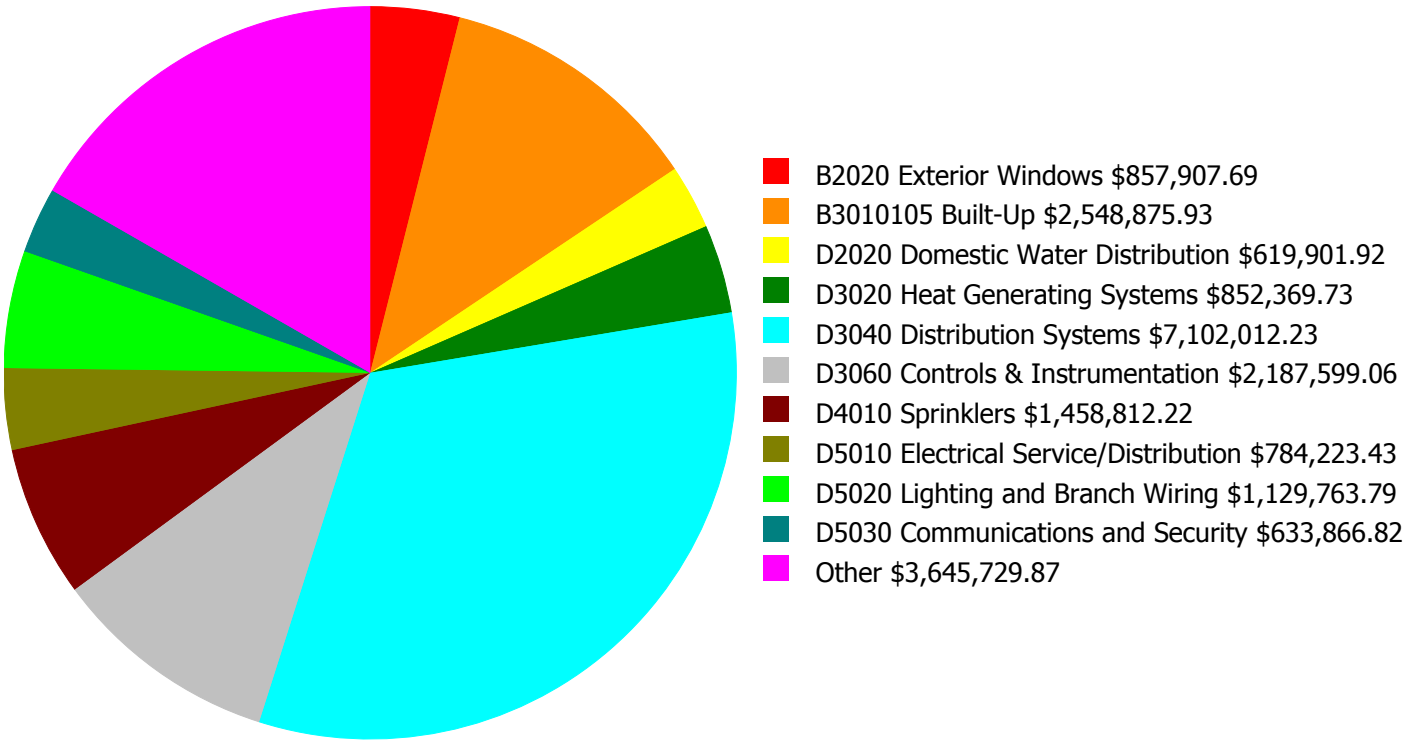
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 42%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$1,070,150.00	40.00 %	$2,140,300.00	38.00 %
2017	$25,817,614	$1,102,254.00	84.85 %	$2,204,508.00	80.85 %
2018	$0	$1,135,322.00	82.85 %	$2,270,644.00	76.85 %
2019	$0	$1,169,382.00	80.85 %	$2,338,763.00	72.85 %
2020	$2,726,937	$1,204,463.00	83.38 %	$2,408,926.00	73.38 %
2021	$1,115,029	$1,240,597.00	83.18 %	$2,481,194.00	71.18 %
2022	$0	$1,277,815.00	81.18 %	$2,555,630.00	67.18 %
2023	$10,376	$1,316,149.00	79.19 %	$2,632,298.00	63.19 %
2024	$0	$1,355,634.00	77.19 %	$2,711,267.00	59.19 %
2025	$2,377,772	$1,396,303.00	78.60 %	$2,792,605.00	58.60 %
Total:	**$32,047,728**	**$12,268,069.00**		**$24,536,135.00**	

Deficiency Summary by System

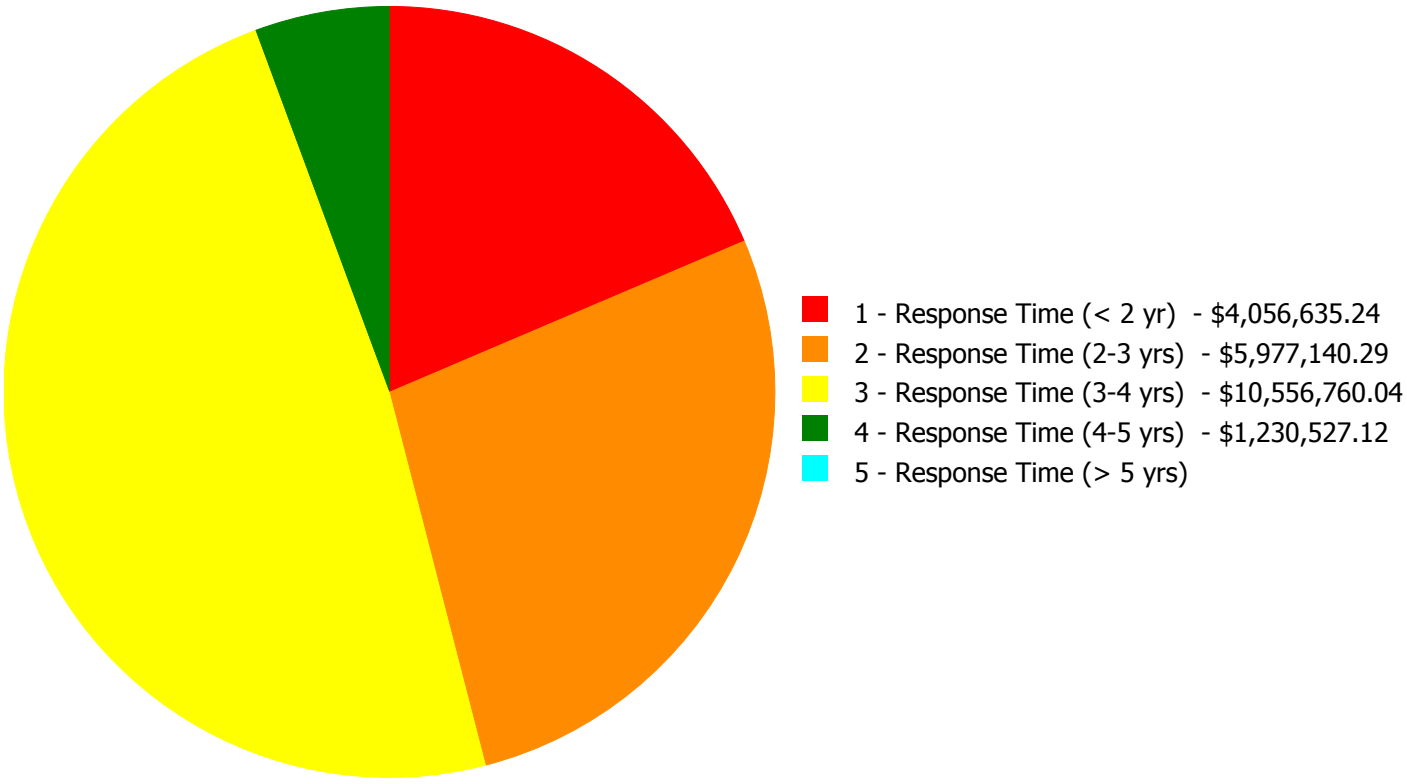
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $21,821,062.69

