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.

Dunbar School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	1750 N. 12Th St.	Enrollment	302
	Philadelphia, Pa 19122	Grade Range	'00-08'
Phone/Fax	215-684-5065 / 215-684-8945	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Dunbar	Turnaround Model	Turnaround

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	**61.44%**	**$14,391,373**	**$23,424,724**
Building	60.46 %	$13,855,861	$22,916,164
Grounds	105.30 %	$535,512	$508,560

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	154.93 %	$951,040	$613,842
Exterior Walls (Shows condition of the structural condition of the exterior facade)	56.93 %	$974,640	$1,711,976
Windows (Shows functionality of exterior windows)	155.14 %	$1,296,605	$835,772
Exterior Doors (Shows condition of exterior doors)	18.09 %	$12,126	$67,032
Interior Doors (Classroom doors)	95.81 %	$152,910	$159,600
Interior Walls (Paint and Finishes)	70.40 %	$422,823	$600,628
Plumbing Fixtures	08.33 %	$53,068	$636,804
Boilers	99.24 %	$873,209	$879,928
Chillers/Cooling Towers	62.10 %	$716,576	$1,153,908
Radiators/Unit Ventilators/HVAC	150.13 %	$3,040,594	$2,025,324
Heating/Cooling Controls	155.54 %	$988,816	$635,740
Electrical Service and Distribution	112.54 %	$466,981	$414,960
Lighting	63.26 %	$939,601	$1,485,344
Communications and Security (Cameras, Pa System and Fire Alarm)	00.00 %	$0	$556,472

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

S525001;Dunbar

Final

Site Assessment Report

February 1, 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):	53,200
Year Built:	1932
Last Renovation:	
Replacement Value:	$23,424,724
Repair Cost:	$14,391,372.82
Total FCI:	61.44 %
Total RSLI:	80.09 %

Description:

Facility assessment, July 2015

School District of Philadelphia

Dunbar Elementary School

1750 N. 12th Street

Philadelphia, PA 19122

53,200 SF / 477 Students / LN 03

The Dunbar Elementary school building is located at 1750 N. 12th Street in Philadelphia, PA. The 3 story, 53,200square foot building was originally constructed in 1932. The building has a basement partially above ground and a penthouse on the roof partially open to roof area. Open roof is converted in to a paved play area completely enclosed with chain link fencing (sides and roof).

Mr. Derek Parker, Facility Area Coordinator provided input to the Parsons assessment team on current problems and planned

renovation projects. Ms. Mary Koehler, Building Engineer, accompanied us on our tour of the school and provided us with detailed information on the building systems and recent maintenance history.

STRUCTURAL/ EXTERIOR CLOSURE:

The building typically rests on concrete foundations and bearing walls that are not showing signs of settlement. However, there is evidence of severe water penetration through basement windows and window wells during rain. Foundation walls do not show signs of deterioration. Substantial portion of boiler room floor is covered with water. The mold build-up is evident in boiler room and other parts of mechanical spaces. Portions of the basement slab are cracked but do not show signs of heaving.

The main structure consists typically of cast-in-place concrete columns, beams and one-way concrete slabs. Long slab spans are supported with steel truss girders. Above ground floor slabs are generally in good condition. The penthouse roof structure partially exposed to weather is in god condition with some minor rusting of lintels.

The building envelope is typically masonry with face brick with decorative stone portals at entrance doors. In general, masonry is in fair to poor condition with deteriorated and missing mortar from joints; some face brick buckling and cracks are evident. The penthouse walls show thermal cracking just below concrete roof slab. Water penetration through wall has been reported.

The original windows were replaced approximately in early 1980's with extruded aluminum double hung windows, single glazed with acrylic sheet. Basement and first floor windows are fitted with security screens anchored to masonry at window perimeter. All windows are generally beyond their service life, in poor condition; most are difficult to operate, some hardware is missing.

Roofing is typically built-up in fair condition. All roofing and flashing is typically in poor condition with some deterioration of the built-up system including water ponding and soft spots; play area on the roof is in fair condition; however, leaks have been reported.

Exterior doors are typically hollow metal in fair to good condition. Service doors are generally in poor condition with peeling paint and rusty. Generally, the building is not accessible per ADA requirements due to first floor- grade separation with no ramps or lifts.

INTERIORS:

Partition wall types include plastered ceramic hollow blocks and painted CMU. The interior wall finishes are generally painted plaster or drywall and some painted brick with marble and glazed brick wainscot in stairways and toilets. Generally, paint is in poor condition with water deterioration on inside face of the exterior walls.

Most ceilings are 2x4 suspended acoustical panels and exposed, painted. The suspension system and tile are old and approaching the end of their useful life. Paint on exposed ceilings is deteriorated.

Flooring in classrooms, gym and auditorium is generally hardwood; and patterned concrete in most corridors and toilets. Most flooring is original and in poor condition, however, is often uneven creating possible tripping hazard; cove base is typically in fair condition. Some areas have VCT tile, generally in fair condition; however about 40% of tiles are VAT tiles (containing asbestos), in poor condition.

Interior doors are generally rail and stile and solid core wood doors, some glazed; with matching wood frame side lights and transoms. Door finishes are typically in poor condition. Most doors are fitted with door knobs and are not ADA compliant. The doors leading to exit stairways are hollow metal doors and frames in good condition.

Fittings include original chalk boards, generally in poor condition; toilet accessories were recently replaced and in good condition; toilet partitions, generally in good condition (recently replaced), accessible stalls of ambulatory type are provided in most students' toilets; staff toilets are generally original and not accessible. Handrails and ornamental metals are generally in good condition. Interior identifying signage is typically directly painted on wall or door surfaces generally in poor condition.

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

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

Other equipment includes kitchen equipment, generally in good condition.

Furnishings include fixed casework in classrooms, corridors and library, generally in fair to poor condition; window shades/blinds,

generally in poor condition; fixed auditorium seating is original, generally in fair condition with some damaged seats.

CONVEYING SYSTEMS:

The building has no elevators.

PLUMBING:

Plumbing Fixtures - Many of the original plumbing fixtures have been upgraded in the last decade. Fixtures in the restrooms on each floor consist of wall and floor mounted flush valve water closets, wall hung urinals and lavatories with wheel handle faucets. A few of the fixtures are not in service and several flush valves are damaged. With repairs these fixtures should provide reliable service for the next 10-15 years. However, the older units should be replaced as part of any renovation of the spaces.

Drinking fountains in the corridors and at the restrooms are a mixture of wall hung with integral refrigerated coolers and wall hung porcelain fountains. The porcelain fountains are well beyond their service life and should be replaced; most are NOT accessible type.

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

The Cafeteria has one three compartment stainless steel sink with lever operated faucets and integral grease trap.

Domestic Water Distribution - A 3" city water service enters the building from N. Twelfth Street. The meter is 2" and located in the basement coal/ash room. A reduced pressure backflow preventer is not installed on the domestic water side. The original domestic hot and cold water distribution piping was replaced with copper piping and sweat fittings. The maintenance staff reports no significant problems with scale build up in the domestic piping and the supply is adequate to the fixtures.

A single State Sandblaster gas fired, 70 gallon, vertical hot water heater with small circulating pump supplies hot water for domestic use. The unit is located in the boiler room on the basement level and its installation date is unknown. The hot water heater is equipped with a T&P relief valve, and expansion tank.

Sanitary Waste - The original storm and sanitary sewer piping is galvanized with threaded fittings. Downspouts from the roof run down the interior of the building and connect to the storm sewer system in the basement.

A sewage ejector pit located in basement receives water from the basement area. It has two pumps that are beyond their service life and covered in rust. The sewage ejector pit has overflowed in the past and both pumps should be replaced to prevent future flooding of the basement. The pit is not sealed, but should be.

The maintenance staff reported mostly minor problems with the sanitary waste piping systems. However, the sewer piping has been in service for nearly 80 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 - The rain water drains from the roof are routed through mechanical chases in the building and are original. The system is beyond its service life. Rain water is draining into the basement through grate covered light wells on the exterior of the building. Drains need to be installed in these pits and piped to the sump pit in the basement.

MECHANICAL:

Energy Supply - A 3" city gas service enters the building from N. Twelfth Street near the middle of the block. The meter is 2" and located in the in the basement coal/ash room.

The oil supply is stored in a 12,000 gallon underground storage tank (UST) located in the parking lot off N. Twelfth Street. Duplex pumps located in the basement boiler room circulate oil through the system. The fuel oil pumps are beyond their service life and should be inspected and replaced with a new system and control scheme. Oil is used as the primary fuel for the boilers. It is estimated that the storage tank is beyond its useful life and should be inspected on a regular basis.

Heat Generating Systems - Low pressure steam is generated at a maximum of 15 lbs/sq. in., typically 5-8 lbs/sq. in., by two Weil-McLain Model 94 cast iron sectional boilers with, net IBR rating of 4,286MBH. The building engineer said the boilers were installed in 1974, which puts them beyond their useful service life. One boiler can handle the load in normal winter weather conditions; two units are required on very cold days. Each boiler is equipped with a Webster burner, installed in 2000, designed to operate on fuel oil. The

burners should be replaced as they are nearing the end of their service life and newer, more efficient technologies are available. Burner oil pumps are loose and not driven by the fan motor. Combustion air makeup is supplied by louvers equipped with motorized dampers. The Building Engineer reports exhaust gas leaks from the boiler flue due to rusted out duct work. This poses a serious safety issue in the winter as the boiler room fills with exhaust gas. Cast iron sectional boilers have an anticipated service life of 35 years or more; as these units have been in service for 41 years they should be replaced.

The condensate receiver, located in the basement, was replaced in 2014. The building engineer reported no steam leaks from the condensate system.

Distribution Systems - Steam piping is black steel (ASTM A53) with welded fittings. The condensate piping is Schedule 80 black steel with threaded fittings. Steam and condensate piping mains from the basement level run up through the building to the radiators on all four floors. The distribution piping has been in use well beyond its service life and will require more frequent attention from the maintenance staff to address pipe/valve failures as time passes. The District should hire a qualified contractor to examine the steam and condensate piping and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 10 years.

Two pipe fin tube radiators provide heating for the majority of classrooms, offices, and hallways. The radiators are original to the building and well beyond their service life. A new heating system should be installed to meet ventilation requirements and achieve more efficient operation. The new units should be designed for quiet operation and equipped with hot water coils, chilled water coils, and integral heat exchangers, where applicable, to introduce sufficient outdoor air to the building.

The school has no operable mechanical ventilation. The existing exhaust fans in the attic are inoperable due to "environmental conditions". Provide ventilation for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers. For the small gymnasium install a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the window openings. Install similar units for the administration offices. Provide Ventilation for the Auditorium by installing a constant volume air handling unit with distribution ductwork and registers. These units would be equipped with hot water heating coils and chilled water cooling coils. Steam converters could be installed in the existing boiler room with circulating pumps, distribution piping and controls to provide heating hot water for the new coils.

The exhaust fans serving the restrooms should be replaced after asbestos abatement is complete.

Terminal & Package Units - Several of the classrooms in the school building have window air conditioning units that have an anticipated service life of only 10 years. Installing a 150 ton air-cooled chiller on the roof with pumps located in a mechanical room and chilled water distribution piping could supply more reliable air conditioning for the building with a much longer service life.

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

Controls & Instrumentation - The original pneumatic systems still provide basic control functions. Pneumatic room thermostats are intended to control the steam radiator control valves. In reality the radiator control valves are wide open and heating control is achieved via the boilers. Pneumatic control air is supplied from a Robertshaw compressor and Hankison air dryer located in the boiler room. The maintenance staff reports no problems with oil, moisture or dirt in the pneumatic copper tubing. The pneumatic systems are beyond their service life and require too much attention from the maintenance staff. The original control valves and pneumatic actuators are beyond their service life and should be rebuilt or replaced. These controls should be converted to DDC.

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

Sprinklers - The school building is NOT covered by an automatic sprinkler system. There are fire stand pipes in each of the two building stairwells. Installing a sprinkler system with quick response type heads should reduce insurance costs by providing protection for the property investment. A fire pump may be required depending on the available city water pressure. The building does have standpipes in the stairwells.

