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.

Cooke School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	1300 W. Louden St.	Enrollment	483
	Philadelphia, Pa 19141	Grade Range	'00-08'
Phone/Fax	215-456-3002 / 215-456-3185	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Jaycooke	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	**48.92%**	**$28,935,062**	**$59,142,966**
Building	48.86 %	$28,567,794	$58,466,246
Grounds	54.27 %	$367,267	$676,720

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	02.03 %	$40,899	$2,016,600
Exterior Walls (Shows condition of the structural condition of the exterior facade)	02.97 %	$129,071	$4,340,616
Windows (Shows functionality of exterior windows)	170.24 %	$3,605,550	$2,117,976
Exterior Doors (Shows condition of exterior doors)	90.73 %	$154,718	$170,520
Interior Doors (Classroom doors)	186.91 %	$771,520	$412,776
Interior Walls (Paint and Finishes)	28.32 %	$412,939	$1,458,276
Plumbing Fixtures	49.79 %	$791,646	$1,589,952
Boilers	00.00 %	$0	$2,195,592
Chillers/Cooling Towers	65.60 %	$1,888,585	$2,878,848
Radiators/Unit Ventilators/HVAC	158.31 %	$8,003,618	$5,055,624
Heating/Cooling Controls	265.35 %	$4,212,762	$1,587,600
Electrical Service and Distribution	49.14 %	$560,551	$1,140,720
Lighting	49.38 %	$2,013,717	$4,078,368
Communications and Security (Cameras, Pa System and Fire Alarm)	63.64 %	$972,151	$1,527,624

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

S710001;Cooke

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):	117,600
Year Built:	1923
Last Renovation:	
Replacement Value:	$59,142,966
Repair Cost:	$28,935,061.56
Total FCI:	48.92 %
Total RSLI:	73.60 %

Description:

Facility Condition Assessment

December 2015

School District of Philadelphia
Jay Cooke Elementary School
1300 W. Louden Street
Philadelphia, PA 19141

117,600 SF / 526 Students / LN 07

Jay Cooke Elementary School is located at 1300 Louden Street. The main entrance faces Louden Street. This school was constructed in 1923, has 117,600 square feet, and is 3 stories tall. There is a basement under the south side of the building, on the W. Mentor Street side. At the time of inspection, a brick pointing and limestone repair project was underway. This building was originally designed as a junior high school, as can be seen on the limestone plaque on the building and in the Historical Register listing. The Jay Cooke Junior High School can be found on the National Historical Register, number 88002259 with the address of 4735 Old York Road. Greg Mirakian, the Assistant Building Engineer accompanied the team during the building inspection.

The inspection team met with Principal Michael Ried at the time of field inspection. In particular, he indicated that the toilet room exhaust fans do not work creating terrible odors in the toilet rooms and the surrounding areas. The gymnasium floors are cracked and peeling; lighting in the gymnasiums is not adequate. Many radiators do not have covers and they get very hot. Windows are difficult to open, slam closed and are leaky.

ARCHITECTURAL/STRUCTURAL SYSTEMS

Foundations in the boiler room (basement) appear to be constructed of concrete and brick. Joints are in good condition with no major settlement cracks observed in any area except the south wall along the outside area way. There is some peeling paint and joint cracks observed on the inside of the south wall. Block joints are failing around the windows facing the area way and cracks are developing where the overhead concrete walkway attaches to the building. Outside in the area way, the concrete wall has substantial erosion under the overhead walkway connection, exposing most of the reinforcing rods in a fully rusted state. Other areas of the wall are cracked and spalling on both sides of the areaway. Footings were not seen and their construction type or condition could not be ascertained.

Floor slabs in the boiler room are dirty but in good condition. Outside the boiler room, basement slabs are in good condition without any major cracks or settlement. Upper floor slabs are also constructed of cast-in-place concrete with cast-in-place concrete beams. Columns, beams and floor deck above also appeared to be in good condition. Substantial amounts of cracking and spalling of the concrete walls, undersides of floor deck and the structure was observed in the outside fire stair towers but not in any interior building spaces.

Roof construction is a complex system of flat, minimum overall slope areas and low-slope pitched areas between walls and adjacent higher flat-roof areas, similar to Harding in overall design. The building is shaped like a square "O" with all spaces inside the "O" filled with buildings having different roof heights. This type of building design creates many pockets, walls with roofs terminating against them, troughs against walls for water collection and areas of potential leaks. None of the roofs or low areas have overflow or secondary storm drains; when one drain gets clogged with debris, the area floods; since there are so many blocked areas, there is a high probability that leaks will occur. The roof superstructure is constructed of reinforced concrete columns, beams, and floor slabs. The roof over the main classroom section (perimeter "O") of the building is also constructed of reinforced concrete beams and deck, bearing on masonry walls with a flat roof and minimum pitch to roof drains. Roof drains are located at low areas of the roof in the center areas of the rectangular "O"; there are no dished areas around the roof drains, but the deck has enough slope to direct the water towards the drains and away from the parapet walls. Access to the main "O" roof is via a door out of a brick penthouse. Access to other lower roofs is somewhat difficult, requiring the use of portable ladders to climb down to the lower roofs, or by climbing out through windows adjacent to the lower roofs. The girl's gym on one side and the boy's gym on the other side have somewhat steeper roof pitches, draining to lower sloped roofs which drain to troughs along another wall adjacent to a center section (the auditorium). Gymnasium roofs are supported by custom-designed steel trusses consisting of riveted sections creating the raised clerestory glazed sections on two sides of each gym, under the edge of the higher roof element; these complex trusses have many areas of rust especially at the bottom sections and need to be repaired to avoid losing load carrying capacity. The drain troughs on the sides under the clerestory glazing have internal roof drains to internal piping through the gymnasium spaces below to the storm system underground. When inside both gymnasiums, leaks can be seen around the trough drain penetrations; roof drain systems in the troughs should be re-installed for proper drainage. This complex roof arrangement creates many cavities, troughs against walls, and low areas that can trap water, snow, leaves, and debris; they also create many areas of potentially poor drainage and high probability for leaks. The cascading low areas also will trap and hold ice in winter months that can cause freeze-thaw damage to roofing and adjacent building walls. Frequent and diligent maintenance is required to keep this system draining the collected water.

Exterior brick walls and lintels on the outside of the building facing the street are generally in good condition. It appears as if many areas have been repointed. A brick pointing and limestone repair project was underway at the time of inspection. The upper and lower limestone cornices, entrance limestone elements, and brickwork need to be power washed to remove years of dirt and grime. Some of the brick masonry walls facing the inside of the "O" were repointed at one time; other areas were given a thick coat of paint or waterproofing on the exterior. New cracks are forming in brickwork on these walls and a substantial amount of peeling and spalling is happening to the coating applied to the brick. Water seepage on the third floor corridors can be seen, evidence that moisture is getting into these wall either through the brick, around the windows, or from above. The best solution to the condition of the brick facing the inside of the building may be to remove all coatings and repoint all walls that were coated. A waterproofing compound might be required to further protect the porous bricks. The steel emergency exit stairway security gratings set into the brick enclosing the two sets of rear fire stairs were recently repainted and in good condition at the time of inspection. The top of the furnace flue has cracks and needs to be pointed.

The exterior element of most serious concern is the concrete wall that forms the window well along the West Mentor Street side of the building. This concrete wall has a substantial amount of spalling and cracking. A raised concrete walkway with brick walls serving as guards (instead of aluminum handrails and guards) spans the recessed area way allowing access to the kitchen from W. Mentor St. This concrete "bridge" has lost a great deal of concrete material underneath, exposing reinforcing rods and appearing to be to the

point of failure at any time. The brick walls on the sides of the access bridge from the street to the kitchen are also cracking and leaning. The building wall on the opposite side of the area way is also cracking, spalling, crumbling and failing, exposing all vertical and horizontal reinforcing rods underneath the raised walkway bridge. The lintels supporting the brick wall over the louvers and windows into the boiler room are rusting. The steel stair up from the base of the area way to the street is heavily rusted and might not be safe to utilize. The area drains at the bottom of the area way might be clogged as evident from debris in and around the drains. Since the bridge is the only from the street into the building, the bridge, concrete retaining wall and building wall systems need to be repaired immediately before collapsing into the window well.

Exterior windows were replaced in the 1990's (approximately) with dark bronze anodized aluminum frame operable single hung units with double pane insulated glazing. Windows are in poor condition are difficult to operate, do not stay open slamming closed, and leak cold air in the winter. Clerestory windows in the gym have electric motor operators that are not functioning. Plexi glass vision panels in these windows is getting so cloudy that it is difficult to see out of some windows. All windows should be replaced with new insulated glass units.

Exterior doors are painted steel framed flush hollow metal units with steel frames. The main entrance has a classical 4 column colonnade portico locate at the second floor level, above a covered entrance into the building. Secondary entrances around the building have limestone accents panels and decoration details around the door openings. Side doors and main entrance doors are hollow metal with steel frames and have narrow lite vision panels. Doors are in poor condition, have broken or non-functioning panic hardware, rusted dented panels and door frames, and are not ADA compliant. All doors and hardware should be replaced. There is a wheelchair accessible ramp and handrail into the rear entrances to the west of the rear fire stair tower.

Roof covering on the main building flat roof is a fully adhered rolled asphalt sheet. The membrane and flashing appear to be old but in good condition; no leaks have been reported. There were no areas of cracking observed along flashing set into brick or at the base of mechanical equipment. Roof openings include toilet room vents, ventilation ductwork, and roof drains. Brick rooftop structures, brick parapets, and ventilation fan structures are flashed with the same roofing membrane material. Low parapets less than a foot in height are also flashed full height with the asphalt membrane. Taller brick structures and building walls with roofing terminations have aluminum counter flashing attached to the brick, counter flashed, and sealed with caulking along the top edge. Despite the apparent water tightness of roofing and roof structures, there is evidence of water damage on outside and inside of the third floor walls. Water might be seeping in from under coping or through cracked bricks just under the coping. Water could also be seeping in through the inside of old gravity vents. Large dark dirt/mildew areas can be seen around some roof drains, indicating pooling water that is evaporating instead of draining into roof drains. It is possible that roof drains are clogged. Inspection of all penetrations, coping, and flashings should be conducted. All roof drains should be cleaned out to improve drainage.

Partitions in basements are constructed of brick masonry and concrete. The upper 3 floors of the building have a plaster finish which is thought to be applied on wood or terra cotta lath or directly on masonry partitions. Corridors and toilet rooms have marble wainscots in good condition. Between some classrooms are manually operated full height wood folding partitions. It appears that some of these moveable wall systems are still operational, although their stability before and after opening could not be determined and nobody opens the walls. They are very heavy, rolling mechanisms may not work well and could fail since they have not been used for years. The movable partitions do not provide good sound attenuation between classes. Folding wood partitions are covered with staples and small gouges. Movable partitions that are unstable should be removed and replaced with sold partitions; others that are stable do not need to be removed, as long as the lack of sound attenuation is not an issue. In some third floor corridor locations on the inside of the "O", peeling ceiling and wall plaster could be seen. Exterior walls should be inspected and repointed, roof drains should be tested to determine if leaks are occurring around the outside of the housings, and coping should be re-installed. Leaks seem to be occurring on interior facing walls, not exterior street facing walls.