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: $21,821,062.69

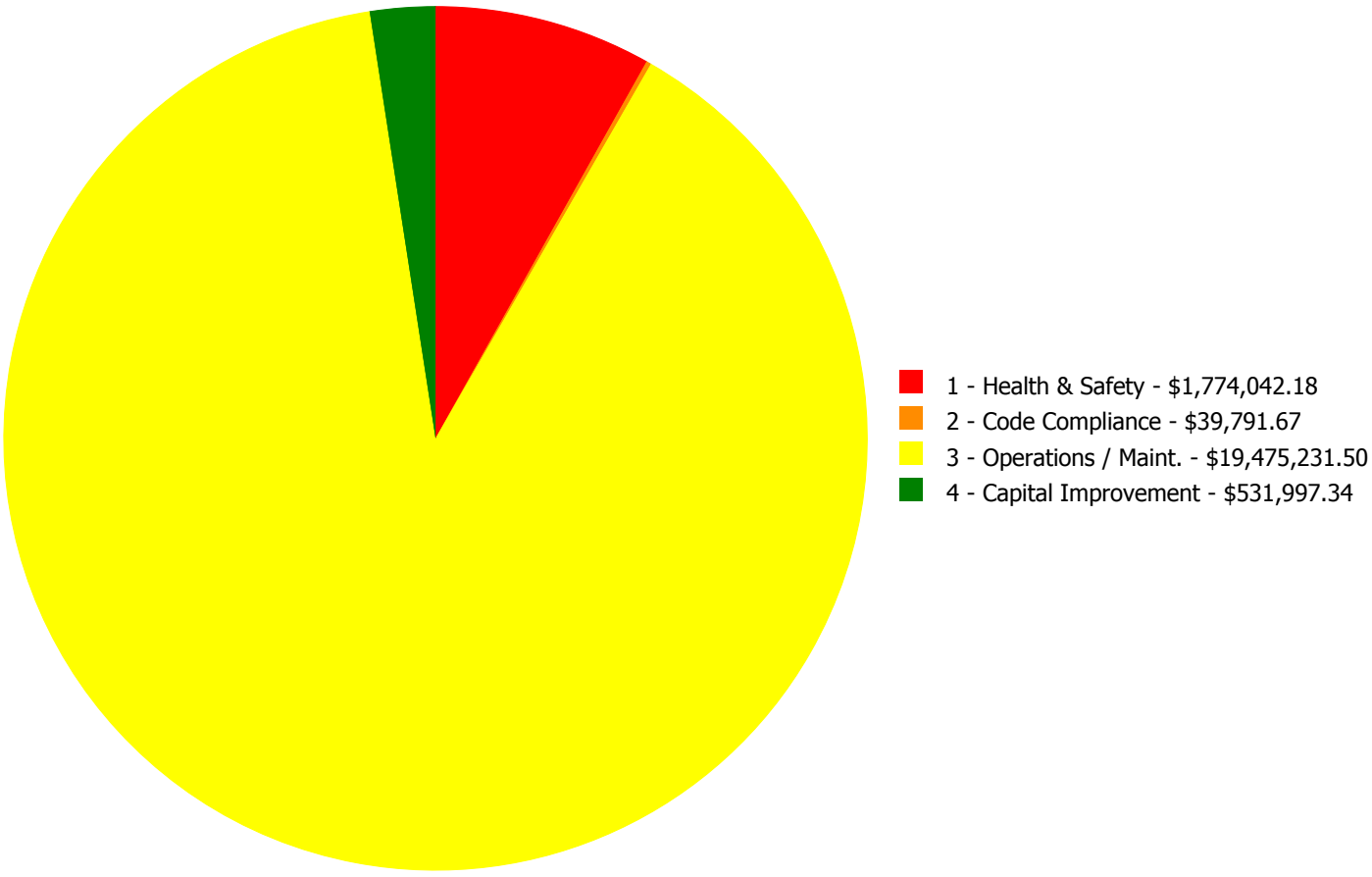
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
B2020	Exterior Windows	$0.00	$0.00	$857,907.69	$0.00	$0.00	$857,907.69
B2030	Exterior Doors	$0.00	$0.00	$275,266.74	$0.00	$0.00	$275,266.74
B3010105	Built-Up	$2,548,875.93	$0.00	$0.00	$0.00	$0.00	$2,548,875.93
B3020	Roof Openings	$0.00	$4,297.62	$0.00	$0.00	$0.00	$4,297.62
C1020	Interior Doors	$0.00	$524,764.58	$0.00	$0.00	$0.00	$524,764.58
C1030	Fittings	$0.00	$157,299.46	$205,312.38	$0.00	$0.00	$362,611.84
C3010230	Paint & Covering	$0.00	$0.00	$270,955.08	$0.00	$0.00	$270,955.08
C3020413	Vinyl Flooring	$0.00	$0.00	$420,613.61	$0.00	$0.00	$420,613.61
D1010	Elevators and Lifts	$0.00	$39,791.67	$0.00	$0.00	$0.00	$39,791.67
D2010	Plumbing Fixtures	$0.00	$283,472.69	$105,699.39	$0.00	$0.00	$389,172.08
D2020	Domestic Water Distribution	$48,947.09	$54,205.69	$0.00	$516,749.14	$0.00	$619,901.92
D2030	Sanitary Waste	$0.00	$0.00	$433,051.96	$0.00	$0.00	$433,051.96
D2040	Rain Water Drainage	$0.00	$0.00	$452,205.44	$0.00	$0.00	$452,205.44
D3020	Heat Generating Systems	$0.00	$852,369.73	$0.00	$0.00	$0.00	$852,369.73
D3030	Cooling Generating Systems	$0.00	$0.00	$93,046.00	$0.00	$0.00	$93,046.00
D3040	Distribution Systems	$0.00	$3,566,828.33	$3,535,183.90	$0.00	$0.00	$7,102,012.23
D3060	Controls & Instrumentation	$0.00	$0.00	$2,187,599.06	$0.00	$0.00	$2,187,599.06
D4010	Sprinklers	$1,458,812.22	$0.00	$0.00	$0.00	$0.00	$1,458,812.22
D5010	Electrical Service/Distribution	$0.00	$494,110.52	$0.00	$290,112.91	$0.00	$784,223.43
D5020	Lighting and Branch Wiring	$0.00	$0.00	$1,129,763.79	$0.00	$0.00	$1,129,763.79
D5030	Communications and Security	$0.00	$0.00	$315,229.96	$318,636.86	$0.00	$633,866.82
D5090	Other Electrical Systems	$0.00	$0.00	$274,925.04	$0.00	$0.00	$274,925.04
E1020	Institutional Equipment	$0.00	$0.00	$0.00	$105,028.21	$0.00	$105,028.21
	Total:	$4,056,635.24	$5,977,140.29	$10,556,760.04	$1,230,527.12	$0.00	$21,821,062.69