ELECTRICAL:

Electrical Service - The electrical service is fed from a medium voltage overhead line on wooden poles along W Montgomery Ave. The service drops down a pole to underground, then to a vault mounted transformer located along the west side of the school. The

service enters the building underground to a 240V, 2 phase, 400A disconnect switch located in the main electrical room in the basement. The service is then connected to a 400A, 2 phase, 5 wire distribution panel. The service equipment is original to the building and is beyond their service life. The current service would not be adequate for the addition of an elevator or air conditioning. It is recommended to replace the existing service with one that is capable of handling both and elevator and an air conditioning system for the school.

Distribution System and Raceway System - Each floor has electrical panels to serve receptacles and lighting on that floor. Most of these panels are original to the building, but there are some newer panels that were installed to provide power for window air conditioning units. During extremely hot days, the air conditioning load causes circuit breakers to trip on overload.

Receptacles - Classrooms are typically supplied with duplex receptacles spaced along all walls. Receptacle count for typical classrooms was found to be 3 to 4. Provide an additional 2 receptacles along each wall. The computer lab room utilizes extension cords, and power strips to power computers. Surface mounted raceway and power poles should be installed to eliminate hazards associated with extension cords and power strips.

Lighting - The facility's lighting is comprised of T12 fluorescent fixtures. Corridors and classrooms typically have 4 lamp lay in grid type fixtures. The auditorium lighting is made up of incandescent decorative pendant type. The gymnasium lighting is provided by 8' industrial strip fixtures containing 4 – 4' lamps. The lighting levels in classrooms were found to be approximately 30 fc, which is below the recommended levels of 50 fc. Auditorium lighting levels were found to be adequate. Gymnasium lighting was inadequate at less than 30 fc., as opposed to the recommended 50 fc.

Fire Alarm System – The fire alarm system is a Simplex system. The original fire alarm system was replaced approximately 5 years ago. Both audio and visual devices were installed throughout the entire school including classrooms.

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

Public Address/Intercom/Paging – The paging system is adequate and in good condition. Each classroom contains a mounted speaker. Two way communications is not available through the public announcement system. Communication back to the office is through a wall mounted phone located in each classroom.

Clock and Program System – The clock and program system uses battery operated clocks that synchronize to a wireless base unit. The clock and program system is adequate.

Television System - The present television system is adequate. All classrooms have been wired for CATV, but no televisions are provided.

Security System - The facility is equipped with a security system. The system contains door contacts on all exterior doors.

Emergency Power System – A 16 kW, 120/240V, natural gas Olympia generator exists in the basement, however, it is inoperable. It is recommended that a new generator of sufficient size to operate an elevator and emergency lights be installed.

Emergency Lighting System / Exit Lighting- The emergency lighting is provided by select fixtures being connected to the emergency panel. The auditorium has wall mounted incandescent fixtures that are connected to the emergency panel. The EXIT lighting consists of incandescent fixtures that are original to the building and are in poor condition. EXIT lighting should be replaced with LED style fixtures.

Lightning Protection System- The protective fencing that is over the play area is connected to a grounding conductor that is run down the building to a ground rod.

Site Lighting - Site lighting is provided by building mounted HID flood lights installed along the sides where the parking lot exists. The site lighting appears to be in poor condition and has surpassed its service life.

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

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

ACCESSIBILITY:

The building does not have accessible entrance, and accessible routes. The toilets are equipped with accessible fixtures, toilet partitions are configured for ambulatory accessibility only (no wheelchair access), grab bars are provided on one side of toilet only. The doors in the building generally do not have ADA required door handles.

GROUNDS (SITE):

Parking lot adjacent to the building is in poor condition, paving is cracked and deteriorated; stall striping is in good condition, however no accessible stalls and aisles are marked; perimeter fences are generally in poor condition and rusting. There is no landscaping.

RECOMMENDATIONS:

- Rebuild sidewalk window wells and replace failing sidewalk access hatch (see plumbing for drainage)
- Remove mold from basement walls (boiler room and mechanical spaces)
- Repair cracks in masonry, tuck-point all walls
- Install all new roofing system including insulation within next 4 to 5 years; tear-down existing roofing; install flashing, counter flashing and reglets
- Replace roofing and paving at roof play area
- Replace all windows
- Repaint exterior doors; provide weather-stripping
- Replace all suspended acoustical ceilings (60% area)
- Repair and repaint exposed ceilings (50% area)
- Repair and repaint interior walls (80% area)
- Replace carpet in library
- Replace all VAT tile with VCT tile
- Repair & refinish hardwood flooring (replacement 10%)
- Install 4000 lb traction elevator serving all floors and basement
- Provide ADA compliant ramp at one entrance (location TBD)
- Repair and refinish all interior doors
- Provide ADA compliant hardware on interior doors
- Replace original chalk boards
- Replace signage throughout
- Reconfigure toilets on each floor for accessibility, provide new toilet partitions
- Provide new toilet accessories including grab bars
- Resurface parking area; provide new striping incl. ADA spaces and aisles.
- Resurface playground
- Replace chain link fence at parking/play ground perimeter
- Replace domestic water booster pumps and isolation valves and install reduced pressure backflow preventer on incoming domestic water line.
- Replace the wall hung drinking fountains and integral refrigerated coolers in the corridors and at the restrooms. These units are well beyond their service life and most are NOT accessible type.
- Hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Replace existing sewage ejector pump system and piping in the basement as it looks beyond its useful service life.
- Add three area drains to the light wells on the exterior of the building and pipe them to the sump pit in the basement.
- Hire a qualified contractor to examine the steam and condensate piping, in service for nearly 70 years, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Replace the existing 4,286MBH cast iron boilers, which are beyond their service life and leak exhaust gas, burners, and exhaust ductwork.
- Inspect and replace current fuel oil pumping system with new system and control scheme.
- Remove the existing fin tube steam radiators and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.
- Remove the window air conditioning units and install a 150 ton air-cooled chiller on the roof with chilled water distribution piping and pumps located in a mechanical room to supply more reliable air conditioning for the building with a much longer service life.
- Replace existing exhaust fans serving the bathrooms.
- Provide ventilation for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers.
- Provide ventilation for the Gymnasium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the window openings.
- Provide ventilation for the administration offices by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.

- Provide ventilation for the Auditorium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.
- Replace the pneumatic controls for the HVAC systems with modern DDC modules, valves and actuators to improve reliability and energy efficiency. Provide a new building automation system (BAS) with communication interface to the preferred system in use throughout the District.
- Install a fire protection sprinkler system with quick response type heads to reduce insurance costs by providing protection for the property. A fire pump may be required depending on the available city water pressure.
- Replace existing generator with a larger generator to support an elevator and emergency lighting.
- Replace old panels with new panels.
- Replace exit lights with LED style fixtures.
- Provide new emergency fixtures for emergency egress.
- Replace existing T12 lighting fixtures with T8 fixtures.
- Add 2 additional receptacles along each wall in classrooms.
- Add surface mounted raceway in the computer classrooms.
- Replace existing service with new 480/277V three phase service
- Replace site lighting fixtures.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 1 / Tm 4
Status:	Accepted by SDP	Team:	Tm 4
Site ID:	S525001		

Site Condition Summary

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

Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	31.83 %	$279,088.38
B10 - Superstructure	37.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	63.26 %	87.33 %	$2,283,371.07
B30 - Roofing	75.00 %	154.93 %	$951,040.37
C10 - Interior Construction	57.72 %	25.29 %	$282,430.94
C20 - Stairs	37.00 %	0.00 %	$0.00
C30 - Interior Finishes	110.46 %	48.13 %	$946,839.90
D10 - Conveying	100.00 %	306.11 %	$867,996.33
D20 - Plumbing	43.03 %	43.88 %	$422,277.23
D30 - HVAC	118.75 %	107.20 %	$5,619,194.71
D40 - Fire Protection	106.78 %	176.39 %	$669,083.19
D50 - Electrical	121.90 %	60.96 %	$1,534,538.76
E10 - Equipment	65.81 %	0.00 %	$0.00
E20 - Furnishings	25.00 %	0.00 %	$0.00
G20 - Site Improvements	106.31 %	141.18 %	$529,325.64
G40 - Site Electrical Utilities	102.77 %	4.63 %	$6,186.30
Totals:	**80.09 %**	**61.44 %**	**$14,391,372.82**

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)
B525001;Dunbar	53,200	60.46	$1,608,607.15	$1,827,843.80	$3,293,542.55	$1,190,500.30	$5,935,367.08
G525001;Grounds	23,000	105.30	$0.00	$18,084.92	$51,963.60	$293,705.41	$171,758.01
Total:		**61.44**	**$1,608,607.15**	**$1,845,928.72**	**$3,345,506.15**	**$1,484,205.71**	**$6,107,125.09**

Deficiencies By Priority

1 - Response Time (< 2 yr) - $1,608,607.15
2 - Response Time (2-3 yrs) - $1,845,928.72
3 - Response Time (3-4 yrs) - $3,345,506.15
4 - Response Time (4-5 yrs) - $1,484,205.71
5 - Response Time (> 5 yrs) - $6,107,125.09

Budget Estimate Total: $14,391,372.82

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):	53,200
Year Built:	1932
Last Renovation:	
Replacement Value:	$22,916,164
Repair Cost:	$13,855,860.88
Total FCI:	60.46 %
Total RSLI:	79.53 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B525001
Sewage Ejector:	Yes	Status:	Accepted by SDP
Site ID:	S525001		

Condition Summary

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

UNIFORMAT Classification	RSLI %	FCI %	Current Repair Cost
A10 - Foundations	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	31.83 %	$279,088.38
B10 - Superstructure	37.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	63.26 %	87.33 %	$2,283,371.07
B30 - Roofing	75.00 %	154.93 %	$951,040.37
C10 - Interior Construction	57.72 %	25.29 %	$282,430.94
C20 - Stairs	37.00 %	0.00 %	$0.00
C30 - Interior Finishes	110.46 %	48.13 %	$946,839.90
D10 - Conveying	100.00 %	306.11 %	$867,996.33
D20 - Plumbing	43.03 %	43.88 %	$422,277.23
D30 - HVAC	118.75 %	107.20 %	$5,619,194.71
D40 - Fire Protection	106.78 %	176.39 %	$669,083.19
D50 - Electrical	121.90 %	60.96 %	$1,534,538.76
E10 - Equipment	65.81 %	0.00 %	$0.00
E20 - Furnishings	25.00 %	0.00 %	$0.00
Totals:	**79.53 %**	**60.46 %**	**$13,855,860.88**

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	$15.74	S.F.	53,200	100	1932	2032	2052	37.00 %	0.00 %	37			$837,368
A1030	Slab on Grade	$6.62	S.F.	53,200	100	1932	2032	2052	37.00 %	0.00 %	37			$352,184
A2010	Basement Excavation	$5.60	S.F.	53,200	100	1932	2032	2052	37.00 %	0.00 %	37			$297,920
A2020	Basement Walls	$10.88	S.F.	53,200	100	1932	2032	2052	37.00 %	48.22 %	37		$279,088.38	$578,816
B1010	Floor Construction	$65.82	S.F.	53,200	100	1932	2032	2052	37.00 %	0.00 %	37			$3,501,624
B1020	Roof Construction	$12.16	S.F.	53,200	100	1932	2032	2052	37.00 %	0.00 %	37			$646,912
B2010	Exterior Walls	$32.18	S.F.	53,200	100	1932	2032	2052	37.00 %	56.93 %	37		$974,640.45	$1,711,976
B2020	Exterior Windows	$15.71	S.F.	53,200	40	1980	2020	2060	112.50 %	155.14 %	45		$1,296,604.57	$835,772
B2030	Exterior Doors	$1.26	S.F.	53,200	25	1995	2020	2045	120.00 %	18.09 %	30		$12,126.05	$67,032
B3010105	Built-Up	$32.69	S.F.	8,420	20	1990	2010	2030	75.00 %	92.57 %	15		$254,806.65	$275,250
B3010120	Single Ply Membrane	$33.54	S.F.	10,000	20	1990	2010	2030	75.00 %	207.58 %	15		$696,233.72	$335,400
B3010130	Preformed Metal Roofing	$46.94	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$33.54	S.F.		25				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	53,200	20	1990	2010	2030	75.00 %	0.00 %	15			$3,192
C1010	Partitions	$15.32	S.F.	53,200	100	1932	2032	2052	37.00 %	0.00 %	37			$815,024
C1020	Interior Doors	$3.00	S.F.	53,200	40	1932	1972	2052	92.50 %	95.81 %	37		$152,910.07	$159,600
C1030	Fittings	$2.67	S.F.	53,200	40	1990	2030	2070	137.50 %	91.18 %	55		$129,520.87	$142,044
C2010	Stair Construction	$1.20	S.F.	53,200	100	1932	2032	2052	37.00 %	0.00 %	37			$63,840