Interior doors are either the original oak wood and plate glass (not fire rated or wired) raised panel doors with replacement hardware or replacement wood doors with narrow lite wired glass vision panels and replacement hardware at least 20 years of age. Many of the original wood doors have damaged panels, broken glass, and broken hardware. Some interior basement doors and most interior stairway doors are hollow metal or steel panel doors in metal frames. Stairway doors are full wired glass which does not comply with today's building codes, exceeding the allowable size of wired glass in fire rated doors. Many steel doors and frames are rusted where coming in contact with floors, due to cleaning solutions corroding the frames. Doors are generally in poor condition throughout the building, are not ADA compliant, do not have ADA or proper locking hardware, do not positively latch (they do not have panic or latching hardware) as required of fire rated doors and do not comply with the code required fire rating requirements as stated by today's codes. Existing corridor doors do not have security locking feature that permits locking from inside classrooms in a security lock-down situation. Some of the newer wood doors that have replaced old doors can be refinished and reused where not heavily damaged, but steel stairway doors and all original wood doors need to be replaced with positively latching fire rated doors with approved fire rated glazing. All door hardware needs to be replaced.

Interior fittings/hardware include black slate chalkboards with oak chalk trays or bulletin boards integral to the original dark oak folding wall partitions built into the folding panels or mounted on plaster walls. Most have chalk boards and tack boards mounted onto

the panels. White boards should be provided to replace old blackboards and chalk. Some toilet rooms have new solid plastic HDPE (high density polyethylene) replacement partitions and doors. The older toilet partitions are marble with wood door or no doors. Toilet room accessories (toilet paper dispensers, soap, paper towel or dryers, grab bars, door latches) have been recently replaced in most toilet rooms, however some components are missing and others are not fully functional. Marble and wood toilet partitions should be replaced with HDPE partitions. As the old toilet partitions are replaced, a review of the condition and possible replacement of toilet fixtures should be considered and the available space at each toilet fixture should be conducted. Additionally, provisions for accessibility should be made wherever possible. Missing and broken toilet room accessories should be replaced. The toilet rooms in the main entrance lobby have HDPE lavatory counters with stainless steel sinks but the original marble toilet partitions; they might be in good enough condition to remain as relics, if they are sturdy enough. Steel lockers line many corridors on each floor; they have the original factory painted finish and are in fair condition. Girls' and Boys' Cafeterias have folding portable plastic laminate table/chair units.

Stair construction throughout the building consists of concrete treads with steel nosings, concrete risers, and concrete stringers with wood handrails (29" high), guards (36" high), and steel balusters with 3" spacing. The two emergency egress stairs facing W. Mentor Street are constructed of concrete treads, risers, and stringers with steel handrails (29" high) and full height glass and steel walls between stair runs; steel mullions are covered with rust. Since handrail and guard heights are not in compliance with today's codes, new handrail and guard systems are required for all stairs. The exterior sections of the emergency exit stair enclosures are in very poor condition; concrete decks supporting floors or roof above are cracking and spalling with reinforcing bars exposed and roof drains beginning to fall out of the deck. Brickwork is cracking on all exterior surfaces. Doors and frames are rusted. The stairs themselves are in good condition in need only of cleaning and paint.

Wall finishes in the old building are plaster in most rooms. There is some minor cracking with surface crazing in isolated locations and minor damages typically in classrooms at doorways and corridors near corners. Corridors have a pink marble wainscot 60" tall on the lower section of wall, in good condition, but in need of cleaning at the bottom where coming in contact with the floor. There are areas of water damage on the third floor plaster walls facing the inside areas (inside of the "O"), due to water penetration from coping seepage, roof leaks, or lintel leaks. Stained wood trim in all rooms is damaged and worn but should be sanded, patched and refinished. Toilet room walls are painted plaster with the same pink marble wainscots as in the corridors. The auditorium has a painted wood wainscot and raised details on upper plaster walls. There are also decorative plaster details in the auditorium lobby and open stairway down to the main lobby. Minor damages were seen in the decorative plaster pilasters and decorative wood classical architectural elements should be repaired and repainted. The main building entrance is a two story space with white marble wainscots, white marble stairs, and light terrazzo floors. There are some minor chips in the marble, but generally the lobby and queueing area outside the auditorium is in good condition. In the auditorium and backstage, there are a number of wall and ceiling areas that have been damaged from water leaks, coming from the trapped wall/roof areas previously discussed in the roof discussion. Assuming these leaks have been addressed after roof and wall repairs, the auditorium plaster should be repaired. The two separate cafeterias (designated boys and girls) and the common kitchen have glazed brick wainscots, and painted brick upper sections, all in good condition only requiring a good cleaning at the base where coming in contact with floors. The gymnasium walls are also finished with a glazed brick lower section and painted brick upper section. The East Coast gym has large areas of walls damaged from roof leaks from the drainage troughs on both sides of the gym. Brick walls are also cracked under some of the beams. The West Coast Gym is also damaged under the troughs, but only in the localized roof drain area. Troughs and roof drains need to be repaired to prevent further wall damage in the gyms.

Floor finishes in the building consist of dark stained oak floors in classrooms and the auditorium. Wood floors are generally in good enough condition to be stripped, sanded, and refinished; some planks will need to be replaced as they are warped or broken. Some classrooms have VAT (vinyl asbestos tile) or VCT (vinyl composition tile) and the cafeterias and kitchen have VAT. Classrooms, cafeteria, kitchen, and other rooms with either 12"x12" or 9"x9" VAT over wood are worn, have damages and cupping edges; (the 12"x12" tiles could be VCT). The floor tiles should be tested for the presence of asbestos. If present, the tiles should be removed using proper asbestos abatement procedures and replaced with 12"x12" VCT. The 12x12 tiles are vinyl VCT tiles, they should be removed and replaced with new VCT. Resilient seamless vinyl flooring is used in the gymnasiums. The gymnasium floors have holes and cracks and are worn; these floors should also be replaced with new seamless vinyl flooring. All corridor floors are finished with 2'x2' (nominal size) sealed concrete tiles which appear to be a monolithic system and highly durable. Edges along the walls are painted; these corridor floors have not recently been stripped and cleaned and have years of dirt sealed into the surface and corners, causing their color to be very dark and dingy. There is an especially large build-up of dirt at all corners. The lobby floors are finished in terrazzo on first and second floors. The two open lobby stairways are white marble. These floors are in excellent condition, are extremely durable, and have no visible damages. Toilet room floors are exposed concrete with a sealed floor finish. These floors are very dirty; a thorough cleaning and resealing of these floors is required.

Ceiling finishes are mostly 2x4 suspended acoustical tile ceiling system with recessed 2x4 fluorescent lighting fixtures throughout the building. Most 2x4 ceilings and lighting fixtures are aging, in poor condition, and should be replaced. The auditorium and the auditorium lobby has a plaster ceiling with decorative cornice elements and moldings, in good condition. The boys and girls gymnasiums have exposed structural joists and concrete deck ceilings. The paint on the trusses is old; the trusses should be

repainted to protect them from moisture in the air. The cafeterias have 12"x12" concealed spline ceiling tiles; they area old and look like they are beginning to fall down. Cafeteria ceilings should be replaced.

Furnishings in the building include the original folding wood seating in the auditorium which is still in use. Many of the 400 (approximate number) seats need to be repaired to operate properly and many are scratched; most are damaged in appearance and many do not work properly. The broken seating should be repaired and the worn seating should be refinished. Casework and storage cabinets in the classrooms and the office is damaged, worn and needs replacement. Student lockers throughout the building appear to be in good condition; approximately half need to be repainted.

There is a 3000 lb. 3 stop elevator present in this school. It is reported to be operating with minimal breakdowns. The cab should be refreshed with the latest ADA accessibility features such as lower button panels, chimes, floor numbers on jambs, and visual, audio, and tactile call notifications.

MECHANICAL SYSTEMS

Plumbing Fixtures – The building is equipped with wall hung urinals (flush valve type), wall hung water closets (flush valve type), and wall hung lavatories with wheel handle faucets, of which many of the original plumbing fixtures remain in service. The fixtures are part of the original building construction of 1923 and should be replaced with water efficient fixtures. Some bathrooms were equipped with floor drains while others were not.

Within some areas of the school the drinking fountains have been upgraded from the original fixtures to stainless steel drinking fountains, however, there are many original drinking fountains that remain in use in the building, such as the gang drinking fountains. The original drinking fountains and any fixtures which have been replaced in the past, should be replaced with ADA compliant fixtures. . Most of the fixtures are part of the original building construction of 1923 and should be replaced as they are nearing 93 years old and have surpassed their service life expectancy. The Annex is equipped with high low ADA compliant drinking fountains.

Floor set mop/service sinks were not investigated during the survey. The Cafeteria's food prep/kitchen is equipped with one, two compartment stainless steel sink, with wheel handle operated faucets. There is no grease interceptor. The kitchen is also equipped a hand sink. The double compartment sink show signs of normal usage. Chemicals are injected manually into the sanitizing basin.

Domestic Water Distribution – There is a 4" water service which supply domestic water to the building which enters the main boiler mechanical equipment room. The service is equipped with a backflow preventer (RPZA – reduced pressure zone assembly) and a by pass assembly. It appears that the 4" domestic water service piping is mostly soldered copper. There is a 3" water meter on the service. There are two vertical type natural gas fired water heaters, AO Smith model BTR365A 118 Master Fit , input 365,000 btuh,, rate of recovery 353.93 gallons per hour which serve the facilities restrooms with domestic hot water supply. The water heaters were installed in 2008 and should be replaced within the next 5- 7 years. All water heaters are located in the boiler mechanical equipment room. The hot water system are not equipped with recirculation pumps or expansion tanks, however they are fitted with pressure/temperature relief vents.. A water softener was located in the boiler room for treating the boiler make up water system. The water softener system appears to have been installed recently and should not be replaced at this time.

Sanitary Waste - The sanitary waste piping system in the Main Building is extra heavy cast iron with lead and oakum seals and appears to be the original piping installed in the building. It is therefore recommended to inspect this piping and repair or replace sections as needed. The sanitary system leaves the building by gravity.

Rain Water Drainage - The rain water drains from the roof are routed through mechanical chases in the building and connect to the underground site drainage system. There are no secondary drainage scuppers for the roof. Some roof areas are served by downspouts. Foundation drainage is handled by a sump pump in the lower section of the main boiler mechanical equipment room.