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: $21,821,062.69

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: B3010105 - Built-Up

Location: Roof
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Remove and Replace Built Up Roof
Qty: 75,228.00
Unit of Measure: S.F.
Estimate: $2,548,875.93
Assessor Name: Craig Anding
Date Created: 02/24/2016

Notes: Replace entire roofing system, including insulation

System: D2020 - Domestic Water Distribution

Location: Mechanical room
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Replace instantaneous water heater
Qty: 2.00
Unit of Measure: Ea.
Estimate: $48,947.09
Assessor Name: Craig Anding
Date Created: 02/11/2016

Notes: Replace the two (2) existing Paloma instant hot water heaters, which are well beyond their service lives.

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: 101,976.00

Unit of Measure: S.F.

Estimate: $1,458,812.22

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Install a fire protection sprinkler system with quick response type heads throughout the building 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: B3020 - Roof Openings

Location: roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace roof hatch - pick the closest size

Qty: 1.00

Unit of Measure: Ea.

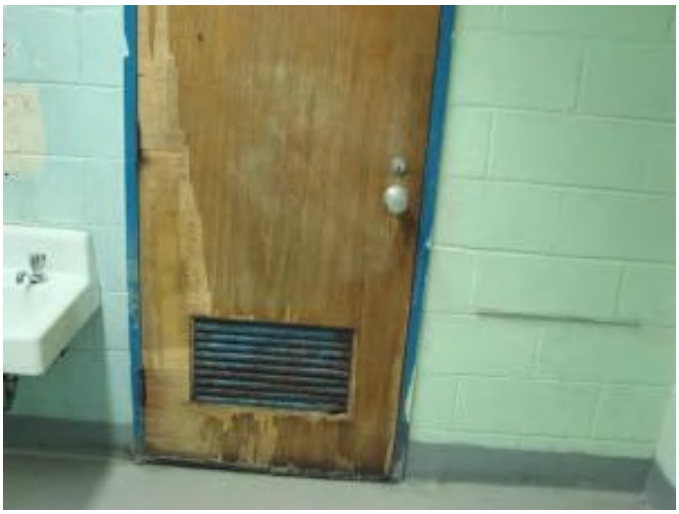
Estimate: $4,297.62

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Replace roof access hatch

System: C1020 - Interior Doors



Location: Throughout

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 110.00

Unit of Measure: Ea.

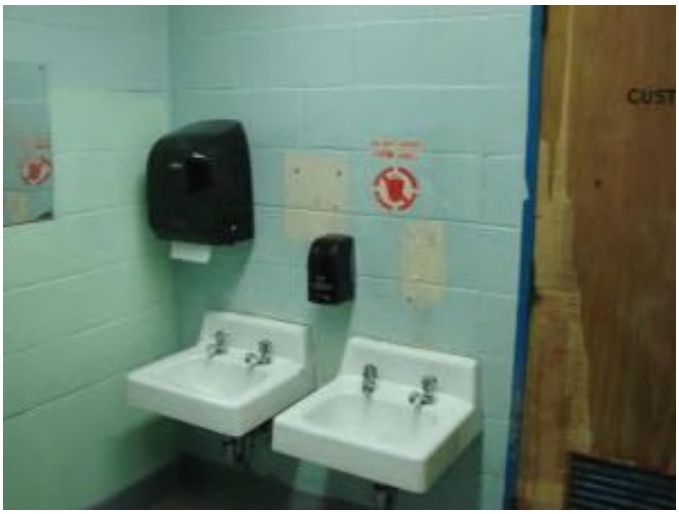
Estimate: $524,764.58

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Replace interior doors and hardware

System: C1030 - Fittings



Location: Toilets

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace toilet accessories - select accessories and quantity

Qty: 80.00

Unit of Measure: Ea.

Estimate: $157,299.46

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Replace toilet accessories – broken and missing

System: D1010 - Elevators and Lifts

Location: Elevator

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Modernize or upgrade the elevator cab or to comply with ADA - exact scope of work estimate not available - total cost is sufficient

Qty: 1.00

Unit of Measure: Ea.

Estimate: $39,791.67

Assessor Name: Craig Anding

Date Created: 02/24/2016

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

System: D2010 - Plumbing Fixtures

Location: Restrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 30.00

Unit of Measure: Ea.

Estimate: $224,175.82

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace thirty (30) water closets, in use beyond their service life, with new code compliant fixtures.

System: D2010 - Plumbing Fixtures

Location: Restrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace wall hung urinals

Qty: 16.00

Unit of Measure: Ea.

Estimate: $59,296.87

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace sixteen (16) urinals, in use beyond their service life, with new low flow fixtures.

System: D2020 - Domestic Water Distribution

Location: Basement mechanical room

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $54,205.69

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace the duplex 7.5HP domestic water booster pumps, expansion tank, and isolation valves on incoming domestic water line with a new skid mounted pressure booster system.

System: D3020 - Heat Generating Systems

Location: Basement mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace boiler, cast iron sectional (100 HP)

Qty: 2.00

Unit of Measure: Ea.

Estimate: $655,796.89

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace the two (2) existing 3,480MBH cast iron boilers, which are well beyond their service lives, including burners, and boiler stack.

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 (5" size, 15 HP, to 1000 GPM)

Qty: 1.50

Unit of Measure: Ea.

Estimate: $196,572.84

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace two (2) 10HP end-suction dual temperature pumps, P-1 and P-2, in the basement mechanical room which are damaged from rust.

System: D3040 - Distribution Systems

Location: Classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 40.00

Unit of Measure: Ea.

Estimate: $1,995,146.90

Assessor Name: Craig Anding

Date Created: 02/11/2016

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

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace chilled water distribution piping (75KSF)

Qty: 101,976.00

Unit of Measure: S.F.

Estimate: $1,370,925.52

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Hire a qualified contractor to examine the dual temperature distribution piping which is 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: D3040 - Distribution Systems

Location: Basement mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace shell and tube hydronic heat exchanger (240 gpm)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $200,755.91

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace the steam to water shell and tube heat exchanger serving the building heating water system.

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: 02/24/2016

Notes: Install new 120V lighting and receptacle panels throughout the building (total of 12)

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

System: B2020 - Exterior Windows

Location: Throughout

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace aluminum windows - pick the appropriate size and style and insert the number of units

Qty: 156.00

Unit of Measure: Ea.

Estimate: $857,907.69

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Replace exterior windows and translucent panels (curtain wall type)

System: B2030 - Exterior Doors

Location: Throughout

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 34.00

Unit of Measure: Ea.

Estimate: $275,266.74

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Replace exterior doors and hardware

System: C1030 - Fittings

Location: Toilets

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace toilet partitions

Qty: 80.00

Unit of Measure: Ea.