Site Assessment Report - B525001;Dunbar

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	$11.29	S.F.	53,200	10	2000	2010	2027	120.00 %	70.40 %	12		$422,823.16	$600,628
C3010231	Vinyl Wall Covering	$0.83	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.25	S.F.		30				0.00 %	0.00 %				$0
C3020411	Carpet	$6.24	S.F.	2,000	10	2005	2015	2027	120.00 %	162.44 %	12		$20,273.06	$12,480
C3020412	Terrazzo & Tile	$64.54	S.F.		50				0.00 %	0.00 %				$0
C3020413	Vinyl Flooring	$8.27	S.F.	13,000	20	2000	2020	2040	125.00 %	98.72 %	25		$106,128.72	$107,510
C3020414	Wood Flooring	$19.04	S.F.	14,900	25	1932	1957	2045	120.00 %	45.06 %	30		$127,826.43	$283,696
C3020415	Concrete Floor Finishes	$0.83	S.F.	10,800	50	1932	1982	2062	94.00 %	0.00 %	47			$8,964
C3030	Ceiling Finishes	$17.93	S.F.	53,200	25	1990	2015	2040	100.00 %	28.28 %	25		$269,788.53	$953,876
D1010	Elevators and Lifts	$5.33	S.F.	53,200	35	2015	2050		100.00 %	306.11 %	35		$867,996.33	$283,556
D2010	Plumbing Fixtures	$11.97	S.F.	53,200	35	1932	1967	2025	28.57 %	8.33 %	10		$53,067.85	$636,804
D2020	Domestic Water Distribution	$1.49	S.F.	53,200	25	1995	2020	2030	60.00 %	55.74 %	15		$44,187.06	$79,268
D2030	Sanitary Waste	$2.58	S.F.	53,200	25	1932	1957	2042	108.00 %	204.26 %	27		$280,365.10	$137,256
D2040	Rain Water Drainage	$2.05	S.F.	53,200	30	1932	1962	2025	33.33 %	40.95 %	10		$44,657.22	$109,060
D3020	Heat Generating Systems	$16.54	S.F.	53,200	35	1974	2009	2052	105.71 %	99.24 %	37		$873,208.91	$879,928
D3030	Cooling Generating Systems	$21.69	S.F.	53,200	20			2037	110.00 %	62.10 %	22		$716,575.55	$1,153,908
D3040	Distribution Systems	$38.07	S.F.	53,200	25	1932	1957	2042	108.00 %	150.13 %	27		$3,040,594.25	$2,025,324
D3050	Terminal & Package Units	$10.28	S.F.	53,200	20	2005	2025	2045	150.00 %	0.00 %	30			$546,896
D3060	Controls & Instrumentation	$11.95	S.F.	53,200	20	1932	1952	2047	160.00 %	155.54 %	32		$988,816.00	$635,740
D4010	Sprinklers	$6.24	S.F.	53,200	35			2052	105.71 %	201.55 %	37		$669,083.19	$331,968
D4020	Standpipes	$0.89	S.F.	53,200	35	1985	2020	2055	114.29 %	0.00 %	40			$47,348
D5010	Electrical Service/Distribution	$7.80	S.F.	53,200	30	1932	1962	2047	106.67 %	112.54 %	32		$466,981.16	$414,960
D5020	Lighting and Branch Wiring	$27.92	S.F.	53,200	20	1932	1952	2037	110.00 %	63.26 %	22		$939,601.42	$1,485,344
D5030	Communications and Security	$10.46	S.F.	53,200	15	2010	2025	2040	166.67 %	0.00 %	25			$556,472
D5090	Other Electrical Systems	$1.14	S.F.	53,200	30	1932	1962	2047	106.67 %	210.98 %	32		$127,956.18	$60,648
E1020	Institutional Equipment	$4.73	S.F.	53,200	35	2010	2045		85.71 %	0.00 %	30			$251,636
E1090	Other Equipment	$10.86	S.F.	53,200	35	2000	2035		57.14 %	0.00 %	20			$577,752
E2010	Fixed Furnishings	$2.09	S.F.	53,200	40	1932	1972	2025	25.00 %	0.00 %	10			$111,188
								Total	**79.53 %**	**60.46 %**			**$13,855,860.88**	**$22,916,164**

System Notes

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

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

Note: Paint 100%

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

Note: Hardwood flooring 37%
VCT/ VAT tile 32%
Carpet 5%
Concrete 26%

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

Note: Acoustical ceiling 48%
Exposed/ plaster ceiling 52%

System: D5010 - Electrical Service/Distribution — This system contains no images

Note: 1 - 37.5 kVA 2 phase to 3 phase - phase converter
1 - 75 kVA 2 phase to 3 phase - phase converter

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:	**$13,855,861**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,266,987**	**$15,122,847**
*** 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	$279,088	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$279,088**
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	$974,640	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$974,640**
B2020 - Exterior Windows	$1,296,605	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,296,605**
B2030 - Exterior Doors	$12,126	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$12,126**
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	$254,807	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$254,807**
B3010120 - Single Ply Membrane	$696,234	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$696,234**
B3010130 - Preformed Metal Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010140 - Shingle & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3020 - Roof Openings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C - Interiors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C10 - Interior Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1010 - Partitions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

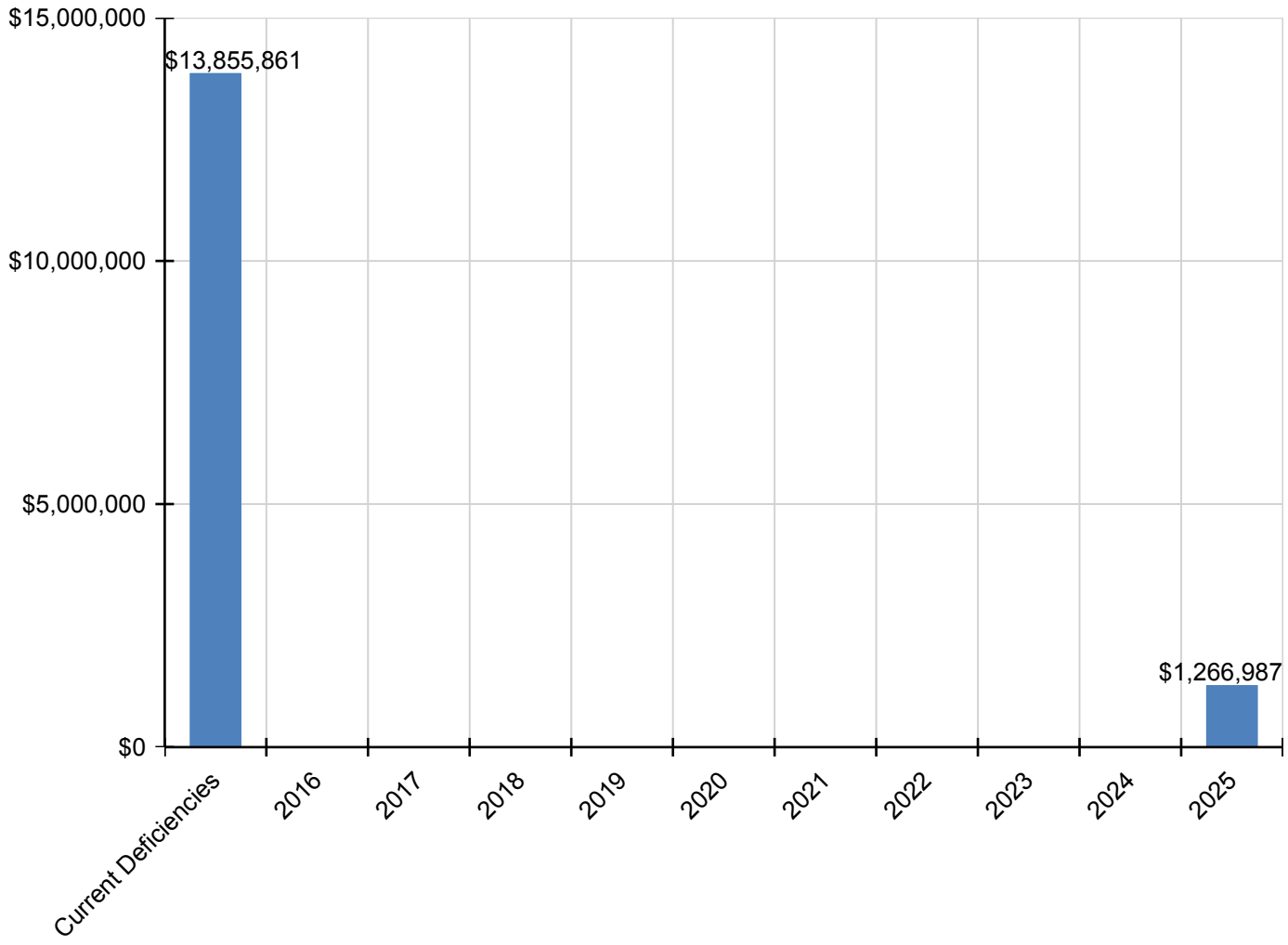
C1020 - Interior Doors	$152,910	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$152,910**
C1030 - Fittings	$129,521	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$129,521**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$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	$422,823	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$422,823**
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	$20,273	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$20,273**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$106,129	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$106,129**
C3020414 - Wood Flooring	$127,826	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$127,826**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$269,789	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$269,789**
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	$867,996	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$867,996**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$53,068	$0	$0	$0	$0	$0	$0	$0	$0	$0	$941,392	**$994,460**
D2020 - Domestic Water Distribution	$44,187	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$44,187**
D2030 - Sanitary Waste	$280,365	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$280,365**
D2040 - Rain Water Drainage	$44,657	$0	$0	$0	$0	$0	$0	$0	$0	$0	$161,224	**$205,881**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$873,209	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$873,209**
D3030 - Cooling Generating Systems	$716,576	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$716,576**
D3040 - Distribution Systems	$3,040,594	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,040,594**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$988,816	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$988,816**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$669,083	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$669,083**
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	$466,981	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$466,981**
D5020 - Lighting and Branch Wiring	$939,601	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$939,601**
D5030 - Communications and Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5090 - Other Electrical Systems	$127,956	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$127,956**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$164,370	**$164,370**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