Energy Supply - Duplex fuel oil supply pumps provide the required fuel to the boilers when operating on fuel oil. There is one, 18,000 gallon, fuel storage tank is located below ground at the rear of the school in the drive aisle between the tennis courts and the building. The fuel pumps and controls appear to have been replaced within the past ten years and should not be replaced for 10 – 15 years. A 2" natural gas service enters the building by the office. The natural gas main is welded, black steel piping while the branches are threaded, black steel.

Heat Generating Systems – Low pressure steam is generated at 15 lbs/sq. in. or less by two 3,592 MBH (400 HP), HB Smith, cast iron, sectional , model 4500A-S/W-14, steam boiler. The three steam boilers serve the heating needs for the building. According to the building engineer two boilers are used on the coldest days of the year to meet the heating demands. All boilers are equipped with Power Flame, model LNIAC5-G0-30, low NOX, dual fuel, natural gas and number 2 fuel oil Burner controls provide full modulation with

electronic ignition and digital flame sensing and pressure atomization on oil. Burner oil pumps are driven by independent motors. The boilers appear to have been installed to years ago and will not need to be replaced for 15 – 20 years. There is an Auburn fan for induced draft control on all of the boiler flues. Combustion air louvers serve the boiler room to provide combustion air for the boiler operation. The combustion air dampers/louvers are equipped with electric actuators. Burner oil pumps are driven by independent motors. The gas train serving each boiler appears to have code required venting of the regulators and dual solenoid valves with venting of the chamber between. The oil supply to the burner is equipped with dual solenoid valves and strainer/disposable media filter. In the kitchen, a suspended, steam to heating water tube and bundle heat exchanger produces heating water for an unknown source.

Cooling Generating Systems – There are a few area which have window air conditioning units, but predominantly the building does not have cooling systems.

Distribution Systems – The building steam distribution piping is black steel with welded fittings. The condensate piping is Schedule 80 black steel with threaded fittings. The Annex building heating water distribution piping is black steel, schedule 40 with welded fittings. The piping which has not been replaced as part of the most recent boiler renovation, has been in use beyond its service life and will require more frequent attention from the maintenance staff to address pipe/valve failures as time passes, however, according to the building engineer there have not been significant problems with steam trap failures. The District should hire a qualified contractor to examine the steam and heating water distribution piping and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping beyond the mechanical room over the next 5 years.

The boiler feed water is collected by a boiler feedwater pad mounted system and is treated with a combination of chemicals by a water treatment controller. There are four condensate return receivers for the steam system as well, which pump back to the feedwater system. The condensate return piping is black steel with threaded joints. The boiler feedwater assembly is equipped with four pumps and a pump control panel which were installed as part of the boiler replacement in 2005. It is recommended that the District conduct a steam trap survey to determine the quantity and condition of all steam taps. The boiler feed tank, pumps and associated components are do not need to be replaced at this time, as they appear to have recently been replaced within the past 10 years and have approximately 20 -25 years of service life remaining.

The building uses steam radiators for heating in the classrooms. . The classrooms are also provided with relief air transfer ducts which to the corridors where the air is then relieved through foul air relief risers located in the corridors from the air which is provided to the space from the house fan. Ventilation and additional heating for the building was provided by two house fans in the basement which is operational but is not used. The air was pushed into the various rooms of the building through ducts built into the walls. The air was exhausted from other ducts built into the walls, up through the attic space, and out through roof mounted vents. Additional fresh air is admitted into the building through the unit ventilators and by opening windows. In the past, the auditorium is served by the house fans equipped with steam heating units with outside air for ventilation. Air is distributed from mushroom diffusers located below the seating in the space. Return air grilles are located along the side of the auditorium walls as well as at the point of entry to the space. The space is now served by a York Solutions units, AHU-1. Although this unit has been recently installed, Recessed steam convection heat is also used in the space and should be replaced. It is recommended to replace these systems with a roof top mounted with heating and cooling unit with an overhead supply air distribution system and return air ductwork and low return intake grilles.

The two gymnasiums are served by the house fan systems which provide heating and ventilation The windows are operable and provide additional ventilation These units are part of the original building construction of 1923, are beyond their service life and should be replaced. It is recommended to replace these systems with a roof top mounted unit with an overhead supply air distribution system and return air ductwork and low return intake grilles which would be protected from damage.

The cafeteria is served by steam radiators and ventilation is provided by operable windows. The kitchen is equipped with one kitchen hood of which is served by a gas fired make up air, horizontally suspended. Proper air flow pressurization and balancing should be performed for the seating area with respect to the kitchen to maintain the kitchen under negative pressurization.

Terminal & Package Units - There are roof mounted exhaust fans which serve the restrooms. Entryways and stair landings/stairwells are served by recessed steam radiator units. Hallways are served with floor standing radiators. High windows have wall mount radiators located below the sill. A horizontal suspended fan coil unit with a steam coil serves the loading dock maintenance area. The bathrooms are served by wall mounted steam radiators. The kindergarten classes are served by steam convection units.

Controls & Instrumentation - The original pneumatic systems still provide basic control functions, however the air compressor is no longer utilized for the building control system. In the past, pneumatic room thermostats, the damper actuators and control valves. Wall mounted pneumatic thermostats on the corridor walls control the steam radiators. There is one, simplex air compressor which generated control air for the temperature control system which is located in the boiler room. The building control temperature control is manual by operating the boilers or shutting them down. Potential problems with oil, moisture or dirt in the pneumatic copper tubing

can be one source of problems prior to the use of the compressor being abandoned. The small rubber gaskets and tubing connections at control devices can become brittle over time and fail to compound control problems. The pneumatic systems are beyond their service life and require too much attention from the maintenance staff. The original control valves, dampers and pneumatic actuators are over 93 years old and should be 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 with the exception of the shops areas which is provided with a sprinkler system and an FDC connection. 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 kitchen hood exhaust system is equipped with an Ansul fire suppression system.

ELECTRIAL SYSTEMS

Site Electrical Service is from Medium voltage overhead lines on wooden poles along 13th St. One pit mounted utility transformer with medium voltage primary (Voltage level unknown at this time) and 208/120VAC secondary and at an estimated available power of 300 KVA is installed outside the building for supplying power to facility.

The service entrance equipment to the facility consisting of a disconnect switch and an utility meter is installed in a closet called L-Room, in the east part of the building. The main distribution switchboard which is feeding all lighting and power panels throughout the building is located in electrical room in the basement of the building. Two phase converters are installed in the boiler room; one is converting the 2-240V single phase power to 208V/120V for feeding the boilers, and the other is converting 2-240 single phase power to 480V, 3phase for feeding the water pumps. Existing switchboard is obsolete, unsafe and does not meet current codes thus requiring replacement.

Power distribution in the building is achieved through corridor located lighting and power panels. Each floor with four panel boards (two on Westside of the building and two on east side). All the panel boards along with the associated wiring have exceeded the end of their useful life and should be replaced.

Twenty percent of the classrooms are not provided with enough receptacles. Recommendation is to have a minimum of two receptacles on classroom walls but the current installations in those classrooms fall short of this recommendation.

The lighting fixtures in classrooms, offices, mechanical/electrical and boiler rooms have already been upgraded are in acceptable working condition. Gymnasium is illuminated by pendent mounted metal halide high bay lighting fixtures which also have high energy consumption and are difficult to re-lamp. Auditorium is illuminated by old ceiling mini pendant incandescent lighting fixtures. These fixtures are far exceeded their useful service life and should be replaced. Corridors, cafeteria and kitchen are utilized with various types of fluorescent lighting fixtures wit outdated T12 lamps and should also be replaced.

Building is equipped with an addressable manual fire alarm system. There are only eight notification devices are installed in the school. The system does not meet current fire alarm codes and should be replaced with n fully automatic fire alarm system.

The school telephone and data systems are new and working adequately. A main distribution frame (MDF) along whit a telephone PBX system (telephone within an enterprise that switches calls between enterprise users on local lines while allowing all users to share a certain number of external phone lines) along with several IDF (Intermediate Distribution Frame) located men and women service room and one LDF (local Distribution Frame) located in computer room servicing the communication system of the building. School also equipped with wifi system.

Separate PA system does not exist. School uses the telephone systems for public announcement. This system is working adequately.

Each classroom is provided by intercom telephone service. The system is permit paging and intercom communication between main office phone to classroom phones, and classroom to main office, classroom to classroom, and to office. Outside line access from a classroom phone through the PBX is blocked. The system is interfaces with master clock system for class change signaling utilizing paging speakers. The system also equipped with a tone generator and input from program/clock controller.

Present clock system is not working. School is provided with time system controller consisting of electric round clocks installed on the wall in each classrooms and a "SIMPLEX" master time programmer. The clocks are not controlled properly with the central master controller. System is old and has exceeded its useful service life thus requiring replacement. The present bell system is working

adequately.

Television System is not provided in the school.

Video surveillance system is not provided in the school. School provided only with security intrusion system such a door contacts on the main doors. The school desires a complete video surveillance system with cameras located in critical areas, such as exit doors, corridors, and building exterior areas. The cameras should be controlled by a Closed Circuit Television (CCTV) system.

Emergency Power System is provided in the school. A 30KVA, 240/120V, single phase, 3W diesel generator manufactured by Cummins is provided in Boiler room for emergency lighting. Emergency generator and emergency power distribution panel are old and not comply with recent safety code and both old and should be replaced.

Uninterruptible Power System (UPS) is provided for Local Area Network in the main IT room.

Emergency lighting system, including exit lights are provided in the buildings. Numbers of lighting fixtures in corridors are fed by emergency pack up generator. All exit signs are outdated and should be replaced. New exit signs shall be also fed by emergency power.

Lightning Protection System is accomplished with a few air terminals mounted on the chimney on the roof and connected to the ground system. Further study is needed to verify that the air terminals provide the proper coverage.

An estimated 20 horsepower rated hydraulic type elevator is in operation at the school. The elevator appears to be old and should be replaced.

Existing theater lighting and dimming system is accomplished with two rows of spot lights that are turned on and off by branch circuit breakers in a lighting panel located in stage area and not by dimmer. Theater lighting and controller are old and not meet the modern theatrical lighting system. In modern school auditorium, Stage requires front, upstage, high side, backlighting, scenery lighting and controllers by automatic dimmer bank controller. In addition to the stage lights, supplemental fluorescent lighting is also requires to be provided in stage area for lectures and testing. These supplemental lighting could be also turned off automatically by dimmer bank controls during performance.

Sound System in Auditorium is old and not comply with modern multipurpose auditorium sound system requirements recommended by ECE40020 (standard for reinforcement system design) and required to be replaced.

Site Lighting System is adequate. There are sufficient numbers of flood lights are provided around the building. However some lighting fixtures need to be repaired to make the system fully operational.

The exterior building and parking areas are not monitored by a video surveillance system.