Estimate: $205,312.38

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Replace and reconfigure toilet partitions; beyond service life and not accessible

System: C3010230 - Paint & Covering

Location: Various

Distress: Appearance

Category: 3 - Operations / Maint.

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

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

Qty: 40,000.00

Unit of Measure: S.F.

Estimate: $270,955.08

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Paint interior walls – 20%

System: C3020413 - Vinyl Flooring

Location: Various

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace VCT

Qty: 35,000.00

Unit of Measure: S.F.

Estimate: $420,613.61

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Replace VCT flooring – 40% of vinyl flooring

System: D2010 - Plumbing Fixtures

Location: Corridors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace water fountains to meet ADA - includes high and low fountains and new recessed alcove

Qty: 6.00

Unit of Measure: Ea.

Estimate: $94,157.37

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace six (6) wall hung drinking fountains and integral refrigerated coolers in the corridors, they are beyond their service lives and many of the units were out of service during the site visit.

System: D2010 - Plumbing Fixtures

Location: Restrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace lavatory - quantify accessible if required

Qty: 3.00

Unit of Measure: Ea.

Estimate: $11,542.02

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace three (3) lavatories, in use beyond their service life, with new code compliant fixtures.

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: 101,976.00

Unit of Measure: S.F.

Estimate: $433,051.96

Assessor Name: Craig Anding

Date Created: 02/11/2016

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

System: 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: 101,976.00

Unit of Measure: S.F.

Estimate: $452,205.44

Assessor Name: Craig Anding

Date Created: 02/11/2016

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

System: D3030 - Cooling Generating Systems

Location: Basement mechanical room

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace inline CHW pump (15 HP)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $93,046.00

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace one (1) 15HP end-suction condenser water pump, located in the basement mechanical room which is damaged from rust.

System: D3040 - Distribution Systems

Location: Roof

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace utility set exhaust fan (5 HP)

Qty: 50.00

Unit of Measure: Ea.

Estimate: $1,072,643.81

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace fifty (50) roof mounted exhaust fans which are in poor condition and at the end of their service lives.

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: 446.00

Unit of Measure: Seat

Estimate: $742,798.08

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Remove the existing AC-3 which is beyond its service life and provide ventilation for the Auditorium by installing a fan coil air handling unit in the existing mechanical room with outdoor air ducted to the unit from the existing outdoor air louvers.

System: D3040 - Distribution Systems

Location: 2nd floor mechanical rooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for IMC (850 students).

Qty: 795.00

Unit of Measure: Student

Estimate: $416,835.85

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Remove the existing AC-1 which is beyond its service life and provide ventilation for the IMC by installing fan coil air handling unit in the existing mechanical room with outdoor air ducted to the unit from the existing outdoor air louvers.

System: D3040 - Distribution Systems

Location: 2nd floor mechanical rooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for IMC (850 students).

Qty: 795.00

Unit of Measure: Student

Estimate: $416,835.85

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Remove the existing AC-2 which is beyond its service life and provide ventilation for the second floor by installing fan coil air handling unit in the existing mechanical room with outdoor air ducted to the unit from the existing outdoor air louvers.

System: D3040 - Distribution Systems

Location: Administration offices

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Admin (2000 students).

Qty: 795.00

Unit of Measure: Student

Estimate: $332,040.77

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Remove the existing AC-5 which is beyond its service life and provide ventilation for the administration offices by installing a fan coil air handling unit in the existing mechanical room with outdoor air ducted to the unit from the existing outdoor air louvers.

System: D3040 - Distribution Systems

Location: Gymnasium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Gymnasium (single station)

Qty: 6,000.00

Unit of Measure: S.F.

Estimate: $227,475.37

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Remove the existing heating and ventilation unit AC-4 which is beyond its service life and provide ventilation for the Gymnasium by installing a fan coil air handling unit in the existing mechanical room with outdoor air ducted to the unit from the existing outdoor air louvers.

System: D3040 - Distribution Systems

Location: Cafeteria

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Cafeteria (850)

Qty: 795.00

Unit of Measure: Student

Estimate: $216,399.11

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Remove the existing AC-6 which is beyond its service life and provide ventilation for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers.

System: D3040 - Distribution Systems

Location: Roof

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 28.00

Unit of Measure: Ea.

Estimate: $62,363.96

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace twenty-eight (28) roof mounted gravity ventilators which are in poor condition and at the end of their service lives.

System: D3040 - Distribution Systems

Location: Basement mechanical room

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace Condensate Receiver Pump Set

Qty: 1.00

Unit of Measure: Ea.

Estimate: $47,791.10

Assessor Name: Craig Anding

Date Created: 02/11/2016

Notes: Replace the existing condensate receiver serving the boilers, which has duplex 2HP pumps that are damaged from rust, with a new condensate receiver.

System: D3060 - Controls & Instrumentation

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 101,976.00

Unit of Measure: S.F.

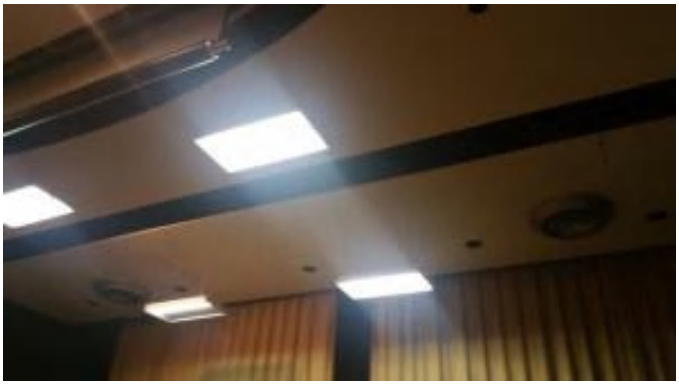
Estimate: $2,187,599.06

Assessor Name: Craig Anding

Date Created: 02/11/2016

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

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: $677,814.12

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Install new lighting system for 80% of the building.
101,976 SF x 80% = 81,560 SF

System: D5020 - Lighting and Branch Wiring

Location: electrical room

Distress: Inadequate

Category: 4 - Capital Improvement

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

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

Qty: 0.00

Unit of Measure: S.F.

Estimate: $451,949.67

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Install new receptacles for 80% of the building
101,976 SF x 80% = 81,580 SF

System: D5030 - Communications and Security

Location: throughout the building

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Replace fire alarm system

Qty: 1.00

Unit of Measure: S.F.

Estimate: $315,229.96

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Install new automated/addressable FA system.

System: D5090 - Other Electrical Systems

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Emergency/Exit Lighting

Qty: 1.00

Unit of Measure: Ea.

Estimate: $137,955.52

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Install new exit lights and 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: $136,969.52

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Install a new emergency generator to replace the old one.

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

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: 101,976.00
Unit of Measure: S.F.
Estimate: $516,749.14
Assessor Name: Craig Anding
Date Created: 02/11/2016

Notes: Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for 45 years, and replace any damaged piping.

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: $290,112.91
Assessor Name: Craig Anding
Date Created: 02/24/2016

Notes: Install a new electrical service to replace the old electrical distribution system built in 1970.