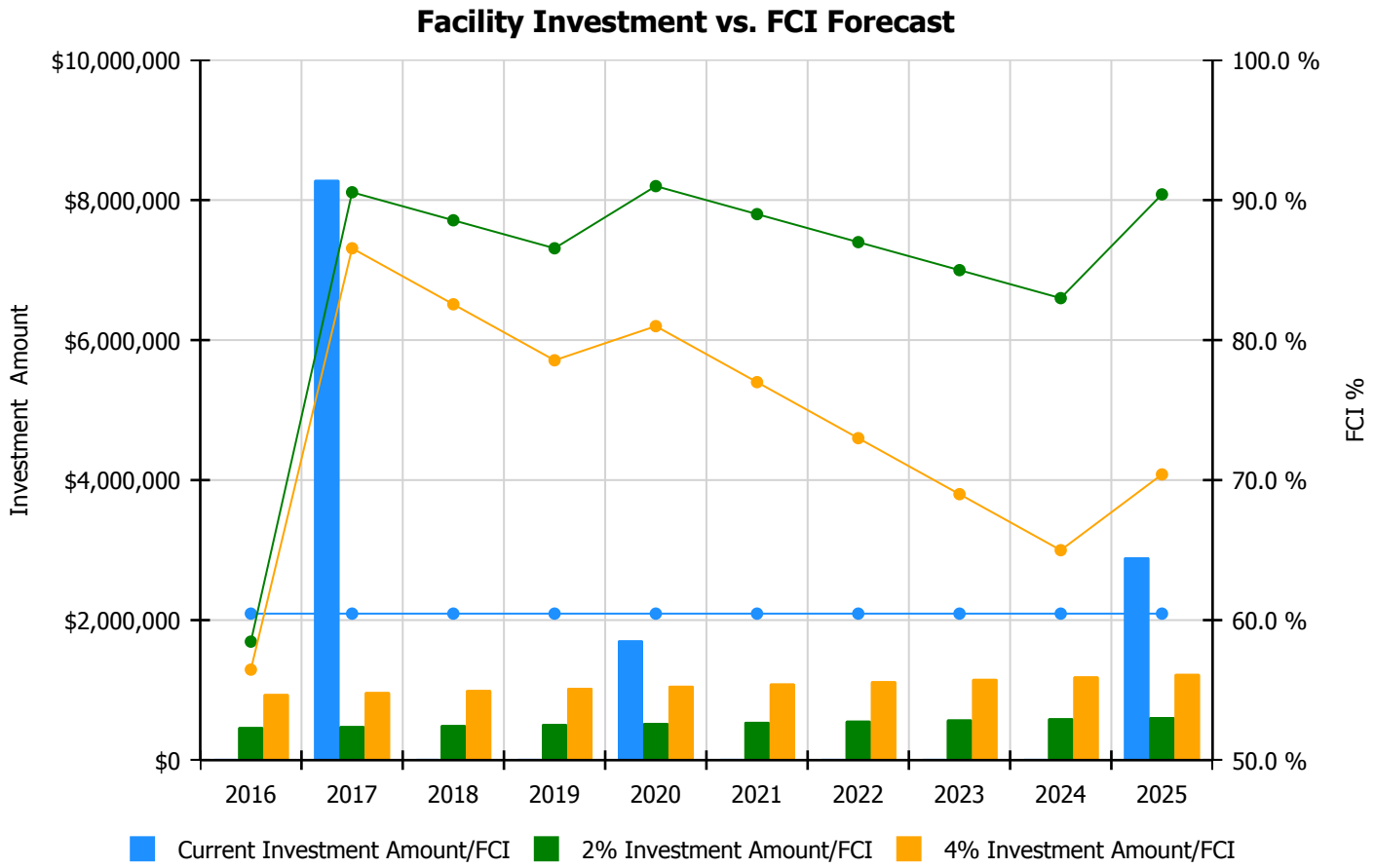
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

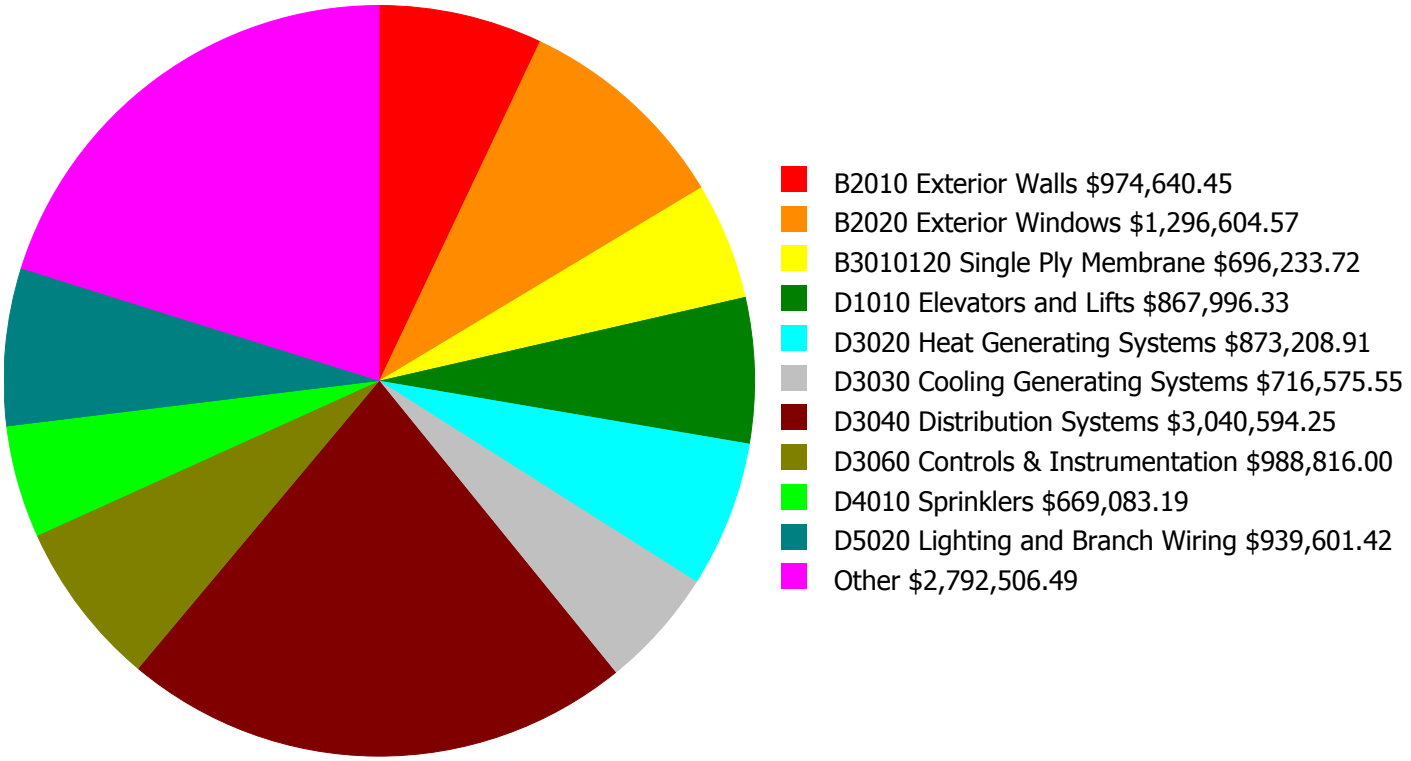
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 60.46%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$472,073.00	58.46 %	$944,146.00	56.46 %
2017	$8,288,482	$486,235.00	90.56 %	$972,470.00	86.56 %
2018	$0	$500,822.00	88.56 %	$1,001,644.00	82.56 %
2019	$0	$515,847.00	86.56 %	$1,031,694.00	78.56 %
2020	$1,710,502	$531,322.00	90.99 %	$1,062,645.00	80.99 %
2021	$0	$547,262.00	88.99 %	$1,094,524.00	76.99 %
2022	$0	$563,680.00	86.99 %	$1,127,360.00	72.99 %
2023	$0	$580,590.00	84.99 %	$1,161,180.00	68.99 %
2024	$0	$598,008.00	82.99 %	$1,196,016.00	64.99 %
2025	$2,898,105	$615,948.00	90.40 %	$1,231,896.00	70.40 %
Total:	**$12,897,088**	**$5,411,787.00**		**$10,823,575.00**	

Deficiency Summary by System

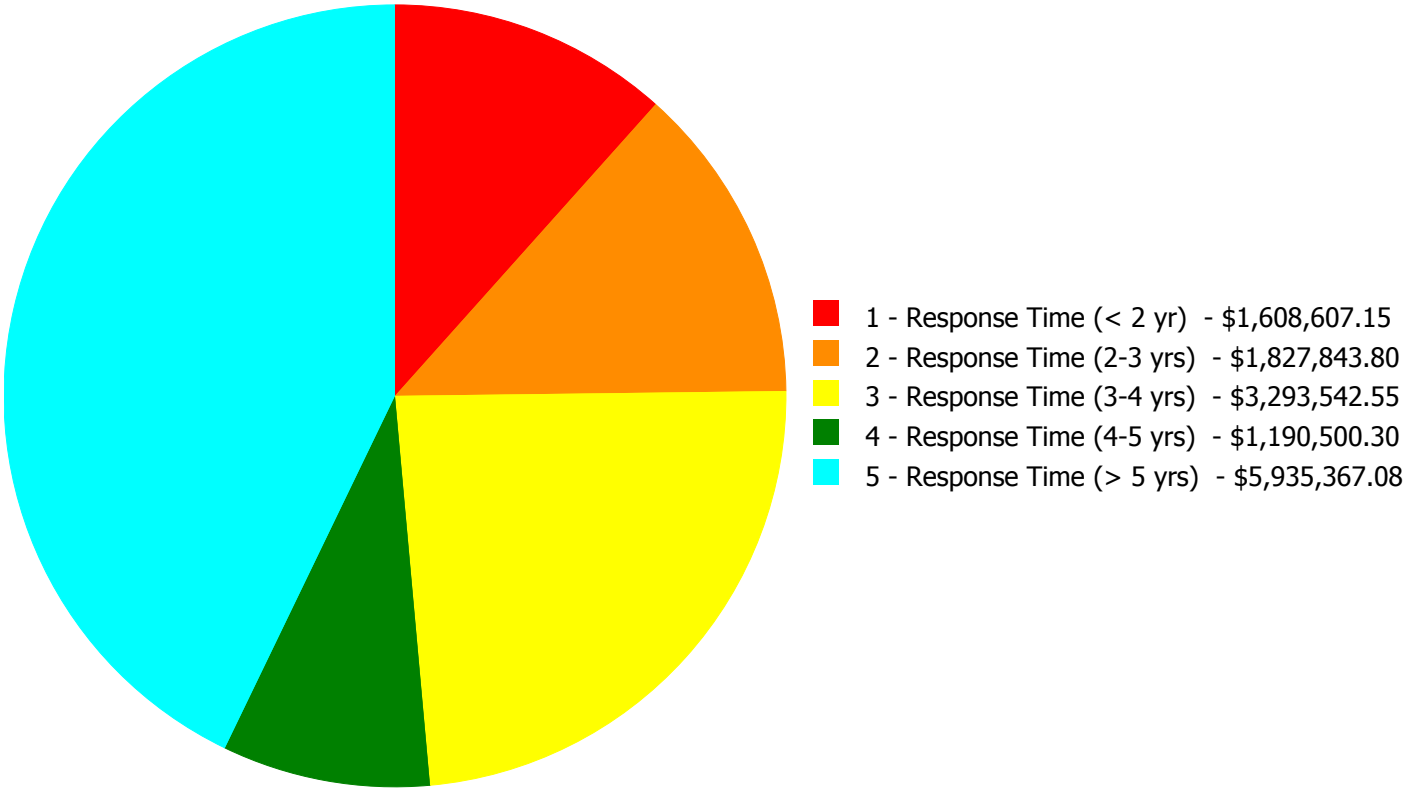
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $13,855,860.88