Site Paging system is provided in the school and working adequately. Existing speakers are providing proper coverage in the playground.

GROUNDS

- Walkway paving in the front and side streets is constructed of 4'x4' (nominal) concrete panels. Some are in need of replacement and although they are not all contiguous, it may be possible to replace only those that are failing. Roughly 25% of the concrete panels in the concrete play area are also cracked and need to be replaced; the slabs under and around the dumpsters are damaged from the heavy loads of the garbage truck traffic crushing the concrete. Granite block stairways into the front and left side of the building are cracked and need pointing and regrouting. New handrails and guards are required at all stairs. An ADA accessible ramp is provided at a rear door but signage is needed to allow people to find the entrance. There is no on-site asphalt parking. Faculty, staff, and visiting parents must park on the street.
- Wrought iron fencing is almost totally rusted and needs repainting. There are some damaged and bent fence panels in need of replacement. The brick retaining wall along W. Mentor and N. 13th Streets is spalling, cracking and failing in many locations. The concrete bridge leading from W. Mentor Street into the building is failing as discussed in the Exterior Wall paragraph, above.
- **RECOMMENDATIONS**
- Remove failing concrete walk "bridge" with brick side walls over window well, replace with new structural slab bridge (500sf)
- Repair concrete area way retaining wall (100 ft x 8 ft tall)
- Repair basement wall over and around windows and louvers in area way (500 sf)

- Replace rusted stair from area way to grade level at W. Mentor Street (13 risers)
- Repair failing floor decks in fire exit stairways (300 sf)
- Replace 2 rusted fire stair (2 flights)
- Repoint cracks in parapet above counter flashing, masonry walls above roof, cracks in brick walls on facing inside of "O", and joints above and below limestone band (400 sf)
- Re-seal roof penetrations at gravity vents, plumbing vents and fans (assume 25 penetrations in roof)
- Reset gutter drains in troughs and reseal metal troughs (500 ft)
- Powerwash rear building wall and limestone band and below on front and sides of building (10,000 sf)
- Clean and repaint basement floor in mechanical rooms; clean and reseal concrete floors in hallways, stairways, and toilet rooms (47,000 sf)
- Replace all exterior windows (600 3.5 x 8)
- Replace all exterior doors and frames; also provide new exit hardware. (20)3x7
- Refinish all original wood interior doors, frames and hardware inside classrooms, closets, offices, etc. (40)
- Replace all original wood interior doors in hallways (120)
- Provide security hardware for classrooms and offices, locking from inside classroom. (120)
- Remove and replace all basement steel doors, frames, and hardware in mechanical rooms; fire rated doors with panic hardware for stairs (30) 3x7 doors
- Remove damaged and failing folding wood partitions; replace with gypsum board and metal stud walls (8) @300sf ea =2700sf
- Repair peeling and water damaged walls and beams under clerestory on high walls sill in gyms over boys and girls gymnasiums; repair/repaint water damaged and cracked plaster walls throughout the building (6,000sf)
- Remove and replace stairway handrails and guards with code compliant systems (6 stairways) x4 story; =50x24=1200lf
- Strip, sand, repair and refinish all wood floors in classrooms and in auditorium (37,600sf)
- Remove and replace all resilient vinyl gymnasium floors in boy's and girl's gymnasiums (8,000sf)
- Replace VCT floors (9,000sf)
- Replace VAT floors using proper asbestos abatement procedures if determined asbestos is present. (12,000sf)
- Replace 2x4 acoustical tile ceilings where damaged or where grid is rusted (89,600sf)
- Provide toilet room accessories where broken or missing (20 sets)
- Replace damaged marble and wood water closet partitions with HDPE plastic partitions (assume 20)
- Replace damaged folding wood auditorium chairs; 75% of total = 300
- Replace failing and non-code compliant handrails/guards on all site stairs both sides of each stair (40 ft handrails)

MECHANICAL

- Replace all lavatories in the building with lower flow fixtures, as the fixtures are original.
- Replace all water closets in the building with lower flow fixtures, as the fixtures are original.
- Replace all urinals in the building with lower flow fixtures, as the fixtures are original.
- 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.
- Add automatic sanitizing chemicals to the stainless steel sink in the cafeteria.
- Replace two vertical tank natural gas fired water heaters.
- Inspect and replace the original as needed the domestic water piping in the building
- 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.
- Conduct a steam trap survey to identify and replace failed traps passing live steam into the condensate piping system.
- Hire a qualified contractor to examine the steam and condensate piping in service for 93 years 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.
- Replace the steam convection.
- Provide 200 ton air cooled chiller.
- Replace the existing steam radiators throughout the building with new unit ventilators designed to provide adequate ventilation per ASHRAE Std 62. The new units shall be equipped with hot water / chilled water coils and integral heat exchanger.
- Provide ventilation, heating and cooling for the Gymnasium and lockers by replacing the existing heating and ventilating unit.
- Provide ventilation, heating and cooling for the Cafeteria by removing the existing steam radiators and heating and ventilating unit and installing a new modular constant volume air handling unit with heating, cooling, ventilation, distribution ductwork and registers.
- Provide ventilation, heating and cooling for the Auditorium by removing the house fan, air handler and steam convectors and installing a new modular constant volume air handling unit with heating and cooling.
- Replace the pneumatic controls for the HVAC systems with modern DDC modules, valves and actuators to improve reliability and energy efficiency.
- Provide a new building automation system (BAS) with communication interface to the preferred system in use throughout the

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

ELECTRICAL

- Upgrade existing service entrance by providing a new 1200A, 208/120V, 3PH, 4 wire switchboard.
- Replace the entire distribution system with new panels and new wiring/conduits. Provide arc flash label on the electrical equipments. Estimated 15 panel boards.
- Install minimum two receptacles in each wall of class rooms in Annex area. Total 50 receptacles.
- Replace all the lighting fixtures in classrooms, offices, cafeteria and kitchen with new fluorescent lighting fixtures with T8 lamp. Replace gymnasium illuminates with LED high bay. Estimated 15each. Replace auditorium lighting fixtures with LED down light fixtures.
- Replace existing fire alarm system with an automatic fire alarm system including smoke detectors in corridors and other recommended areas per NEC. Install horn/strobes in class rooms, corridors, offices, toilets, library and other recommended areas per codes.
- Provide an adequate video surveillance system including camera and Closed Circuit Television (CCTV) system. Cameras should install in the corridors, school entrance doors and on the walls around the building.
- Replace existing generator with new 30KW generator. Provide new 100A distribution panel board.
- Provide new modern stage lighting with automatic dimmer bank controller in the Auditorium.
- Provide new sound system per ECE-40020 (standard for reinforcement system design) including a freestanding 19" rack backstage with mixer per amplifiers, digital media recording with playback capability, AM-FM radio, graphic or parametric equalizer, and receivers for wireless microphone.
- Provide lightning protection studies to ascertain adequacy of existing systems.
- Replace existing clock system with wireless clock system.

GROUNDS

- Regrout joints between limestone block tread/risers at misc. exterior stairs (20 treads, 6 ft long)
- Repair/Reconstruct landscape retaining walls leaning and broken along W. 13th Street and playground area (approx. 200 ft of retaining walls 3 feet height)
- Repave 2000 sf damaged sections of concrete walkway along streets; repave 6000 sf concrete playground (8,000 sf total)
- Repave dumpster slab and access slab to dumpster area with vehicle-grade concrete (2,000 sf)
- Repaint rusted wrought iron fence surrounding site and along playground and raised walkway (1,600 ft length)

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 2
Status:	Accepted by SDP	Team:	Tm 2
Site ID:	S710001		

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	35.00 %	0.00 %	$0.00
A20 - Basement Construction	35.00 %	13.16 %	$297,803.33
B10 - Superstructure	35.00 %	2.05 %	$215,008.82
B20 - Exterior Enclosure	59.24 %	58.67 %	$3,889,339.13
B30 - Roofing	25.00 %	2.03 %	$40,898.88
C10 - Interior Construction	53.91 %	31.06 %	$896,500.40
C20 - Stairs	35.00 %	320.60 %	$531,609.49
C30 - Interior Finishes	80.03 %	52.36 %	$2,786,502.08
D10 - Conveying	14.29 %	0.00 %	$0.00
D20 - Plumbing	115.84 %	76.09 %	$1,827,274.41
D30 - HVAC	119.44 %	107.82 %	$14,104,964.99
D40 - Fire Protection	100.00 %	0.00 %	$0.00
D50 - Electrical	109.31 %	52.66 %	$3,639,907.65
E10 - Equipment	21.21 %	4.99 %	$93,445.81
E20 - Furnishings	105.00 %	97.63 %	$244,539.28
G20 - Site Improvements	14.27 %	73.95 %	$367,267.29
G40 - Site Electrical Utilities	16.67 %	0.00 %	$0.00
Totals:	**73.60 %**	**48.92 %**	**$28,935,061.56**

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)
B710001;Cooke	117,600	48.86	$10,296,638.72	$13,402,110.52	$2,403,878.55	$48,947.09	$2,416,219.39
G710001;Grounds	31,000	54.27	$0.00	$367,267.29	$0.00	$0.00	$0.00
Total:		**48.92**	**$10,296,638.72**	**$13,769,377.81**	**$2,403,878.55**	**$48,947.09**	**$2,416,219.39**

Deficiencies By Priority

Budget Estimate Total: $28,935,061.56

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):	117,600
Year Built:	1923
Last Renovation:	
Replacement Value:	$58,466,246
Repair Cost:	$28,567,794.27
Total FCI:	48.86 %
Total RSLI:	74.28 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B710001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S710001		