System: D5030 - Communications and Security

Location: throughout the building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace clock/program system
Qty: 0.00
Unit of Measure: Ea.
Estimate: $238,589.19
Assessor Name: Craig Anding
Date Created: 02/24/2016

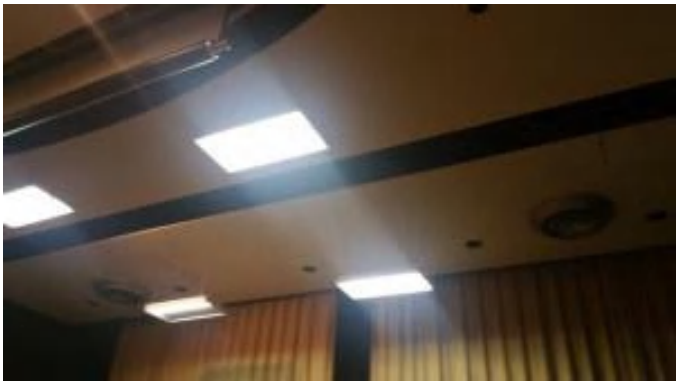
Notes: Install new clock system

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: $80,047.67
Assessor Name: Craig Anding
Date Created: 02/24/2016

Notes: Install additional video surveillance system for indoor and outdoor.

System: E1020 - Institutional Equipment



Location: Auditorium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Add/Replace Stage Theatrical Lighting System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $105,028.21

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Install an upgraded auditorium stage lighting, lighting control and sound system.

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, 1500 lb, 2 floors, 100 FPM	1.00	Ea.	inside the building					30	1970	2047	$68,985.00	$75,883.50
D2020 Domestic Water Distribution	Pump, pressure booster system, 7-1/2 HP pump, includes diaphragm tank, control and pressure switch	2.00	Ea.	Basement Mechanical Room	Armstrong				25	2002	2027	$12,198.00	$26,835.60
D3020 Heat Generating Systems	Boiler, gas fired, natural or propane, cast iron, steam, gross output, 3570 MBH, includes standard controls and insulated jacket, packaged	2.00	Ea.	Basement Mechanical Room	Weil-McLain	1394SF			35	1970	2005	$61,435.00	$135,157.00
D3020 Heat Generating Systems	Boiler, gas fired, natural or propane, cast iron, steam, gross output, 3570 MBH, includes standard controls and insulated jacket, packaged	2.00	Ea.	Basement Mechanical Room	Weil-McLain	1394SF			35	1970	2005	$61,435.00	$135,157.00
D3030 Cooling Generating Systems	Cooling tower, packaged unit, galvanized steel, blow through, centrifugal type, 200 ton, includes standard controls, excludes pumps and piping	1.00	Ea.	Roof	Evapco	LSTA 5-187	T020772		20	2009	2029	$34,884.30	$38,372.73
D3030 Cooling Generating Systems	Water chiller, screw liquid chiller, air cooled, insulated evaporator, 210 ton, includes standard controls	1.00	Ea.	Basement Mechanical Room	Carrier	30HXC206RY	3103Q02962		20	2009	2029	$179,025.00	$196,927.50
D3040 Distribution Systems	Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 10 H.P., to 600 GPM, 5" size	2.00	Ea.	Basement Mechanical Room	Armstrong				25	1995	2020	$19,608.00	$43,137.60
D3040 Distribution Systems	Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 10 H.P., to 600 GPM, 5" size	2.00	Ea.	Basement Mechanical Room	Armstrong				25	1995	2020	$19,608.00	$43,137.60
D3040 Distribution Systems	Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 15 H.P., to 1000 GPM, 5" size	1.00	Ea.	Basement Mechanical Room	Armstrong	6E-13-4020	79984		25	1995	2020	$21,432.00	$23,575.20
D5010 Electrical Service/Distribution	Load interrupter switch, 2 position, 300 kVA & below, 13.8 kV, 600 amp w/CLF fuses, NEMA 1	1.00	Ea.	electrical room					30	1970	2047	$42,600.60	$46,860.66
D5010 Electrical Service/Distribution	Panelboards, 3 pole 4 wire, main circuit breaker, 120/208 V, 400 amp	8.00	Ea.	throughout the building					30	1970	2047	$4,626.45	$40,712.76
D5010 Electrical Service/Distribution	Switchboards, distribution section, aluminum bus bars, 4 W, 120/208 or 277/480 V, 4000 amp, excl breakers	1.00	Ea.	electrical room					30	1970	2047	$14,655.60	$16,121.16
D5010 Electrical Service/Distribution	Switchboards, pressure switch, 4 wire, 120/208 V, 3000 amp, incl CT compartment, excl CT's or PT's	1.00	Ea.	electrical room					30	1970	2047	$54,523.80	$59,976.18
D5090 Other Electrical Systems	Generator set, diesel, 3 phase 4 wire, 277/480 V, 125 kW, incl battery, charger, muffler, & day tank, excl conduit, wiring, & concrete	1.00	Ea.	electrical room					30	1970	2047	$50,797.80	$55,877.58
												Total:	**$937,732.07**

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):	131,300
Year Built:	1970
Last Renovation:	
Replacement Value:	$2,199,926
Repair Cost:	$1,717,691.83
Total FCI:	78.08 %
Total RSLI:	107.03 %

Description:

Attributes:

General Attributes:

Bldg ID:	S647001	Site ID:	S647001

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	107.16 %	89.11 %	$1,451,384.54
G40 - Site Electrical Utilities	106.67 %	46.63 %	$266,307.29
Totals:	**107.03 %**	**78.08 %**	**$1,717,691.83**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2010	Roadways	$11.52	S.F.		30	1970	2000	2047	106.67 %	0.00 %	32			$0
G2020	Parking Lots	$7.65	S.F.	17,900	30	1970	2000	2047	106.67 %	123.92 %	32		$169,690.87	$136,935
G2030	Pedestrian Paving	$11.52	S.F.	63,400	40	1970	2010	2057	105.00 %	29.04 %	42		$212,113.60	$730,368
G2040	Site Development	$4.36	S.F.	131,300	25	1970	1995	2042	108.00 %	186.84 %	27		$1,069,580.07	$572,468
G2050	Landscaping & Irrigation	$3.78	S.F.	50,000	15	1970	1985	2032	113.33 %	0.00 %	17			$189,000
G4020	Site Lighting	$3.58	S.F.	131,300	30	1970	2000	2047	106.67 %	20.39 %	32		$95,860.24	$470,054
G4030	Site Communications & Security	$0.77	S.F.	131,300	30	1970	2000	2047	106.67 %	168.59 %	32		$170,447.05	$101,101
								Total	**107.03 %**	**78.08 %**			**$1,717,691.83**	**$2,199,926**

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.