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: $13,855,860.88

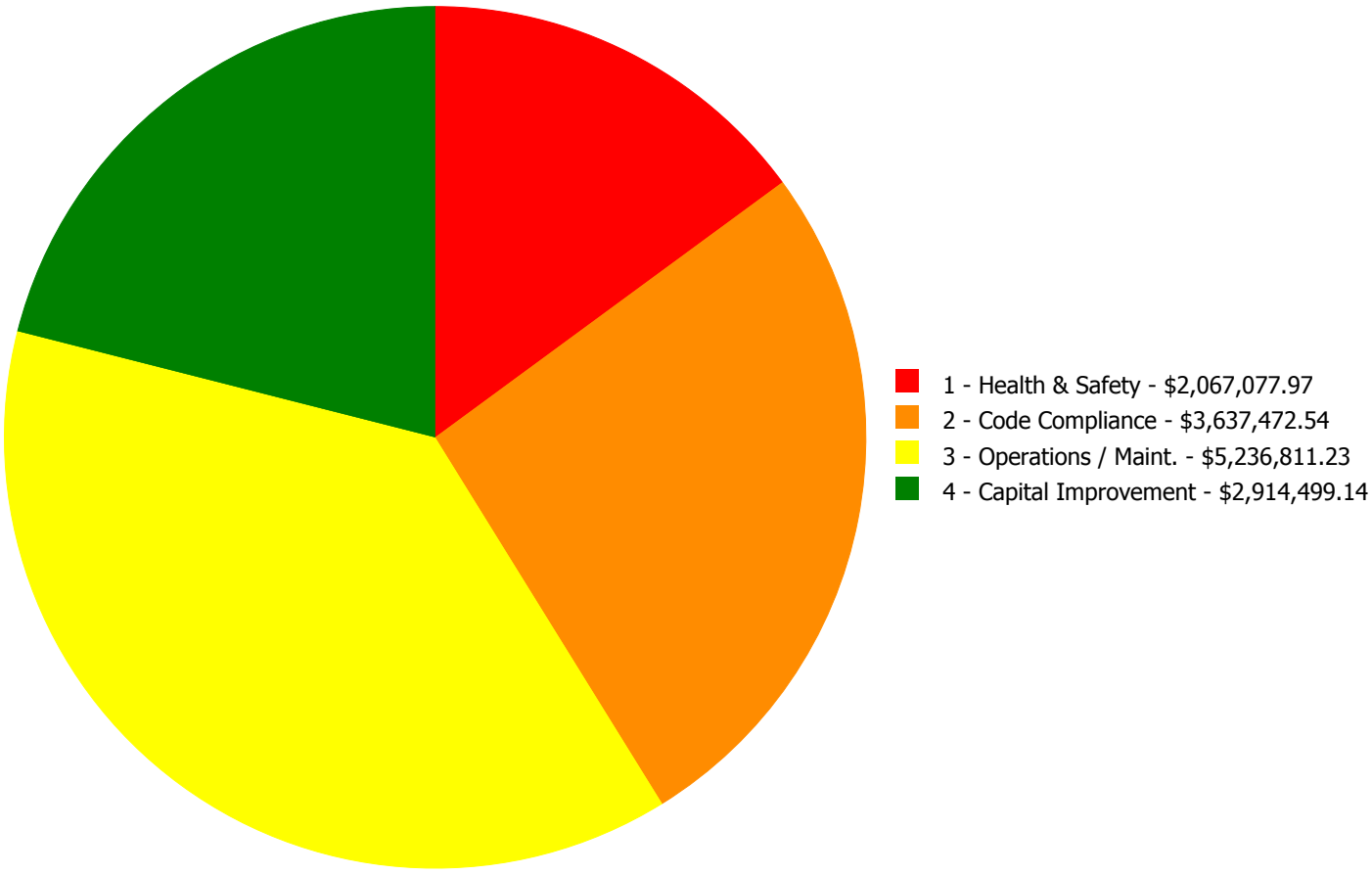
Deficiency By Priority Investment Table

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
A2020	Basement Walls	$0.00	$279,088.38	$0.00	$0.00	$0.00	$279,088.38
B2010	Exterior Walls	$0.00	$974,640.45	$0.00	$0.00	$0.00	$974,640.45
B2020	Exterior Windows	$0.00	$0.00	$0.00	$0.00	$1,296,604.57	$1,296,604.57
B2030	Exterior Doors	$0.00	$0.00	$0.00	$12,126.05	$0.00	$12,126.05
B3010105	Built-Up	$0.00	$254,806.65	$0.00	$0.00	$0.00	$254,806.65
B3010120	Single Ply Membrane	$0.00	$0.00	$696,233.72	$0.00	$0.00	$696,233.72
C1020	Interior Doors	$0.00	$0.00	$0.00	$152,910.07	$0.00	$152,910.07
C1030	Fittings	$0.00	$0.00	$10,976.08	$110,585.77	$7,959.02	$129,520.87
C3010230	Paint & Covering	$0.00	$0.00	$422,823.16	$0.00	$0.00	$422,823.16
C3020411	Carpet	$0.00	$0.00	$0.00	$0.00	$20,273.06	$20,273.06
C3020413	Vinyl Flooring	$0.00	$106,128.72	$0.00	$0.00	$0.00	$106,128.72
C3020414	Wood Flooring	$0.00	$0.00	$0.00	$0.00	$127,826.43	$127,826.43
C3030	Ceiling Finishes	$0.00	$0.00	$0.00	$0.00	$269,788.53	$269,788.53
D1010	Elevators and Lifts	$0.00	$0.00	$867,996.33	$0.00	$0.00	$867,996.33
D2010	Plumbing Fixtures	$0.00	$53,067.85	$0.00	$0.00	$0.00	$53,067.85
D2020	Domestic Water Distribution	$0.00	$44,187.06	$0.00	$0.00	$0.00	$44,187.06
D2030	Sanitary Waste	$0.00	$47,928.38	$232,436.72	$0.00	$0.00	$280,365.10
D2040	Rain Water Drainage	$0.00	$44,657.22	$0.00	$0.00	$0.00	$44,657.22
D3020	Heat Generating Systems	$849,869.82	$23,339.09	$0.00	$0.00	$0.00	$873,208.91
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$716,575.55	$716,575.55
D3040	Distribution Systems	$89,654.14	$0.00	$0.00	$443,416.19	$2,507,523.92	$3,040,594.25
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$0.00	$988,816.00	$988,816.00
D4010	Sprinklers	$669,083.19	$0.00	$0.00	$0.00	$0.00	$669,083.19
D5010	Electrical Service/Distribution	$0.00	$0.00	$0.00	$466,981.16	$0.00	$466,981.16
D5020	Lighting and Branch Wiring	$0.00	$0.00	$935,120.36	$4,481.06	$0.00	$939,601.42
D5090	Other Electrical Systems	$0.00	$0.00	$127,956.18	$0.00	$0.00	$127,956.18
	Total:	$1,608,607.15	$1,827,843.80	$3,293,542.55	$1,190,500.30	$5,935,367.08	$13,855,860.88

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: $13,855,860.88

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: D3020 - Heat Generating Systems

Location: Boiler room
Distress: Health Hazard / Risk
Category: 1 - Health & Safety
Priority: 1 - Response Time (< 2 yr)
Correction: Replace boiler, cast iron sectional (150 HP)
Qty: 2.00
Unit of Measure: Ea.
Estimate: $849,869.82
Assessor Name: System
Date Created: 08/05/2015

Notes: Replace the existing 4,286MBH cast iron boilers, which are beyond their service lives and leak exhaust gases into the boiler room.

System: D3040 - Distribution Systems

Location: Attic
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 1 - Response Time (< 2 yr)
Correction: Replace utility set exhaust fan (5 HP)
Qty: 2.00
Unit of Measure: Ea.
Estimate: $89,654.14
Assessor Name: System
Date Created: 08/05/2015

Notes: Replace existing exhaust fans serving the bathrooms.

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: 53,200.00

Unit of Measure: S.F.

Estimate: $669,083.19

Assessor Name: System

Date Created: 08/05/2015

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

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

System: A2020 - Basement Walls

Location: Interiors/ Basement

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Mold abatement on basement walls - insert proper quantities

Qty: 12,000.00

Unit of Measure: S.F.

Estimate: $279,088.38

Assessor Name: System

Date Created: 09/03/2015

Notes: Remove mold from basement walls (boiler room and mechanical spaces)

System: B2010 - Exterior Walls

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

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

Qty: 35,000.00

Unit of Measure: S.F.

Estimate: $974,640.45

Assessor Name: System

Date Created: 09/02/2015

Notes: Repair cracks in masonry, tuck-point all walls

System: B3010105 - Built-Up

Location: Exterior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Built Up Roof

Qty: 8,420.00

Unit of Measure: S.F.

Estimate: $254,806.65

Assessor Name: System

Date Created: 09/02/2015

Notes: Install all new roofing system including insulation within next 4 to 5 years; tear-down existing roofing; install flashing, counter flashing and reglets

System: C3020413 - Vinyl Flooring

Location: Interiors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 7,400.00

Unit of Measure: S.F.

Estimate: $106,128.72

Assessor Name: System

Date Created: 09/03/2015

Notes: Replace all VAT tile with VCT tile

System: D2010 - Plumbing Fixtures

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 8.00

Unit of Measure: Ea.

Estimate: $53,067.85

Assessor Name: System

Date Created: 08/05/2015

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

System: D2020 - Domestic Water Distribution

Location: Boiler room

Distress: Beyond Service Life

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: $44,187.06

Assessor Name: System

Date Created: 08/05/2015

Notes: Replace domestic water booster pumps and isolation valves and install reduced pressure backflow preventer on incoming domestic water line.

System: D2030 - Sanitary Waste

Location: Boiler room

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace sanitary sewage ejector pit and pumps. (60" dia.)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $47,928.38

Assessor Name: System

Date Created: 08/05/2015

Notes: Replace existing sewage ejector pump system and piping in the basement as it looks beyond its useful service life.

System: D2040 - Rain Water Drainage

Location: Basement

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add internal overflow roof drains - add one for each 10,000 SF of roof or one for each separate section of roof

Qty: 3.00

Unit of Measure: Ea.

Estimate: $44,657.22

Assessor Name: System

Date Created: 09/02/2015

Notes: Add three area drains to the light wells on the exterior of the building and pipe them to the sump pit in the basement.

System: D3020 - Heat Generating Systems

Location: Boiler room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace fuel oil pumps

Qty: 1.00

Unit of Measure: Ea.

Estimate: $23,339.09

Assessor Name: System

Date Created: 08/05/2015

Notes: Inspect and replace current fuel oil pumping system with new system and control scheme.

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

System: B3010120 - Single Ply Membrane

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Remove and replace membrane roofing

Qty: 10,000.00

Unit of Measure: S.F.

Estimate: $696,233.72

Assessor Name: System

Date Created: 09/02/2015

Notes: Replace roofing and paving at roof play area

System: C1030 - Fittings

Location: Interiors

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Replace toilet accessories - select accessories and quantity

Qty: 18.00

Unit of Measure: Ea.

Estimate: $10,976.08

Assessor Name: System

Date Created: 09/02/2015

Notes: Provide new toilet accessories including grab bars

System: C3010230 - Paint & Covering

Location: Interiors

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 78,400.00

Unit of Measure: S.F.

Estimate: $422,823.16

Assessor Name: System

Date Created: 09/03/2015

Notes: Repair and repaint interior walls (80% area)

System: D1010 - Elevators and Lifts

This deficiency has no image.

Location: Interiors

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Add external 5 stop elevator - adjust the electrical run lengths to hook up the elevator

Qty: 1.00

Unit of Measure: Ea.

Estimate: $867,996.33

Assessor Name: System

Date Created: 09/03/2015

Notes: Install 4000 lb. traction elevator serving all floors and basement

System: D2030 - Sanitary Waste

Location: Throughout building

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

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

Qty: 53,200.00

Unit of Measure: S.F.

Estimate: $232,436.72

Assessor Name: System

Date Created: 08/05/2015

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

System: D5020 - Lighting and Branch Wiring

Location: Throughout Building

Distress: Energy Efficiency

Category: 4 - Capital Improvement

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

Correction: Replace Lighting Fixtures (SF)

Qty: 0.00

Unit of Measure: S.F.

Estimate: $830,355.71

Assessor Name: System

Date Created: 08/10/2015

Notes: Replace existing T12 lighting fixtures with T8 fixtures. Potential for energy savings.

System: D5020 - Lighting and Branch Wiring

Location: Throughout School
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 3 - Response Time (3-4 yrs)
Correction: Add wiring device
Qty: 1.00
Unit of Measure: Ea.
Estimate: $104,764.65
Assessor Name: System
Date Created: 08/10/2015

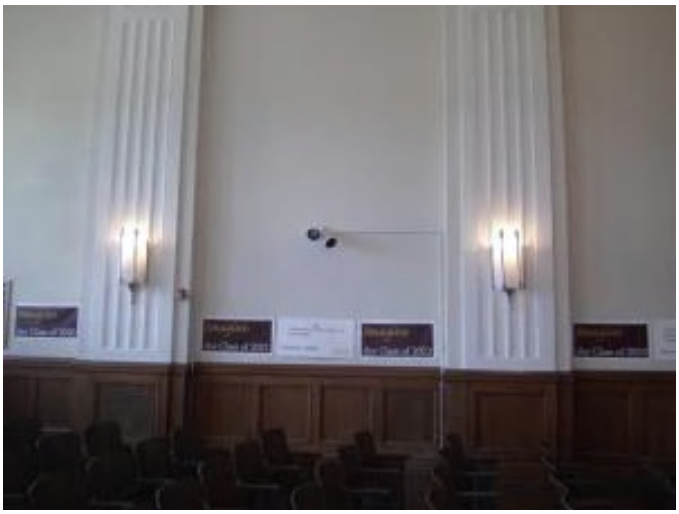
Notes: Add 2 additional receptacles along each wall in classrooms.

System: D5090 - Other Electrical Systems

Location: Basement
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace standby generator system
Qty: 1.00
Unit of Measure: Ea.
Estimate: $91,356.32
Assessor Name: System
Date Created: 08/10/2015

Notes: Replace existing generator with a larger generator to support an elevator and emergency lighting.