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	35.00 %	0.00 %	$0.00
A20 - Basement Construction	35.00 %	13.16 %	$297,803.33
B10 - Superstructure	35.00 %	2.05 %	$215,008.82
B20 - Exterior Enclosure	59.24 %	58.67 %	$3,889,339.13
B30 - Roofing	25.00 %	2.03 %	$40,898.88
C10 - Interior Construction	53.91 %	31.06 %	$896,500.40
C20 - Stairs	35.00 %	320.60 %	$531,609.49
C30 - Interior Finishes	80.03 %	52.36 %	$2,786,502.08
D10 - Conveying	14.29 %	0.00 %	$0.00
D20 - Plumbing	115.84 %	76.09 %	$1,827,274.41
D30 - HVAC	119.44 %	107.82 %	$14,104,964.99
D40 - Fire Protection	100.00 %	0.00 %	$0.00
D50 - Electrical	109.31 %	52.66 %	$3,639,907.65
E10 - Equipment	21.21 %	4.99 %	$93,445.81
E20 - Furnishings	105.00 %	97.63 %	$244,539.28
Totals:	**74.28 %**	**48.86 %**	**$28,567,794.27**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
A1010	Standard Foundations	$18.40	S.F.	117,600	100	1923	2023	2050	35.00 %	0.00 %	35			$2,163,840
A1030	Slab on Grade	$7.73	S.F.	117,600	100	1923	2023	2050	35.00 %	0.00 %	35			$909,048
A2010	Basement Excavation	$6.55	S.F.	117,600	100	1923	2023	2050	35.00 %	0.00 %	35			$770,280
A2020	Basement Walls	$12.70	S.F.	117,600	100	1923	2023	2050	35.00 %	19.94 %	35		$297,803.33	$1,493,520
B1010	Floor Construction	$75.10	S.F.	117,600	100	1923	2023	2050	35.00 %	2.43 %	35		$215,008.82	$8,831,760
B1020	Roof Construction	$13.88	S.F.	117,600	100	1923	2023	2050	35.00 %	0.00 %	35			$1,632,288
B2010	Exterior Walls	$36.91	S.F.	117,600	100	1923	2023	2050	35.00 %	2.97 %	35		$129,071.31	$4,340,616
B2020	Exterior Windows	$18.01	S.F.	117,600	40	1923	1963	2057	105.00 %	170.24 %	42		$3,605,549.99	$2,117,976
B2030	Exterior Doors	$1.45	S.F.	117,600	25	1923	1948	2042	108.00 %	90.73 %	27		$154,717.83	$170,520
B3010105	Built-Up	$37.76	S.F.	53,321	20	1923	1943	2020	25.00 %	2.03 %	5		$40,898.88	$2,013,401
B3010120	Single Ply Membrane	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$38.73	S.F.		25				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	53,321	20	1923	1943	2020	25.00 %	0.00 %	5			$3,199
C1010	Partitions	$17.91	S.F.	117,600	100	1923	2023	2050	35.00 %	2.86 %	35		$60,154.64	$2,106,216
C1020	Interior Doors	$3.51	S.F.	117,600	40	1923	1963	2057	105.00 %	186.91 %	42		$771,519.99	$412,776
C1030	Fittings	$3.12	S.F.	117,600	40	1923	1963	2057	105.00 %	17.67 %	42		$64,825.77	$366,912
C2010	Stair Construction	$1.41	S.F.	117,600	100	1923	2023	2050	35.00 %	320.60 %	35		$531,609.49	$165,816

Site Assessment Report - B710001;Cooke

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3010230	Paint & Covering	$13.21	S.F.	108,600	10	1923	1933	2020	50.00 %	28.78 %	5		$412,939.26	$1,434,606
C3010231	Vinyl Wall Covering	$0.97	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.	9,000	30	1923	1953	2020	16.67 %	0.00 %	5			$23,670
C3020411	Carpet	$7.30	S.F.	1,000	10	1923	1933	2027	120.00 %	0.00 %	12			$7,300
C3020412	Terrazzo & Tile	$75.52	S.F.	3,000	50	1923	1973	2020	10.00 %	0.00 %	5			$226,560
C3020413	Vinyl Flooring	$9.68	S.F.	29,000	20	1923	1943	2037	110.00 %	155.55 %	22		$436,647.06	$280,720
C3020414	Wood Flooring	$22.27	S.F.	37,600	25	1923	1948	2030	60.00 %	48.35 %	15		$404,836.94	$837,352
C3020415	Concrete Floor Finishes	$0.97	S.F.	47,000	50	1923	1973	2050	70.00 %	396.34 %	35		$180,693.07	$45,590
C3030	Ceiling Finishes	$20.97	S.F.	117,600	25	1923	1948	2042	108.00 %	54.80 %	27		$1,351,385.75	$2,466,072
D1010	Elevators and Lifts	$1.53	S.F.	117,600	35	1923	1958	2020	14.29 %	0.00 %	5			$179,928
D2010	Plumbing Fixtures	$13.52	S.F.	117,600	35	1923	1958	2055	114.29 %	49.79 %	40		$791,645.84	$1,589,952
D2020	Domestic Water Distribution	$1.68	S.F.	117,600	25	1923	1948	2045	120.00 %	271.41 %	30		$536,227.64	$197,568
D2030	Sanitary Waste	$2.90	S.F.	117,600	25	1923	1948	2045	120.00 %	146.43 %	30		$499,400.93	$341,040
D2040	Rain Water Drainage	$2.32	S.F.	117,600	30	1923	1953	2050	116.67 %	0.00 %	35			$272,832
D3020	Heat Generating Systems	$18.67	S.F.	117,600	35	1923	1958	2055	114.29 %	0.00 %	40			$2,195,592
D3030	Cooling Generating Systems	$24.48	S.F.	117,600	30	1923	1953	2050	116.67 %	65.60 %	35		$1,888,584.70	$2,878,848
D3040	Distribution Systems	$42.99	S.F.	117,600	25	1923	1948	2045	120.00 %	158.31 %	30		$8,003,618.49	$5,055,624
D3050	Terminal & Package Units	$11.60	S.F.	117,600	20	1923	1943	2040	125.00 %	0.00 %	25			$1,364,160
D3060	Controls & Instrumentation	$13.50	S.F.	117,600	20	1923	1943	2040	125.00 %	265.35 %	25		$4,212,761.80	$1,587,600
D4010	Sprinklers	$7.05	S.F.	117,600	35			2050	100.00 %	0.00 %	35			$829,080
D4020	Standpipes	$1.01	S.F.	117,600	35			2050	100.00 %	0.00 %	35			$118,776
D5010	Electrical Service/Distribution	$9.70	S.F.	117,600	30	1923	1953	2047	106.67 %	49.14 %	32		$560,551.06	$1,140,720
D5020	Lighting and Branch Wiring	$34.68	S.F.	117,600	20	1923	1943	2037	110.00 %	49.38 %	22		$2,013,717.16	$4,078,368
D5030	Communications and Security	$12.99	S.F.	117,600	15	1923	1938	2032	113.33 %	63.64 %	17		$972,150.79	$1,527,624
D5090	Other Electrical Systems	$1.41	S.F.	117,600	30	1923	1953	2037	73.33 %	56.38 %	22		$93,488.64	$165,816
E1020	Institutional Equipment	$4.82	S.F.	117,600	35	1923	1958	2028	37.14 %	16.49 %	13		$93,445.81	$566,832
E1090	Other Equipment	$11.10	S.F.	117,600	35	1923	1958	2020	14.29 %	0.00 %	5			$1,305,360
E2010	Fixed Furnishings	$2.13	S.F.	117,600	40	1923	1963	2057	105.00 %	97.63 %	42		$244,539.28	$250,488
								Total	**74.28 %**	**48.86 %**			**$28,567,794.27**	**$58,466,246**

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:
painted plaster or wood 92%
marble wainscot 8%

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

Note:
Concrete (sealed) =47,000 40%
Wood = 37,60031%
Gym floor (vinyl) 8,000 7%
VCT = 9,000 8%
VAT = 12,00010%
(All vinyl floors = 29,000sf = 25%)
Marble/QT = 3,000 3%
Carpet = 1,000 1%

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

Note:
plaster or painted 7%
acoustical tile 76%
exposed structure painted 17%

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

Note: 1-150KVA Phase converter (2-240V, single phase to 208/120V)

Renewal Schedule

eCOMET forecasts future Capital Renewal funding needed to address expiring systems based on the Next Renewal year found in the Cost Models. A 3% annual inflation factor is applied to the costs for systems expiring in future years. The table below reflects recommended Capital Renewal funding needs over the next 10 years. Note: Cells with a zero value indicate systems for which renewal is not scheduled in that year.

Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$28,567,794**	**$0**	**$0**	**$0**	**$0**	**$6,614,119**	**$0**	**$0**	**$0**	**$0**	**$0**	**$35,181,913**
*** 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	$297,803	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$297,803**
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	$215,009	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$215,009**
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	$129,071	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$129,071**
B2020 - Exterior Windows	$3,605,550	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,605,550**
B2030 - Exterior Doors	$154,718	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$154,718**
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	$40,899	$0	$0	$0	$0	$2,567,492	$0	$0	$0	$0	$0	**$2,608,391**
B3010120 - Single Ply Membrane	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010130 - Preformed Metal Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010140 - Shingle & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3020 - Roof Openings	$0	$0	$0	$0	$0	$4,079	$0	$0	$0	$0	$0	**$4,079**
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	$60,155	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$60,155**

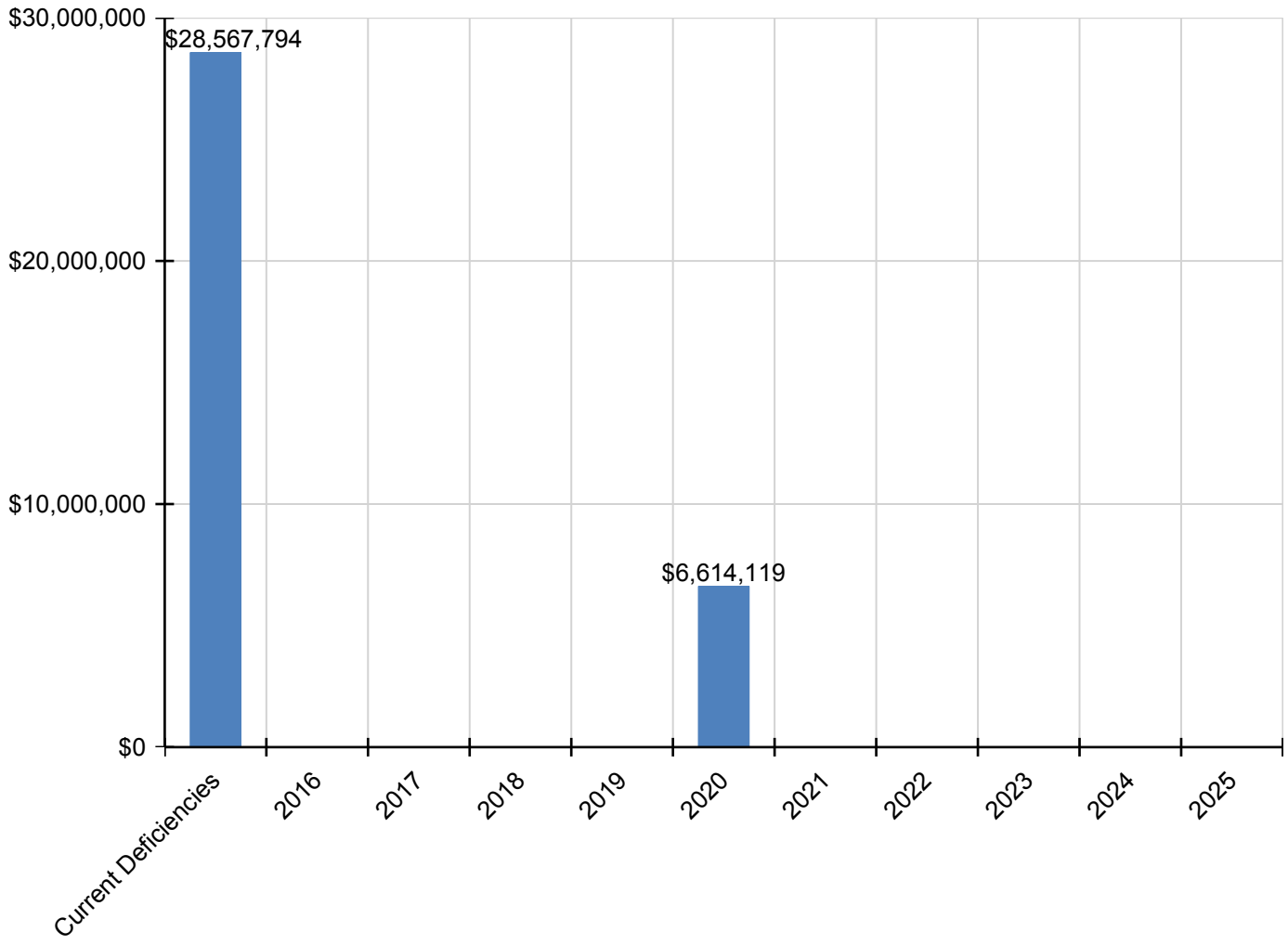
C1020 - Interior Doors	$771,520	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$771,520**
C1030 - Fittings	$64,826	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$64,826**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$531,609	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$531,609**
C30 - Interior Finishes	$0	$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	$412,939	$0	$0	$0	$0	$1,829,412	$0	$0	$0	$0	$0	**$2,242,351**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$30,184	$0	$0	$0	$0	$0	**$30,184**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$288,910	$0	$0	$0	$0	$0	**$288,910**
C3020413 - Vinyl Flooring	$436,647	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$436,647**
C3020414 - Wood Flooring	$404,837	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$404,837**
C3020415 - Concrete Floor Finishes	$180,693	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$180,693**
C3030 - Ceiling Finishes	$1,351,386	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,351,386**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D10 - Conveying	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D1010 - Elevators and Lifts	$0	$0	$0	$0	$0	$229,445	$0	$0	$0	$0	$0	**$229,445**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$791,646	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$791,646**
D2020 - Domestic Water Distribution	$536,228	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$536,228**
D2030 - Sanitary Waste	$499,401	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$499,401**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3030 - Cooling Generating Systems	$1,888,585	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,888,585**
D3040 - Distribution Systems	$8,003,618	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$8,003,618**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$4,212,762	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,212,762**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4020 - Standpipes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