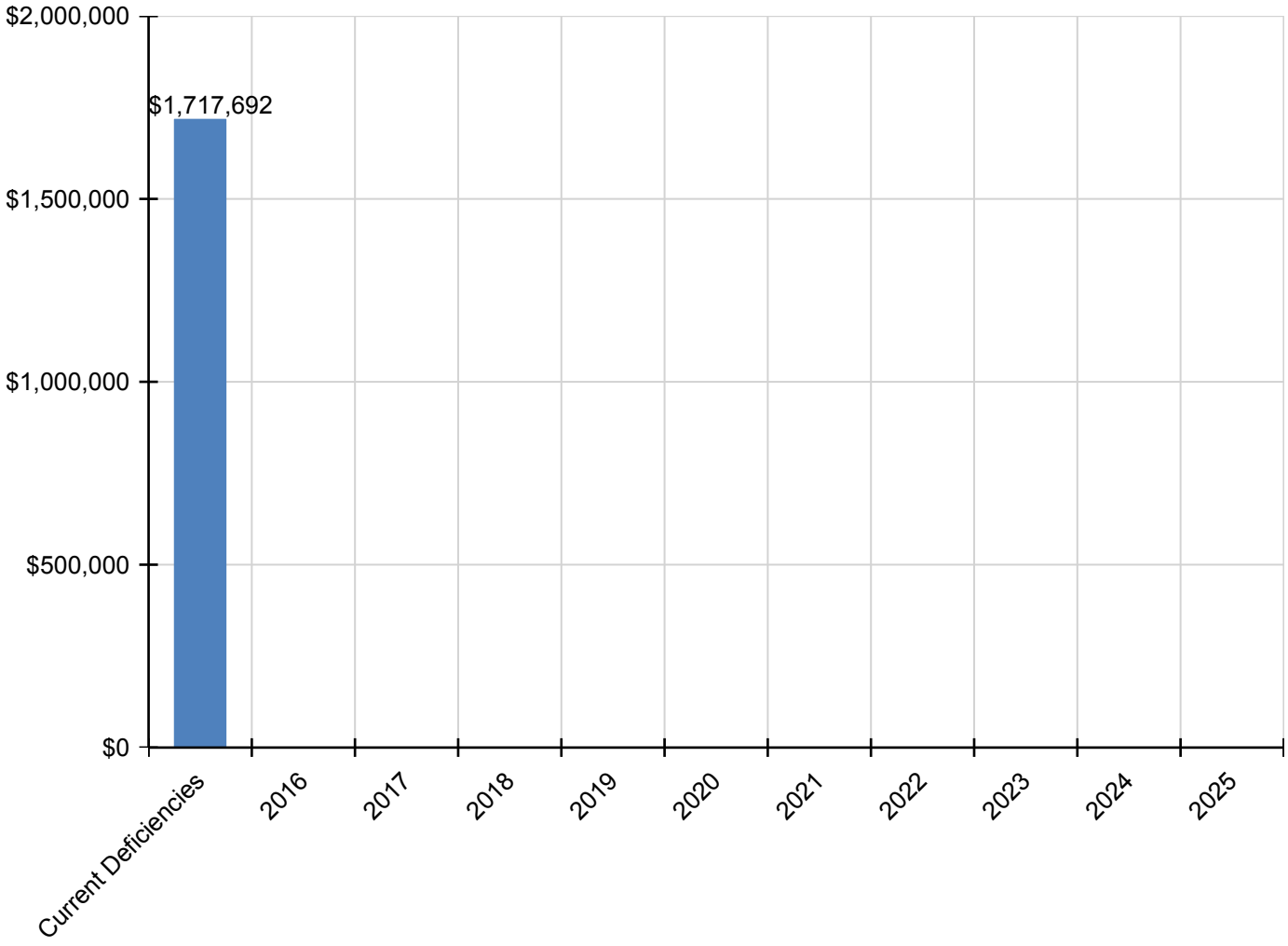
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$1,717,692**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,717,692**
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	$169,691	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$169,691**
G2030 - Pedestrian Paving	$212,114	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$212,114**
G2040 - Site Development	$1,069,580	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,069,580**
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	$95,860	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$95,860**
G4030 - Site Communications & Security	$170,447	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$170,447**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

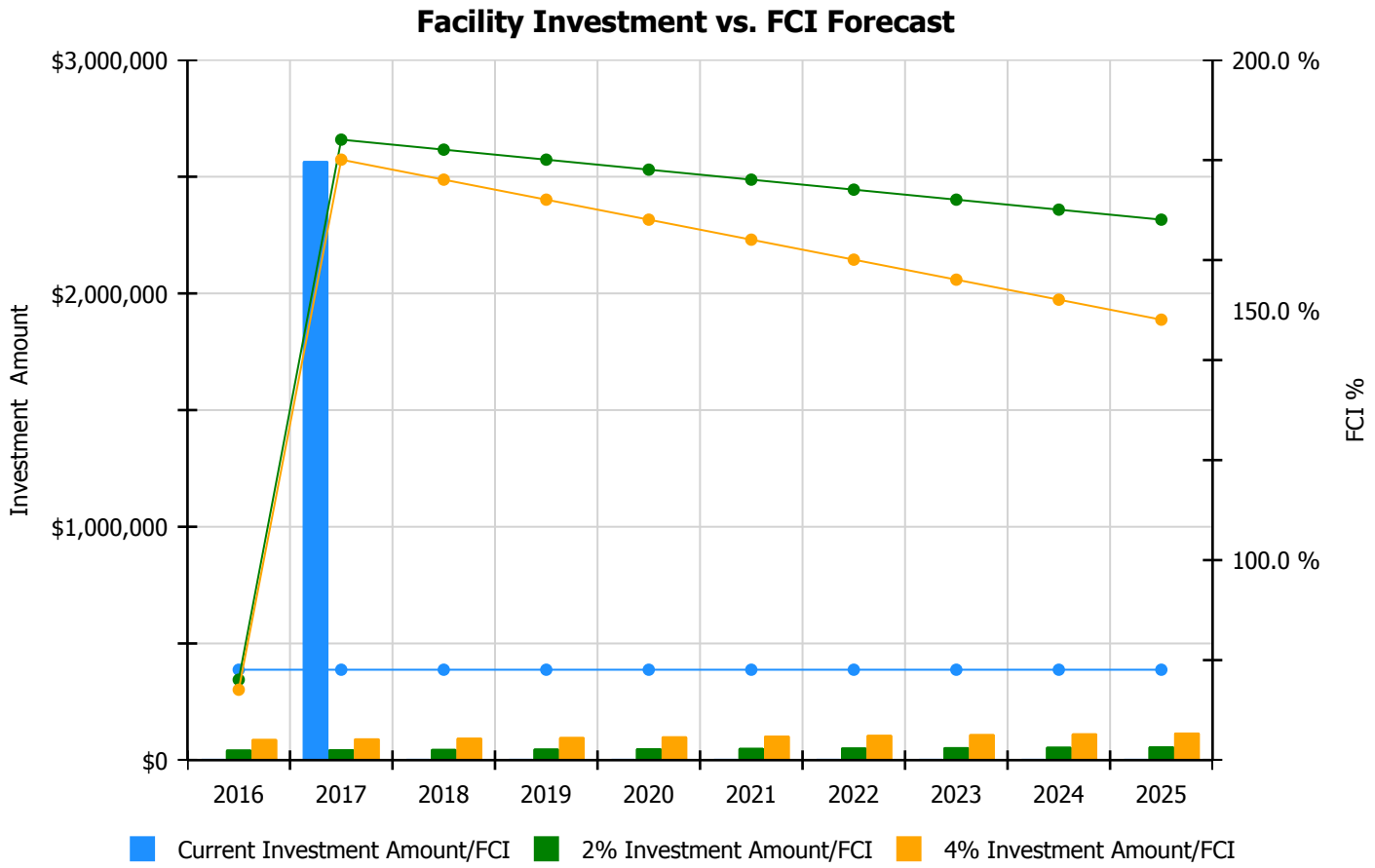
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