System: D5090 - Other Electrical Systems



Location: Throughout Building
Distress: Life Safety / NFPA / PFD
Category: 1 - Health & Safety
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace Emergency/Exit Lighting
Qty: 1.00
Unit of Measure: Ea.
Estimate: $22,947.53
Assessor Name: System
Date Created: 08/10/2015

Notes: Provide new emergency fixtures for emergency egress.

System: D5090 - Other Electrical Systems

Location: Throughout Building
Distress: Life Safety / NFPA / PFD
Category: 1 - Health & Safety
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace Emergency/Exit Lighting
Qty: 1.00
Unit of Measure: Ea.
Estimate: $13,652.33
Assessor Name: System
Date Created: 08/10/2015

Notes: Replace exit lights with LED style fixtures.

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

System: B2030 - Exterior Doors

Location: Exterior
Distress: Appearance
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Refinish and repaint exterior doors - per leaf
Qty: 27.00
Unit of Measure: Ea.
Estimate: $12,126.05
Assessor Name: System
Date Created: 09/02/2015

Notes: Repaint exterior doors; provide weather-stripping

System: C1020 - Interior Doors

Location: Interiors
Distress: Appearance
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Refinish interior doors
Qty: 164.00
Unit of Measure: Ea.
Estimate: $102,173.77
Assessor Name: System
Date Created: 09/02/2015

Notes: Repair and refinish all interior doors

System: C1020 - Interior Doors

Location: Interiors

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Replace door knobs with compliant lever type

Qty: 100.00

Unit of Measure: Ea.

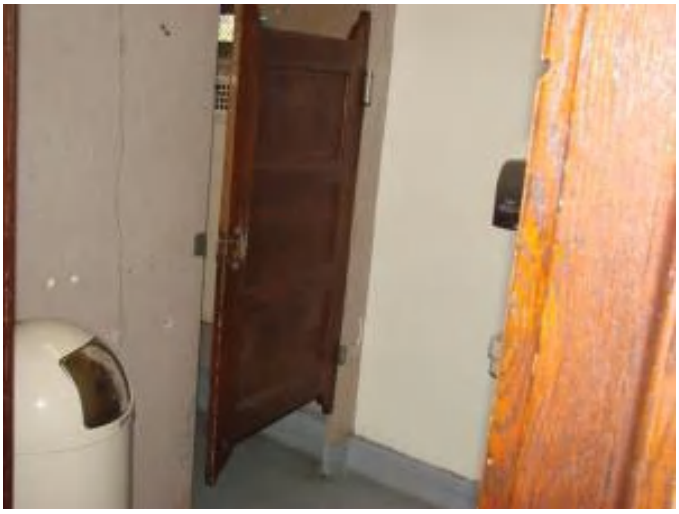
Estimate: $50,736.30

Assessor Name: System

Date Created: 09/02/2015

Notes: Provide ADA compliant hardware on interior doors

System: C1030 - Fittings



Location: Interiors

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Remove and replace damaged toilet paritions - handicap units

Qty: 18.00

Unit of Measure: Ea.

Estimate: $55,579.49

Assessor Name: System

Date Created: 09/02/2015

Notes: Reconfigure toilets on each floor for accessibility, provide new toilet partitions

System: C1030 - Fittings

Location: Interiors

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

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

Qty: 180.00

Unit of Measure: Ea.

Estimate: $55,006.28

Assessor Name: System

Date Created: 09/03/2015

Notes: Replace signage throughout to meet requirements

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 53,200.00

Unit of Measure: S.F.

Estimate: $443,416.19

Assessor Name: System

Date Created: 08/05/2015

Notes: Hire a qualified contractor to examine the steam and condensate piping, in service for nearly 70 years, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.

System: D5010 - Electrical Service/Distribution

Location: Throughout Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Electrical DIstribution System (U1)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $341,447.55

Assessor Name: System

Date Created: 08/10/2015

Notes: Replace old panels with new panels

System: D5010 - Electrical Service/Distribution

Location: Basement

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add Electrical Switchgear and Distribution System

Qty: 0.00

Unit of Measure: Ea.

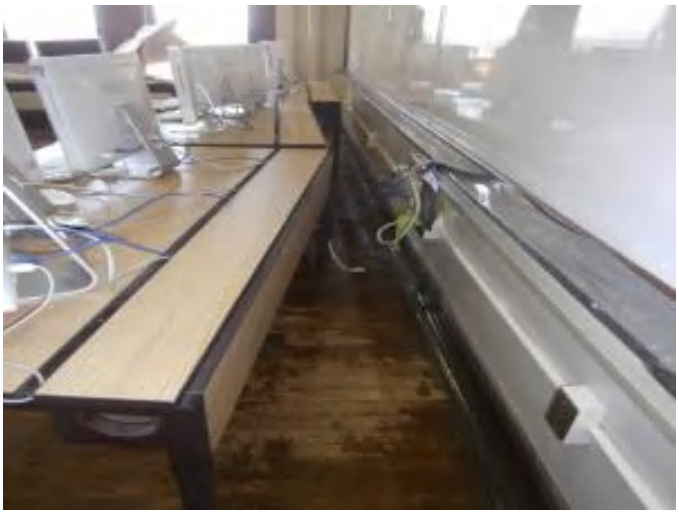
Estimate: $125,533.61

Assessor Name: System

Date Created: 08/10/2015

Notes: Replace existing service with new 480/277V three phase service

System: D5020 - Lighting and Branch Wiring



Location: Computer Classrooms

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Provide surface raceway system and wiring devices

Qty: 1.00

Unit of Measure: L.F.

Estimate: $4,481.06

Assessor Name: System

Date Created: 08/10/2015

Notes: Add surface mounted raceway in the computer classrooms.

Priority 5 - Response Time (> 5 yrs):

System: B2020 - Exterior Windows

Location: Exterior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 275.00

Unit of Measure: Ea.

Estimate: $1,296,604.57

Assessor Name: System

Date Created: 09/02/2015

Notes: Replace all windows

System: C1030 - Fittings

Location: Interiors/ classrooms

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace blackboards with marker boards - pick the appropriate size and insert the quantities

Qty: 12.00

Unit of Measure: Ea.

Estimate: $7,959.02

Assessor Name: System

Date Created: 09/02/2015

Notes: Replace original chalk boards

System: C3020411 - Carpet

Location: Interiors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove and replace carpet

Qty: 2,000.00

Unit of Measure: S.F.

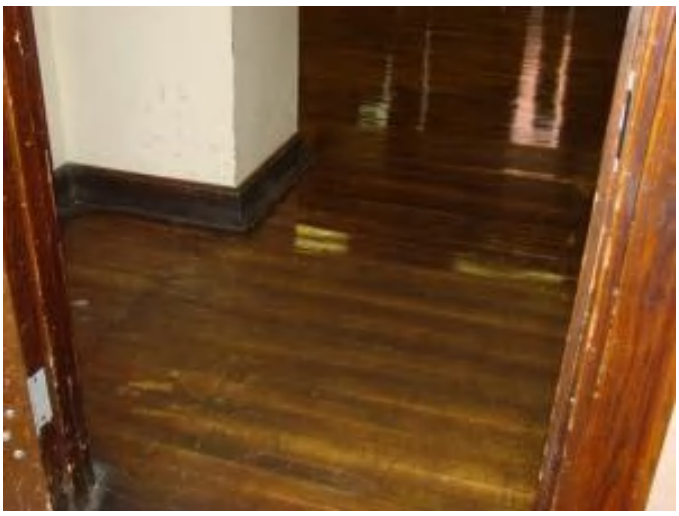
Estimate: $20,273.06

Assessor Name: System

Date Created: 09/03/2015

Notes: Replace carpet in library

System: C3020414 - Wood Flooring



Location: Interiors

Distress: Maintenance Required

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 14,900.00

Unit of Measure: S.F.

Estimate: $127,826.43

Assessor Name: System

Date Created: 09/03/2015

Notes: Repair refinish hardwood flooring (replacement 10%)

System: C3030 - Ceiling Finishes

Location: Interiors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 17,100.00

Unit of Measure: S.F.

Estimate: $216,566.54

Assessor Name: System

Date Created: 09/03/2015

Notes: Replace all suspended acoustical ceilings (60% area)

System: C3030 - Ceiling Finishes

Location: Interiors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Re-paint ceilings - SF of ceilings

Qty: 14,800.00

Unit of Measure: S.F.

Estimate: $53,221.99

Assessor Name: System

Date Created: 09/03/2015

Notes: Repair and repaint exposed ceilings (50% area)

System: D3030 - Cooling Generating Systems

Location: Throughout building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Install chilled water system with distribution piping and pumps. (+75KSF)

Qty: 53,200.00

Unit of Measure: S.F.

Estimate: $716,575.55

Assessor Name: System

Date Created: 08/05/2015

Notes: Remove the window air conditioning units and install a 150 ton air-cooled chiller on the roof with chilled water distribution piping and pumps located in a mechanical room to supply more reliable air conditioning for the building with a much longer service life.

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 21.00

Unit of Measure: C

Estimate: $1,560,095.45

Assessor Name: System

Date Created: 08/05/2015

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

System: D3040 - Distribution Systems

Location: Gymnasium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 6,000.00

Unit of Measure: Ea.

Estimate: $288,457.17

Assessor Name: System

Date Created: 08/05/2015

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

System: D3040 - Distribution Systems

Location: Auditorium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install / replace HVAC unit for Auditorium (800 seat).

Qty: 424.00

Unit of Measure: Seat

Estimate: $264,427.20

Assessor Name: System

Date Created: 08/05/2015

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

System: D3040 - Distribution Systems

Location: Cafeteria

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 477.00

Unit of Measure: Pr.

Estimate: $207,788.99

Assessor Name: System

Date Created: 08/05/2015

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

System: D3040 - Distribution Systems

Location: Administration

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 477.00

Unit of Measure: Pr.

Estimate: $186,755.11

Assessor Name: System

Date Created: 08/05/2015

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

System: D3060 - Controls & Instrumentation

Location: Throughout building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 53,200.00

Unit of Measure: S.F.

Estimate: $988,816.00

Assessor Name: System

Date Created: 08/05/2015

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

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, steam, gross output, 4650 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Boiler Room	Weil-McLain	H-2094			35	1974	2009	$100,500.00	$221,100.00
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, steam, gross output, 4650 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Boiler Room	Weil-McLain	H-2094			35	1974	2009	$100,500.00	$221,100.00
D5010 Electrical Service/Distribution	Panelboards, 3 pole 3 wire, main lugs, 240 V, 400 amp, no main breaker	1.00	Ea.	Basement Electrical Room					30			$1,850.00	$2,035.00
												Total:	**$444,235.00**

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):	23,000
Year Built:	1932
Last Renovation:	
Replacement Value:	$508,560
Repair Cost:	$535,511.94
Total FCI:	105.30 %
Total RSLI:	105.38 %

Description:

Attributes:

General Attributes:

Bldg ID:	S525001	Site ID:	S525001

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	106.31 %	141.18 %	$529,325.64
G40 - Site Electrical Utilities	102.77 %	4.63 %	$6,186.30
Totals:	**105.38 %**	**105.30 %**	**$535,511.94**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2010	Roadways	$11.52	S.F.		30				0.00 %	0.00 %				$0
G2020	Parking Lots	$8.50	S.F.	13,500	30	1980	2010	2047	106.67 %	250.56 %	32		$287,519.11	$114,750
G2030	Pedestrian Paving	$12.30	S.F.	13,000	40	1980	2020	2057	105.00 %	122.96 %	42		$196,617.60	$159,900
G2040	Site Development	$4.36	S.F.	23,000	25	1980	2005	2042	108.00 %	45.06 %	27		$45,188.93	$100,280
G2050	Landscaping & Irrigation	$4.36	S.F.		15				0.00 %	0.00 %				$0
G4020	Site Lighting	$4.84	S.F.	23,000	30	1990	2020	2047	106.67 %	5.56 %	32		$6,186.30	$111,320
G4030	Site Communications & Security	$0.97	S.F.	23,000	30	2010	2040		83.33 %	0.00 %	25			$22,310
								Total	**105.38 %**	**105.30 %**			**$535,511.94**	**$508,560**

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.