D50 - Electrical	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution	$560,551	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$560,551**
D5020 - Lighting and Branch Wiring	$2,013,717	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,013,717**
D5030 - Communications and Security	$972,151	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$972,151**
D5090 - Other Electrical Systems	$93,489	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$93,489**
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	$93,446	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$93,446**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$1,664,597	$0	$0	$0	$0	$0	**$1,664,597**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$244,539	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$244,539**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

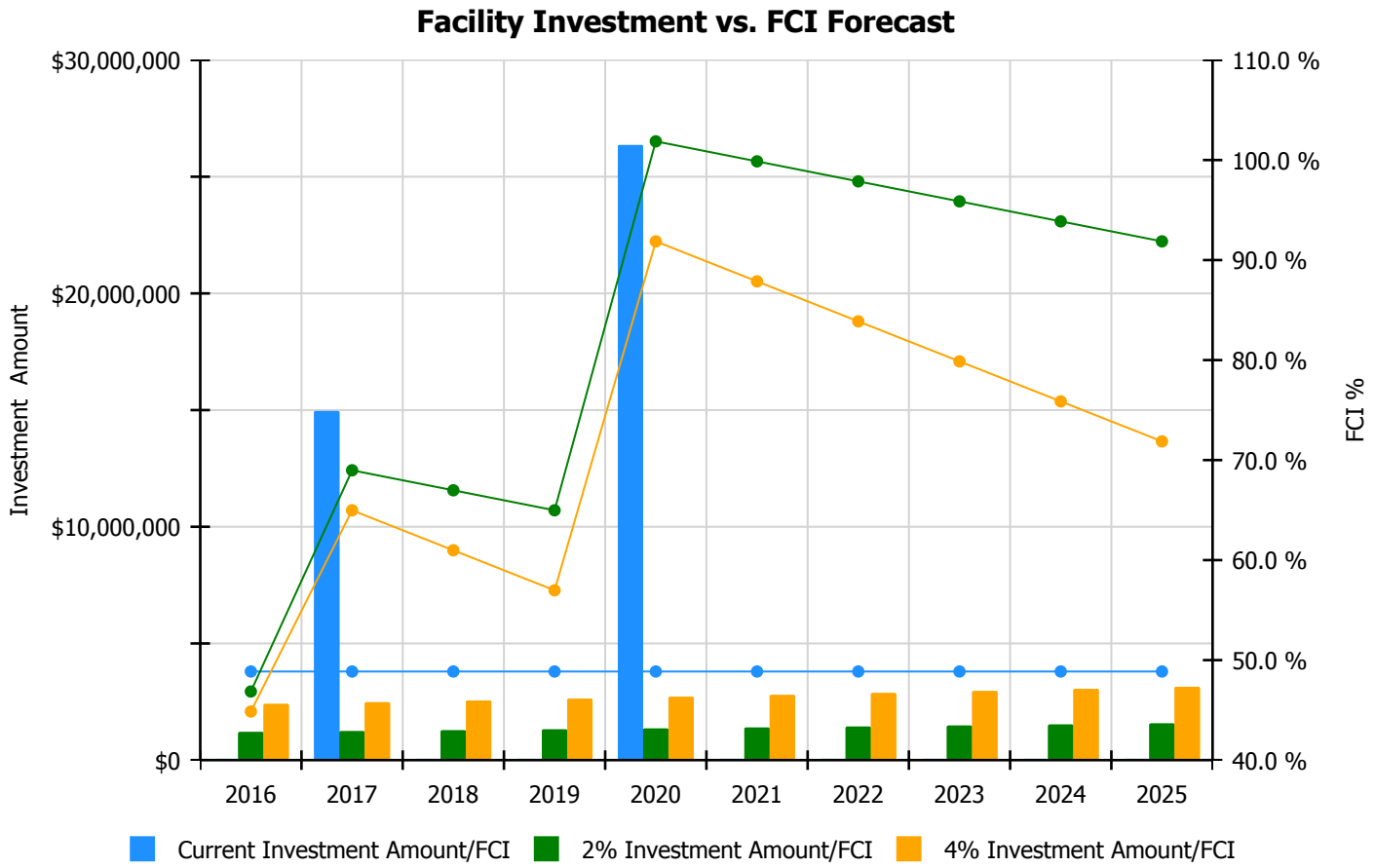
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

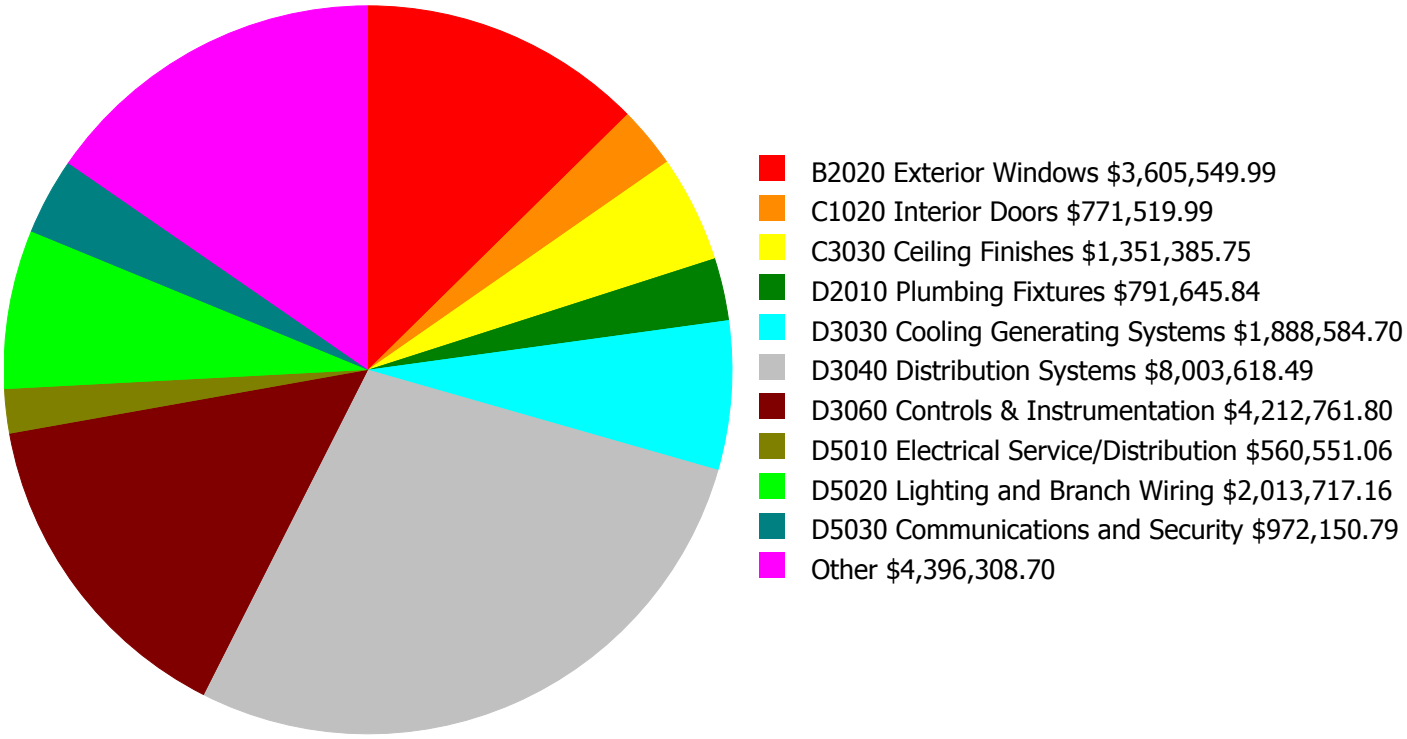
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 48.86%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$1,204,405.00	46.86 %	$2,408,809.00	44.86 %
2017	$14,960,201	$1,240,537.00	68.98 %	$2,481,074.00	64.98 %
2018	$0	$1,277,753.00	66.98 %	$2,555,506.00	60.98 %
2019	$0	$1,316,085.00	64.98 %	$2,632,171.00	56.98 %
2020	$26,358,338	$1,355,568.00	101.87 %	$2,711,136.00	91.87 %
2021	$0	$1,396,235.00	99.87 %	$2,792,470.00	87.87 %
2022	$0	$1,438,122.00	97.87 %	$2,876,244.00	83.87 %
2023	$0	$1,481,266.00	95.87 %	$2,962,532.00	79.87 %
2024	$0	$1,525,704.00	93.87 %	$3,051,408.00	75.87 %
2025	$0	$1,571,475.00	91.87 %	$3,142,950.00	71.87 %
Total:	**$41,318,539**	**$13,807,150.00**		**$27,614,300.00**	