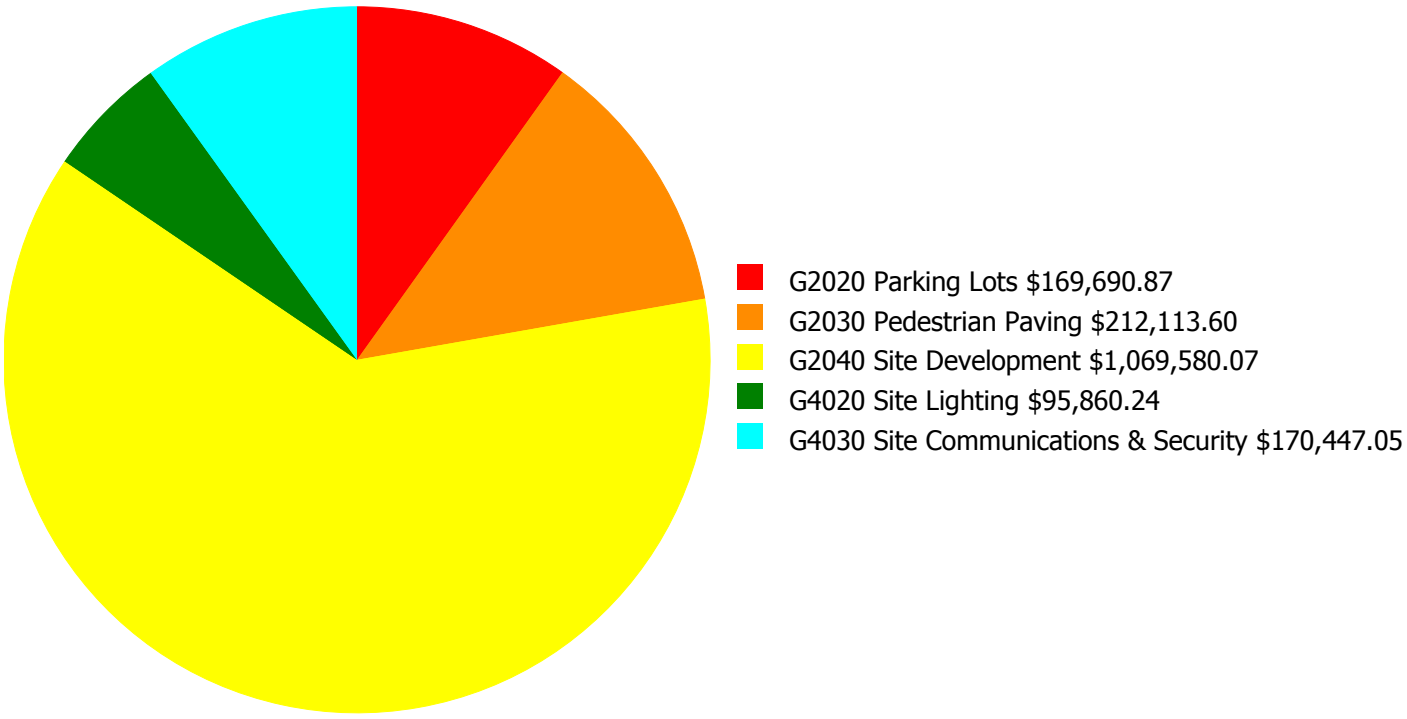
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 78.08%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$45,318.00	76.08 %	$90,637.00	74.08 %
2017	$2,567,292	$46,678.00	184.08 %	$93,356.00	180.08 %
2018	$0	$48,078.00	182.08 %	$96,157.00	176.08 %
2019	$0	$49,521.00	180.08 %	$99,041.00	172.08 %
2020	$0	$51,006.00	178.08 %	$102,013.00	168.08 %
2021	$0	$52,537.00	176.08 %	$105,073.00	164.08 %
2022	$0	$54,113.00	174.08 %	$108,225.00	160.08 %
2023	$0	$55,736.00	172.08 %	$111,472.00	156.08 %
2024	$0	$57,408.00	170.08 %	$114,816.00	152.08 %
2025	$0	$59,130.00	168.08 %	$118,261.00	148.08 %
Total:	**$2,567,292**	**$519,525.00**		**$1,039,051.00**	

Deficiency Summary by System

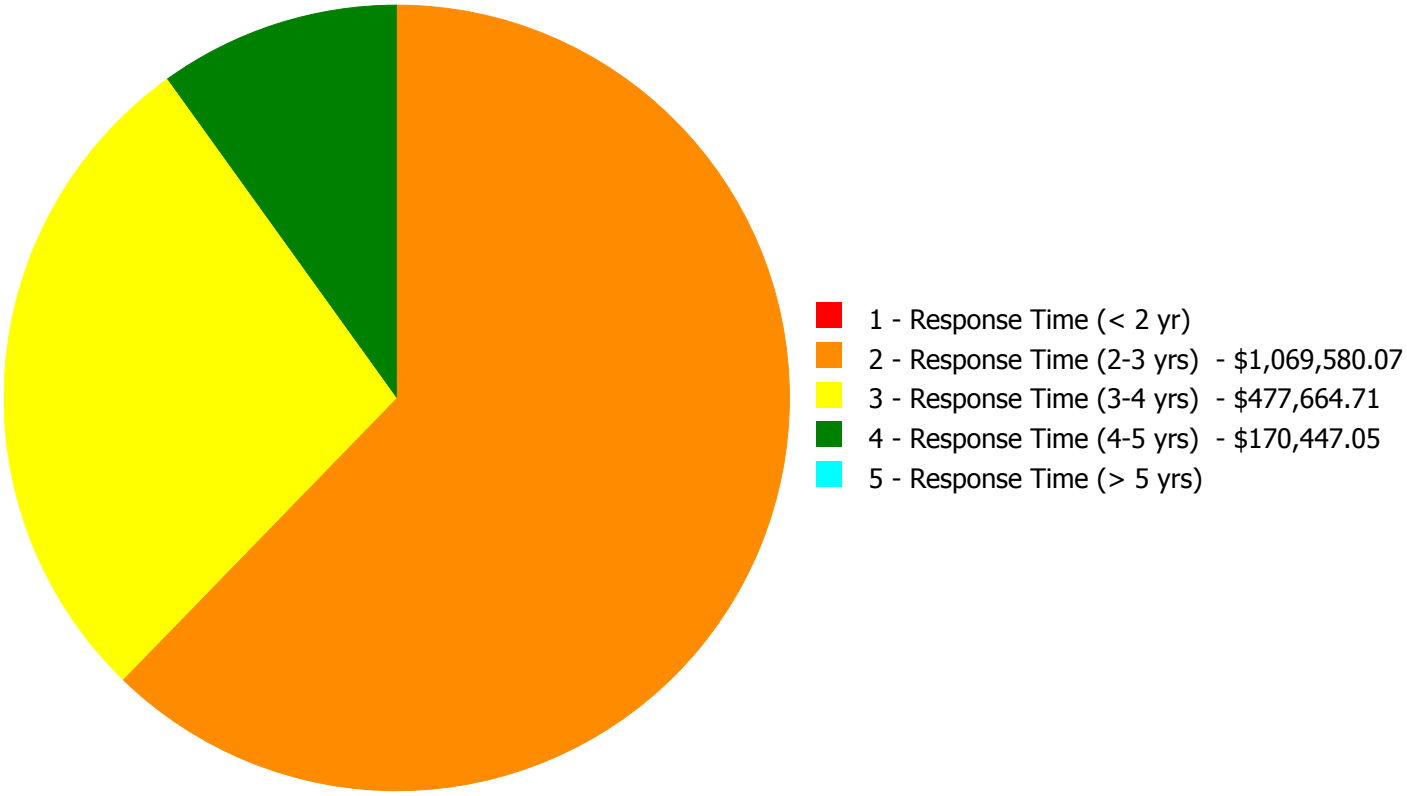
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $1,717,691.83