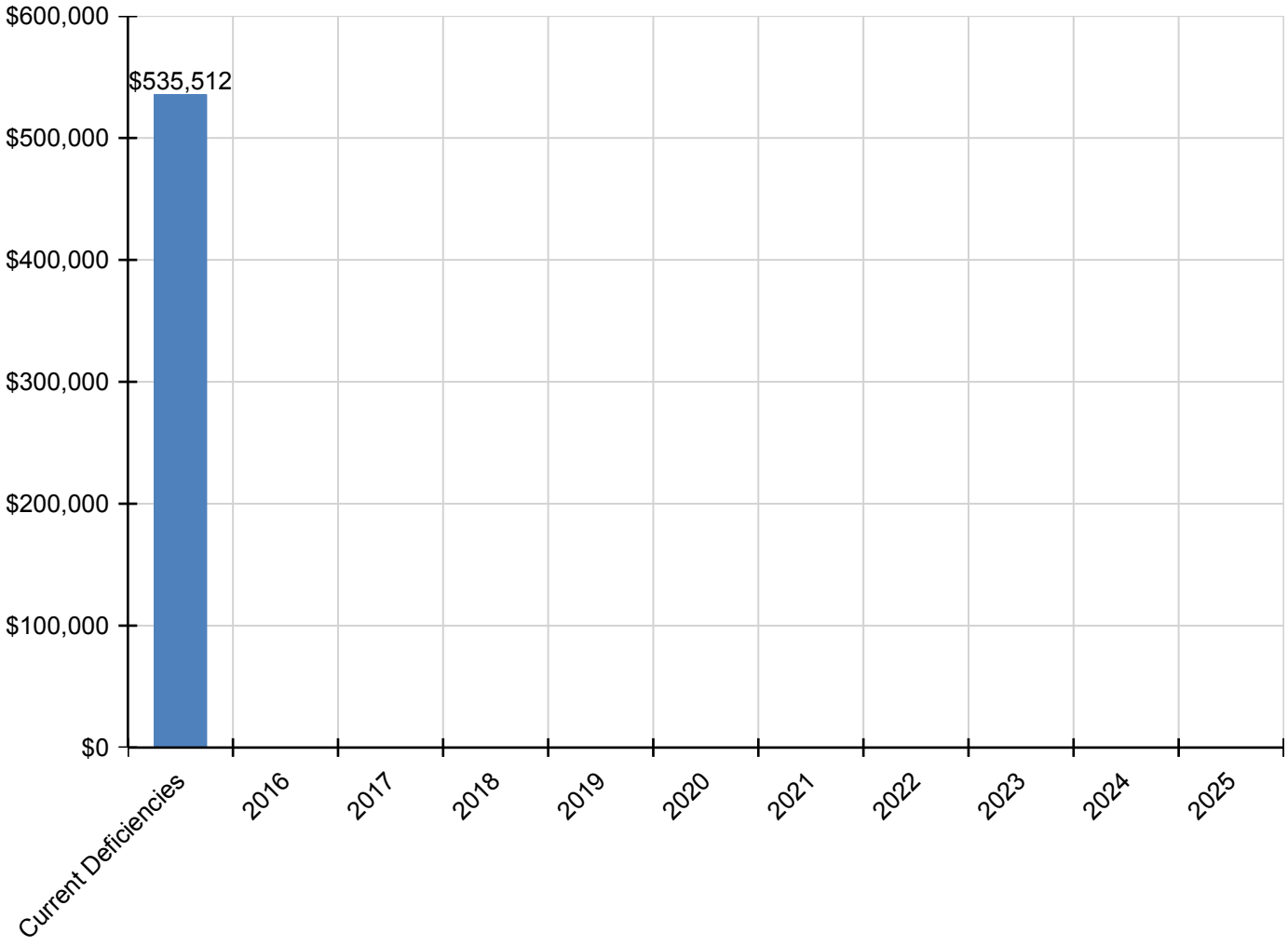
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$535,512**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$535,512**
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	$287,519	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$287,519**
G2030 - Pedestrian Paving	$196,618	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$196,618**
G2040 - Site Development	$45,189	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$45,189**
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	$6,186	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$6,186**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

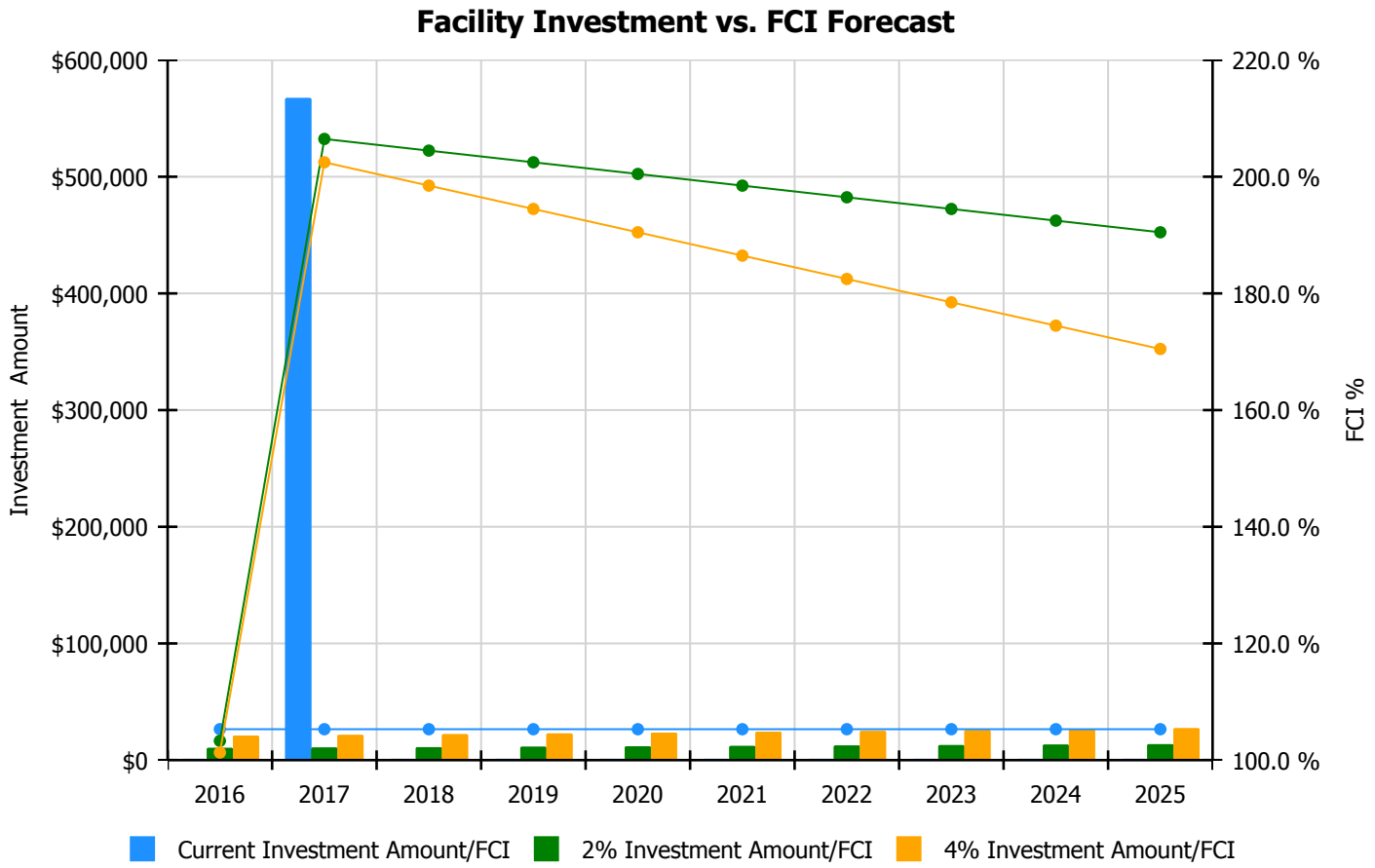
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

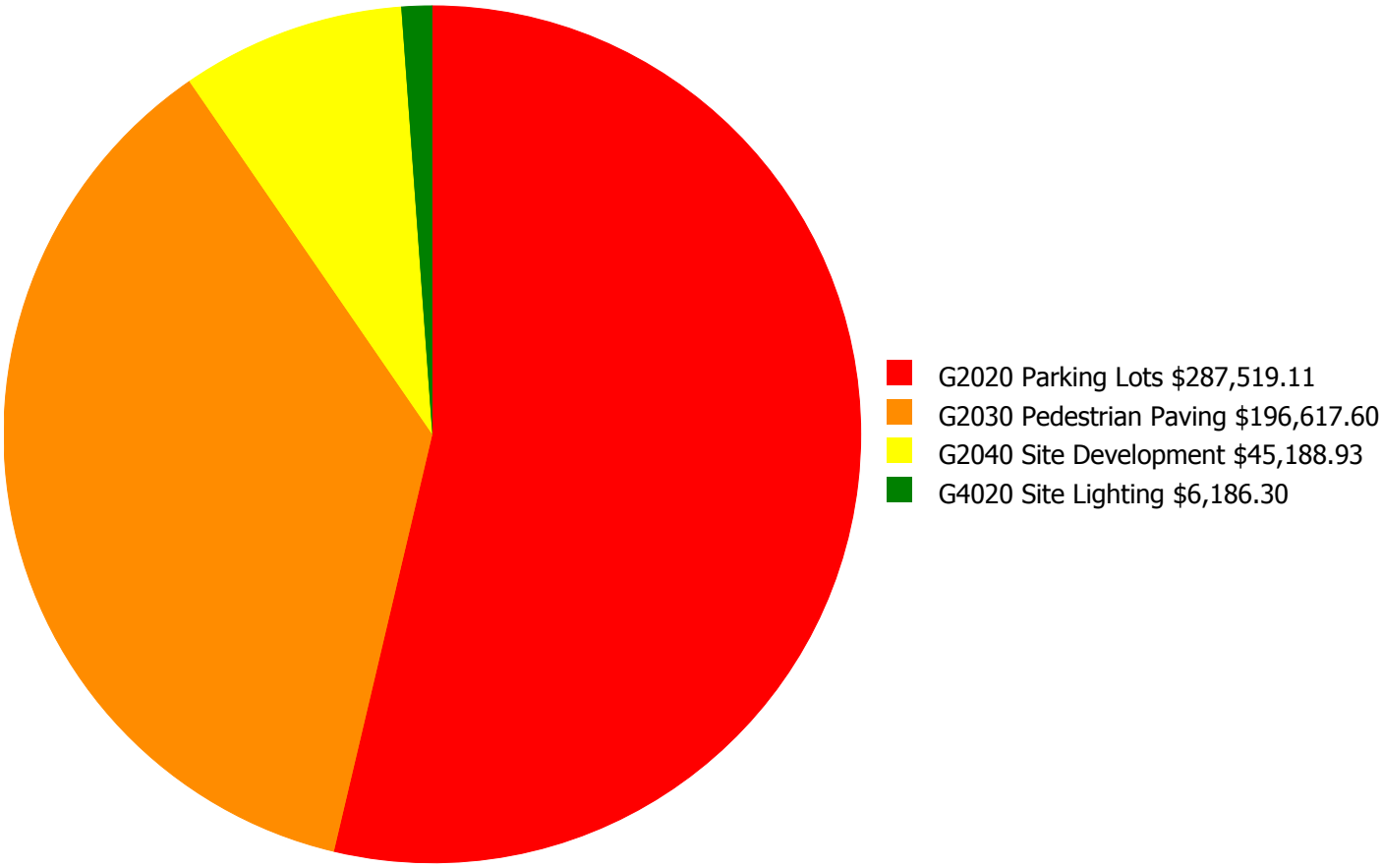
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 105.3%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$10,476.00	103.30 %	$20,953.00	101.30 %
2017	$567,449	$10,791.00	206.47 %	$21,581.00	202.47 %
2018	$0	$11,114.00	204.47 %	$22,229.00	198.47 %
2019	$0	$11,448.00	202.47 %	$22,896.00	194.47 %
2020	$0	$11,791.00	200.47 %	$23,582.00	190.47 %
2021	$0	$12,145.00	198.47 %	$24,290.00	186.47 %
2022	$0	$12,509.00	196.47 %	$25,019.00	182.47 %
2023	$0	$12,885.00	194.47 %	$25,769.00	178.47 %
2024	$0	$13,271.00	192.47 %	$26,542.00	174.47 %
2025	$0	$13,669.00	190.47 %	$27,338.00	170.47 %
Total:	**$567,449**	**$120,099.00**		**$240,199.00**	