Deficiency Summary by System

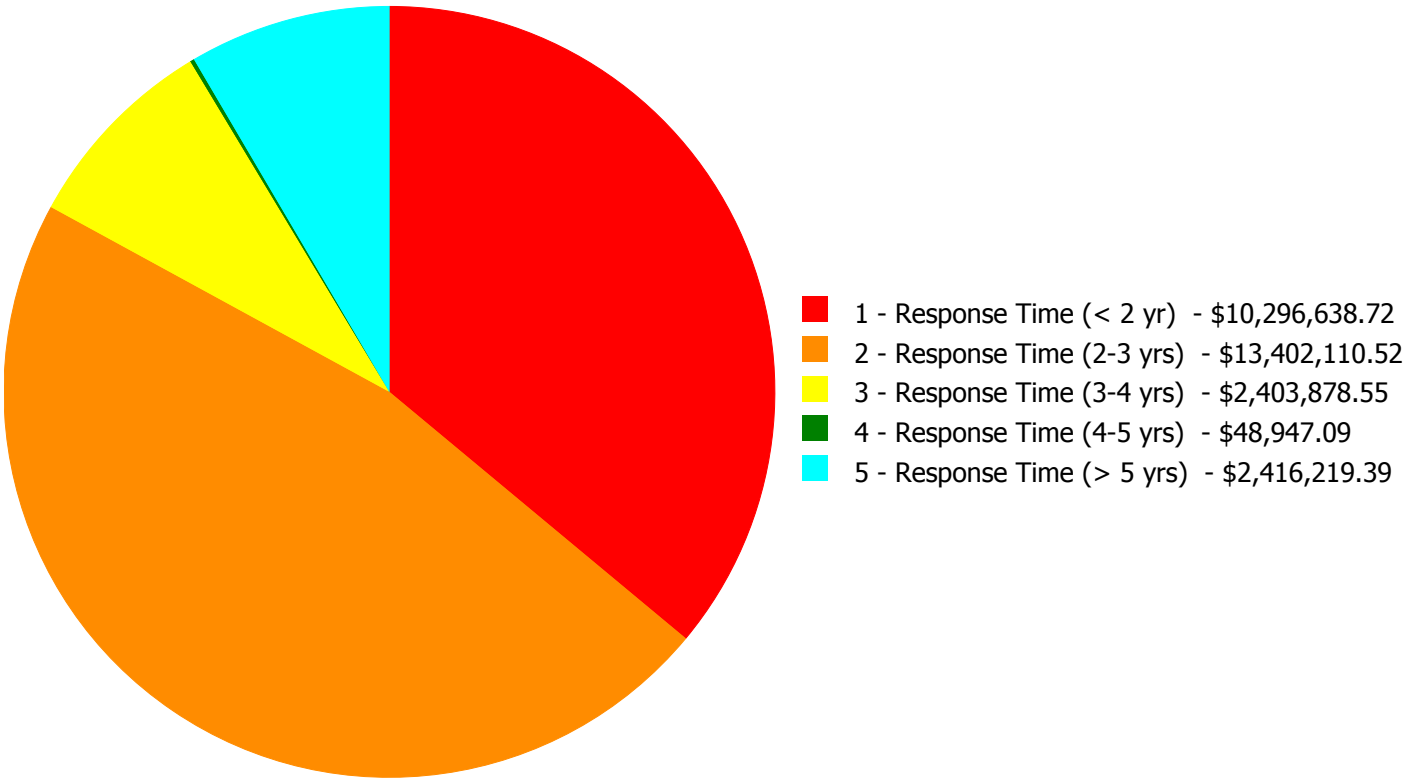
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $28,567,794.27

Deficiency Summary by Priority

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



Budget Estimate Total: $28,567,794.27

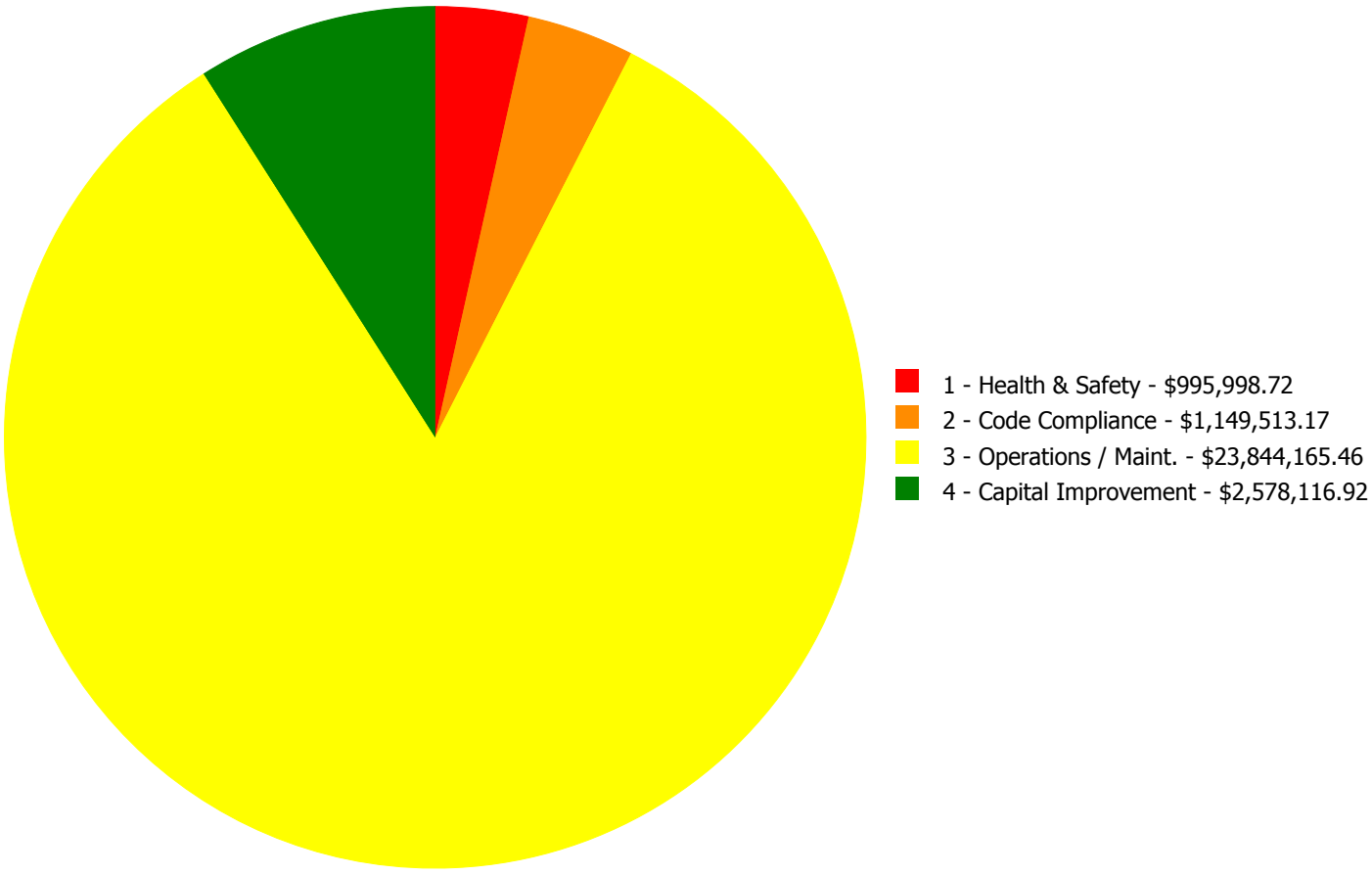
Deficiency By Priority Investment Table

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	$297,803.33	$0.00	$0.00	$0.00	$297,803.33
B1010	Floor Construction	$0.00	$215,008.82	$0.00	$0.00	$0.00	$215,008.82
B2010	Exterior Walls	$52,479.15	$76,592.16	$0.00	$0.00	$0.00	$129,071.31
B2020	Exterior Windows	$0.00	$3,605,549.99	$0.00	$0.00	$0.00	$3,605,549.99
B2030	Exterior Doors	$0.00	$154,717.83	$0.00	$0.00	$0.00	$154,717.83
B3010105	Built-Up	$40,898.88	$0.00	$0.00	$0.00	$0.00	$40,898.88
C1010	Partitions	$0.00	$60,154.64	$0.00	$0.00	$0.00	$60,154.64
C1020	Interior Doors	$0.00	$771,519.99	$0.00	$0.00	$0.00	$771,519.99
C1030	Fittings	$0.00	$64,825.77	$0.00	$0.00	$0.00	$64,825.77
C2010	Stair Construction	$411,120.50	$120,488.99	$0.00	$0.00	$0.00	$531,609.49
C3010230	Paint & Covering	$0.00	$412,939.26	$0.00	$0.00	$0.00	$412,939.26
C3020413	Vinyl Flooring	$0.00	$436,647.06	$0.00	$0.00	$0.00	$436,647.06
C3020414	Wood Flooring	$0.00	$404,836.94	$0.00	$0.00	$0.00	$404,836.94
C3020415	Concrete Floor Finishes	$0.00	$180,693.07	$0.00	$0.00	$0.00	$180,693.07
C3030	Ceiling Finishes	$0.00	$1,351,385.75	$0.00	$0.00	$0.00	$1,351,385.75
D2010	Plumbing Fixtures	$0.00	$791,645.84	$0.00	$0.00	$0.00	$791,645.84
D2020	Domestic Water Distribution	$0.00	$0.00	$0.00	$48,947.09	$487,280.55	$536,227.64
D2030	Sanitary Waste	$0.00	$0.00	$499,400.93	$0.00	$0.00	$499,400.93
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$1,888,584.70	$1,888,584.70
D3040	Distribution Systems	$6,058,786.73	$0.00	$1,904,477.62	$0.00	$40,354.14	$8,003,618.49
D3060	Controls & Instrumentation	$0.00	$4,212,761.80	$0.00	$0.00	$0.00	$4,212,761.80
D5010	Electrical Service/Distribution	$560,551.06	$0.00	$0.00	$0.00	$0.00	$560,551.06
D5020	Lighting and Branch Wiring	$2,013,717.16	$0.00	$0.00	$0.00	$0.00	$2,013,717.16
D5030	Communications and Security	$972,150.79	$0.00	$0.00	$0.00	$0.00	$972,150.79
D5090	Other Electrical Systems	$93,488.64	$0.00	$0.00	$0.00	$0.00	$93,488.64
E1020	Institutional Equipment	$93,445.81	$0.00	$0.00	$0.00	$0.00	$93,445.81
E2010	Fixed Furnishings	$0.00	$244,539.28	$0.00	$0.00	$0.00	$244,539.28
	Total:	$10,296,638.72	$13,402,110.52	$2,403,878.55	$48,947.09	$2,416,219.39	$28,567,794.27

Deficiency Summary by Category

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



Budget Estimate Total: $28,567,794.27

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: B2010 - Exterior Walls

Location: exterior walls, inside of "O"
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Remove graffiti - power wash and paint
Qty: 10,000.00
Unit of Measure: S.F.
Estimate: $52,479.15
Assessor Name: System
Date Created: 02/05/2016

Notes: Powerwash rear building wall and limestone band and below on front and sides of building (10,000sf)

System: B3010105 - Built-Up

Location: roof
Distress: Building Envelope Integrity
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Repair or replace flashing where it connects to masonry parapet - choose proper material
Qty: 500.00
Unit of Measure: L.F.
Estimate: $27,265.92
Assessor Name: System
Date Created: 02/05/2016

Notes: Reset gutter drains in troughs and reseal metal troughs (500ft)

System: B3010105 - Built-Up

Location: roof

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Repair or replace flashing where it connects to masonry parapet - choose proper material

Qty: 250.00

Unit of Measure: L.F.