Deficiency Summary by Priority

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



Budget Estimate Total: $1,717,691.83

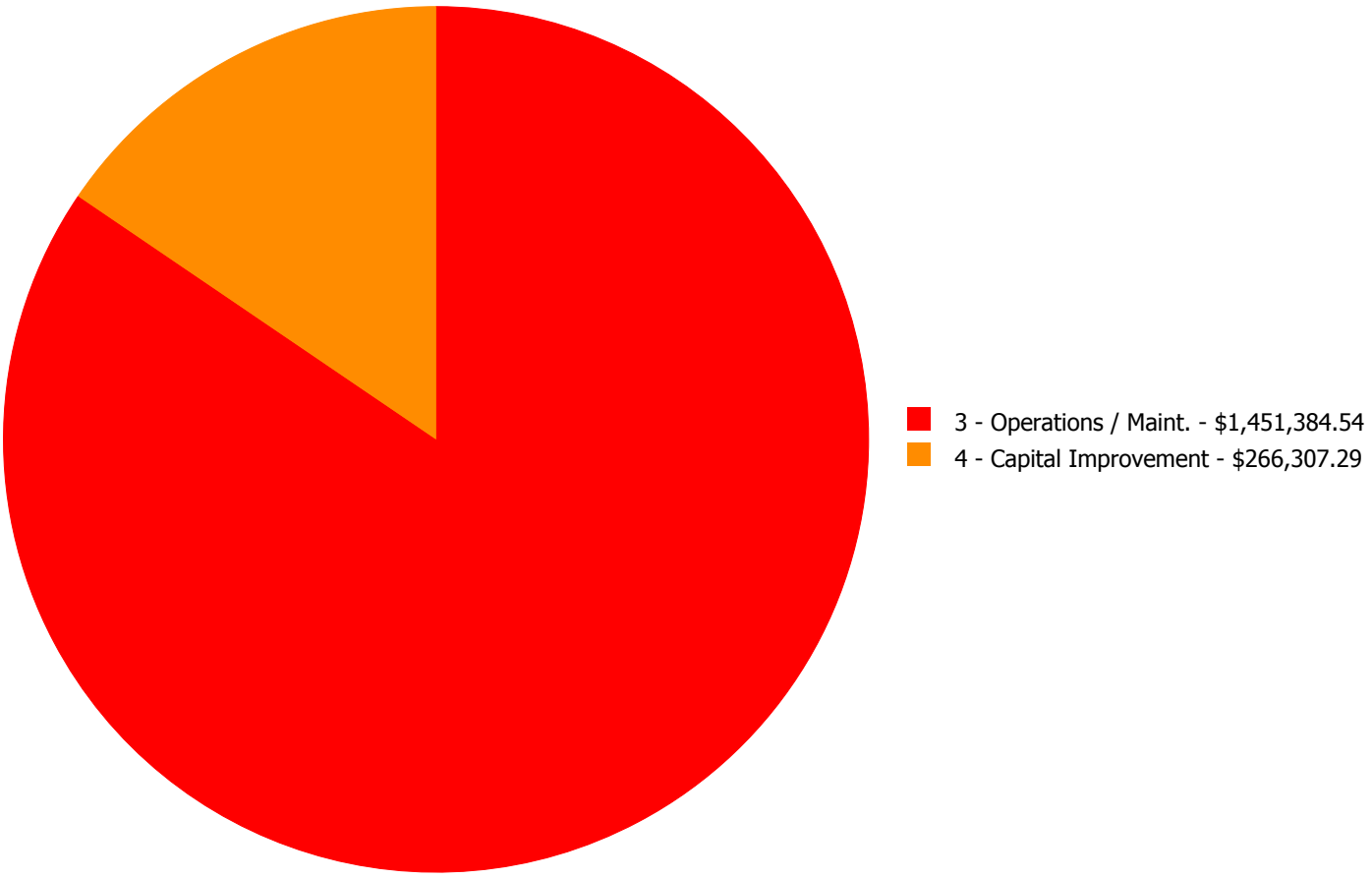
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2020	Parking Lots	$0.00	$0.00	$169,690.87	$0.00	$0.00	$169,690.87
G2030	Pedestrian Paving	$0.00	$0.00	$212,113.60	$0.00	$0.00	$212,113.60
G2040	Site Development	$0.00	$1,069,580.07	$0.00	$0.00	$0.00	$1,069,580.07
G4020	Site Lighting	$0.00	$0.00	$95,860.24	$0.00	$0.00	$95,860.24
G4030	Site Communications & Security	$0.00	$0.00	$0.00	$170,447.05	$0.00	$170,447.05
	Total:	$0.00	$1,069,580.07	$477,664.71	$170,447.05	$0.00	$1,717,691.83

Deficiency Summary by Category

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



Budget Estimate Total: $1,717,691.83

Deficiency Details by Priority

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

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

System: G2040 - Site Development

Location: Site

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace chain link gate - 6' high

Qty: 1,600.00

Unit of Measure: Ea.

Estimate: $1,069,580.07

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Replace chain link fence and gates – beyond service life

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

System: G2020 - Parking Lots

Location: Parking
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 3 - Response Time (3-4 yrs)
Correction: Remove and replace AC paving parking lot
Qty: 12,000.00
Unit of Measure: S.F.
Estimate: $169,690.87
Assessor Name: Matt Mahaffey
Date Created: 02/24/2016

Notes: Replace pavement of existing parking including striping and accessible spaces, provide ADA signage

System: G2030 - Pedestrian Paving

Location: Play yard
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 3 - Response Time (3-4 yrs)
Correction: Remove and replace AC paving
Qty: 15,000.00
Unit of Measure: S.F.
Estimate: $212,113.60
Assessor Name: Matt Mahaffey
Date Created: 02/24/2016

Notes: Resurface play yard and sidewalk paving

System: G4020 - Site Lighting

This deficiency has no image.

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: $95,860.24

Assessor Name: Matt Mahaffey

Date Created: 02/24/2016

Notes: Install additional pole-mounted lights for the grounds

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

System: G4030 - Site Communications & Security

Location: grounds

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add Site Paging System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $170,447.05

Assessor Name: Tom Moe

Date Created: 02/24/2016

Notes: Install additional exterior speakers for the grounds

Equipment Inventory

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

No data found for this asset

Glossary

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

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

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

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

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

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

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

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

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

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

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