Deficiency Summary by System

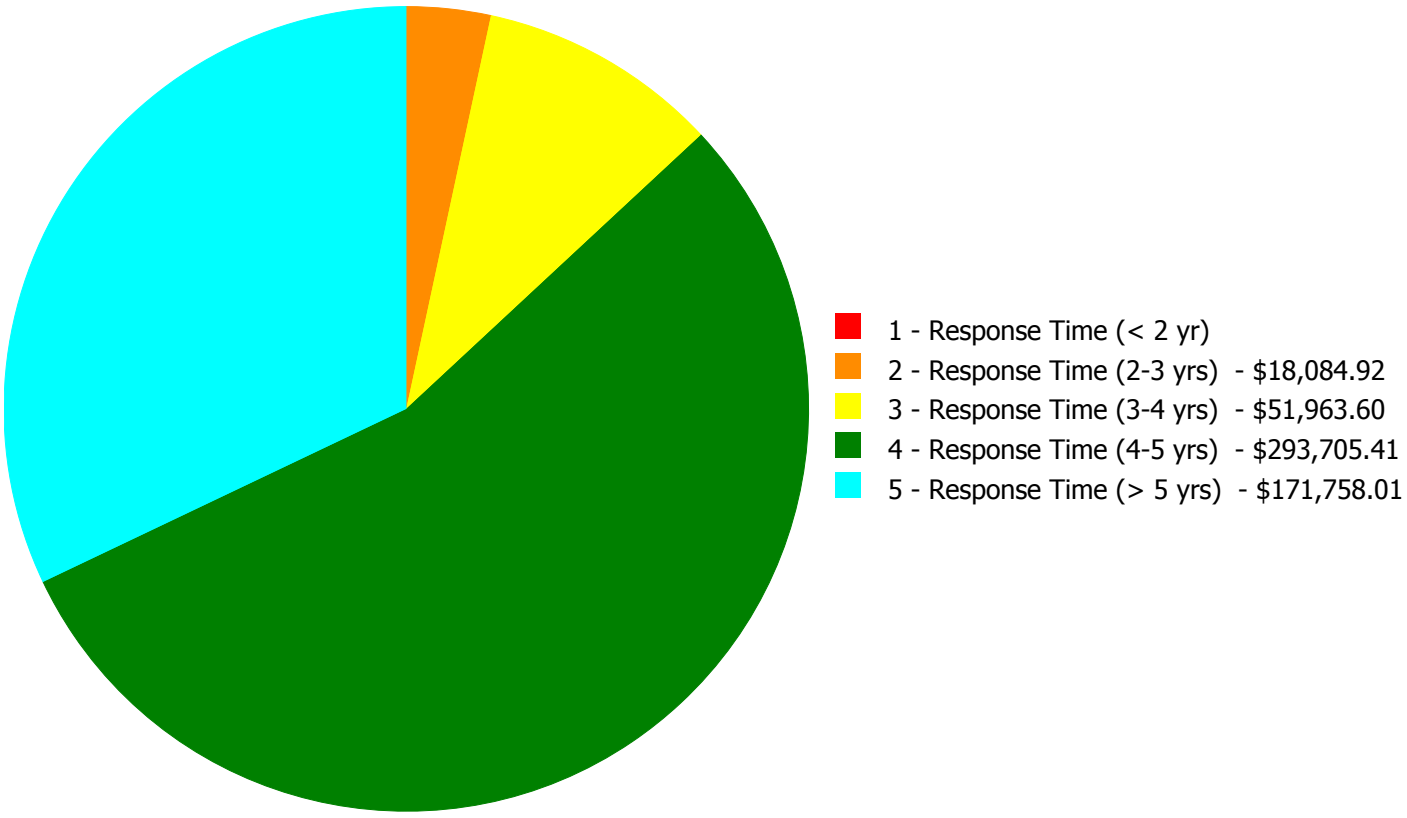
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $535,511.94

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: $535,511.94

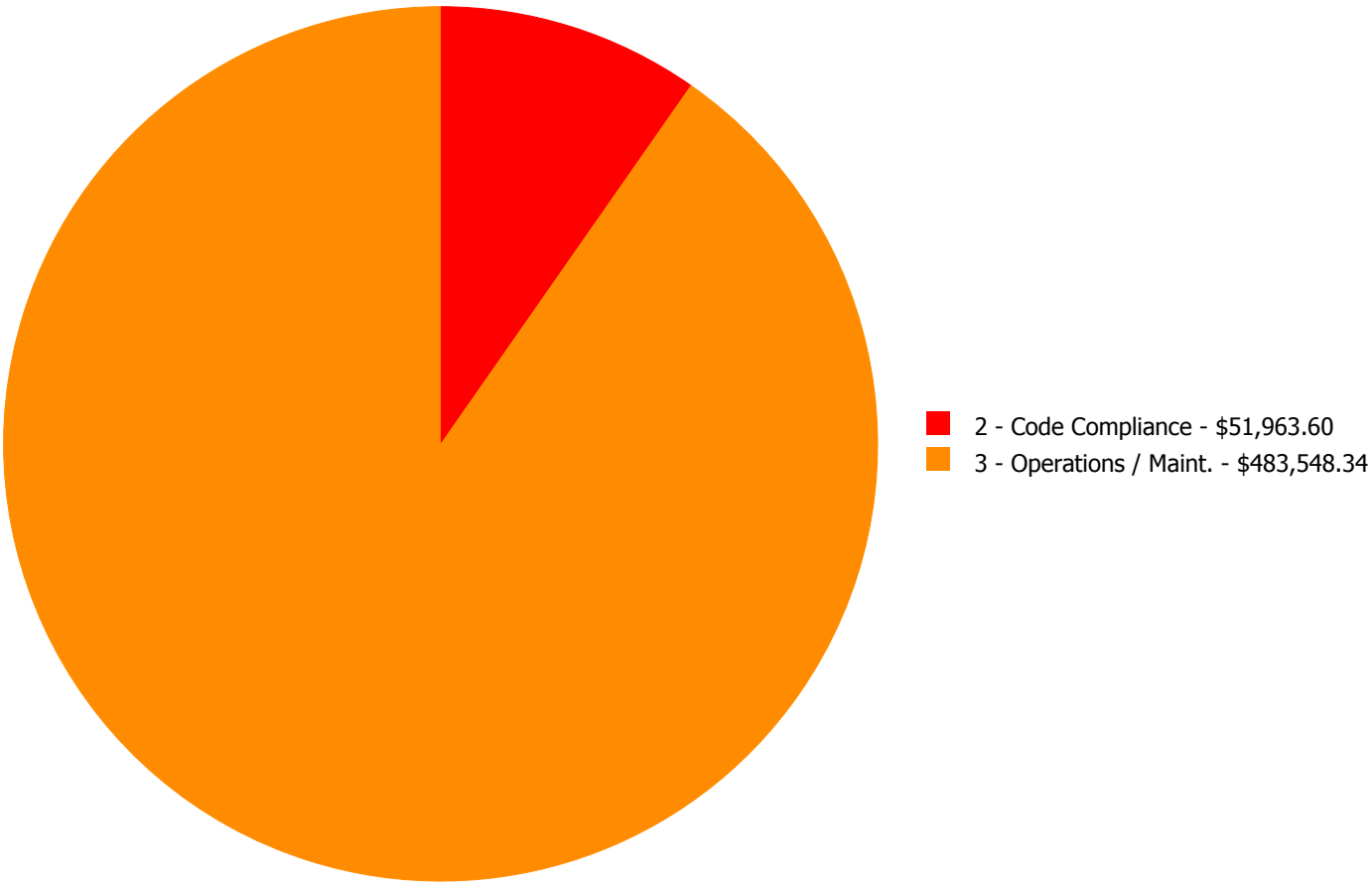
Deficiency By Priority Investment Table

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	$0.00	$287,519.11	$0.00	$287,519.11
G2030	Pedestrian Paving	$0.00	$18,084.92	$51,963.60	$0.00	$126,569.08	$196,617.60
G2040	Site Development	$0.00	$0.00	$0.00	$0.00	$45,188.93	$45,188.93
G4020	Site Lighting	$0.00	$0.00	$0.00	$6,186.30	$0.00	$6,186.30
	Total:	$0.00	$18,084.92	$51,963.60	$293,705.41	$171,758.01	$535,511.94

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: $535,511.94

Deficiency Details by Priority

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

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

System: G2030 - Pedestrian Paving

Location: Grounds/ Site

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace sidewalk or surface mounted hatch including remedial work to waterproof the framework for the hatch

Qty: 1.00

Unit of Measure: Ea.

Estimate: $18,084.92

Assessor Name: Wlodek Pieczonka

Date Created: 09/03/2015

Notes: Rebuild sidewalk window wells and replace failing sidewalk access hatch (see plumbing for drainage)

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

System: G2030 - Pedestrian Paving

This deficiency has no image.

Location:	Grounds/ Site
Distress:	Accessibility
Category:	2 - Code Compliance
Priority:	3 - Response Time (3-4 yrs)
Correction:	Install an exterior ADA ramp - based on 5' wide by the linear foot - up to a 48" rise - per LF of ramp - figure 1 LF per inch of rise
Qty:	40.00
Unit of Measure:	L.F.
Estimate:	$51,963.60
Assessor Name:	Wlodek Pieczonka
Date Created:	09/03/2015

Notes: Provide ADA compliant ramp at one entrance (location TBD)

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

System: G2020 - Parking Lots

Location: Grounds/ Site
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Remove and replace concrete paving
Qty: 13,500.00
Unit of Measure: S.F.
Estimate: $284,125.18
Assessor Name: Wlodek Pieczonka
Date Created: 09/03/2015

Notes: Resurface parking area; provide new striping incl. ADA spaces and aisles

System: G2020 - Parking Lots

Location: Grounds/ Site
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Resurface parking lot - grind and resurface including striping
Qty: 13,500.00
Unit of Measure: S.F.
Estimate: $3,393.93
Assessor Name: Wlodek Pieczonka
Date Created: 09/03/2015

Notes: Provide new striping incl. ADA spaces and aisles

System: G4020 - Site Lighting

Location: Grounds/ Site

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Maintain Site Lighting Fixture

Qty: 0.00

Unit of Measure: Ea.

Estimate: $6,186.30

Assessor Name: Wlodek Pieczonka

Date Created: 08/17/2015

Notes: Replace site lighting fixtures.

Priority 5 - Response Time (> 5 yrs):

System: G2030 - Pedestrian Paving

Location: Grounds/ Site

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 8,800.00

Unit of Measure: S.F.

Estimate: $126,569.08

Assessor Name: Wlodek Pieczonka

Date Created: 09/03/2015

Notes: Resurface playground

System: G2040 - Site Development

Location: Grounds/ Site

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace chain link fence - 8' high

Qty: 350.00

Unit of Measure: L.F.

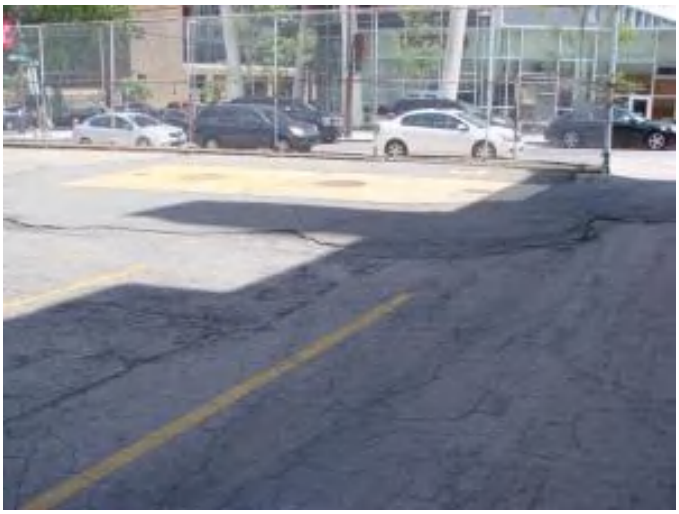
Estimate: $39,195.73

Assessor Name: Wlodek Pieczonka

Date Created: 09/03/2015

Notes: Replace chain link fence at parking/play ground perimeter

System: G2040 - Site Development



Location: Grounds/ Site

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $5,993.20

Assessor Name: Wlodek Pieczonka

Date Created: 09/03/2015

Notes: Replace parking entrance gate

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