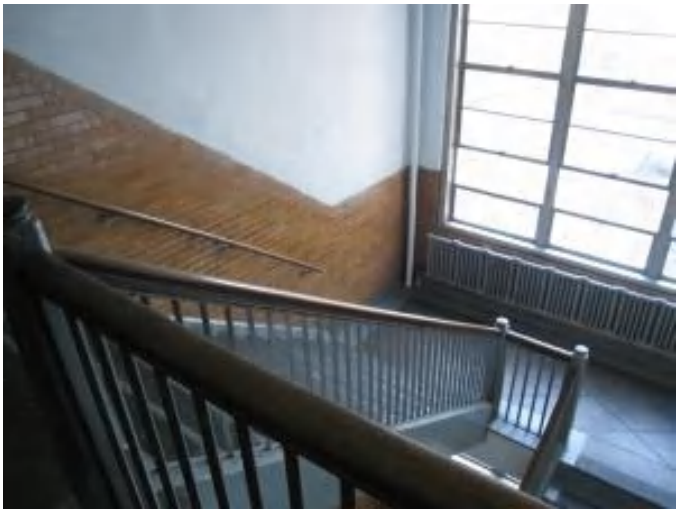
Estimate: $13,632.96

Assessor Name: System

Date Created: 02/05/2016

Notes: Re-seal roof penetrations at gravity vents, plumbing vents and fans (assume 25 penetrations in roof)

System: C2010 - Stair Construction



Location: stairways

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 1 - Response Time (< 2 yr)

Correction: Replace inadequate or install proper stair railing - select appropriate material

Qty: 1,200.00

Unit of Measure: L.F.

Estimate: $404,550.34

Assessor Name: System

Date Created: 02/05/2016

Notes: Remove and replace stairway handrails and guards with code compliant systems (6 stairways) x4 story; =50x24=1200lf

System: C2010 - Stair Construction

Location: exterior stairways

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 1 - Response Time (< 2 yr)

Correction: Replace inadequate or install proper stair railing - select appropriate material

Qty: 40.00

Unit of Measure: L.F.

Estimate: $6,570.16

Assessor Name: System

Date Created: 02/05/2016

Notes: Replace failing and non-code compliant handrails/guards on all site stairs both sides of each stair (40ft handrails)

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace the existing unit ventilators with new units designed to provide adequate ventilation per ASHRAE Std 62 - insert the SF of bldg. in the qty.

Qty: 117,600.00

Unit of Measure: S.F.

Estimate: $5,672,928.16

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace the existing steam radiators throughout the building with new unit ventilators designed to provide adequate ventilation per ASHRAE Std 62. The new units shall be equipped with hot water / chilled water coils and integral heat exchanger.

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Conduct a steam trap survey and replace failed units.

Qty: 117,600.00

Unit of Measure: S.F.

Estimate: $385,858.57

Assessor Name: System

Date Created: 02/25/2016

Notes: Conduct a steam trap survey to identify and replace failed traps passing live steam into the condensate piping system.

System: D5010 - Electrical Service/Distribution

Location: Entire Building

Distress: Beyond Service Life

Category: 4 - Capital Improvement

Priority: 1 - Response Time (< 2 yr)

Correction: Replace Electrical Distribution System (U)

Qty: 1.00

Unit of Measure: Ea.

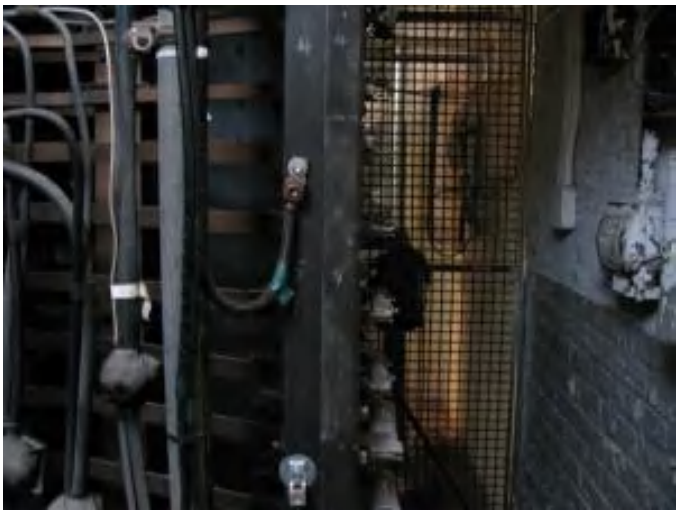
Estimate: $426,199.13

Assessor Name: System

Date Created: 12/31/2015

Notes: Replace the entire distribution system with new panels and new wiring/conduits. Provide arc flash label on the electrical equipment. Estimated 15 panel boards.

System: D5010 - Electrical Service/Distribution



Location: Elctrical Room

Distress: Beyond Service Life

Category: 4 - Capital Improvement

Priority: 1 - Response Time (< 2 yr)

Correction: Replace Switchboard

Qty: 1.00

Unit of Measure: Ea.

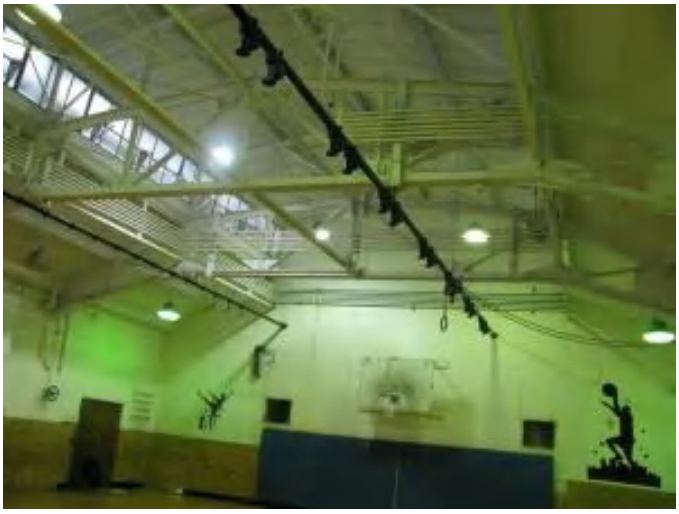
Estimate: $134,351.93

Assessor Name: System

Date Created: 12/31/2015

Notes: Upgrade existing service entrance for adding a new 1200A, 208/120V, 3PH, 4 wire switchboard.

System: D5020 - Lighting and Branch Wiring



Location: Entire Building

Distress: Beyond Service Life

Category: 4 - Capital Improvement

Priority: 1 - Response Time (< 2 yr)

Correction: Replace Lighting Fixtures (SF)

Qty: 1.00

Unit of Measure: S.F.

Estimate: $1,977,628.16

Assessor Name: System

Date Created: 12/31/2015

Notes: Replace all the lighting fixtures in classrooms, offices, cafeteria and kitchen with new fluorescent lighting fixtures with T8 lamp. Replace gymnasium illuminates with LED high bay. Estimated 15each. Replace auditorium lighting fixtures with LED down light fixtures.

System: D5020 - Lighting and Branch Wiring

Location: Classroom

Distress: Inadequate

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Add wiring device

Qty: 1.00

Unit of Measure: Ea.

Estimate: $36,089.00

Assessor Name: System

Date Created: 12/31/2015

Notes: Install minimum two receptacles in each wall of class rooms in Annex area. Total 50 receptacles.

System: D5030 - Communications and Security

Location: Entier Building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Replace fire alarm system

Qty: 1.00

Unit of Measure: S.F.

Estimate: $594,918.94

Assessor Name: System

Date Created: 01/05/2016

Notes: Replace existing fire alarm system with an automatic fire alarm system including smoke detectors in corridors and other recommended areas per NEC. Install horn/strobes in class rooms, corridors, offices, toilets, library and other recommended areas per codes.

System: D5030 - Communications and Security

Location: Entire Building
Distress: Security Issue
Category: 1 - Health & Safety
Priority: 1 - Response Time (< 2 yr)
Correction: Add/Replace Video Surveillance System
Qty: 1.00
Unit of Measure: Ea.
Estimate: $307,591.14
Assessor Name: System
Date Created: 01/05/2016

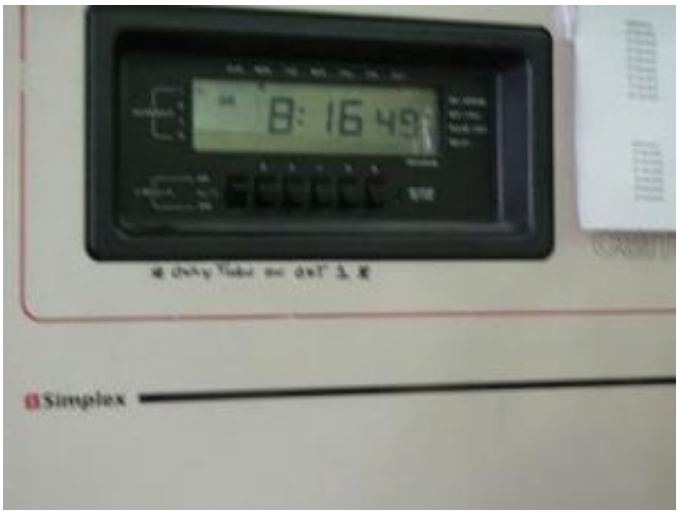
Notes: Provide an adequate video surveillance system including camera and Closed Circuit Television (CCTV) system. Cameras should install in the corridors, school entrance doors and on the walls around the building.

System: D5030 - Communications and Security

Location: Auditorium
Distress: Beyond Service Life
Category: 4 - Capital Improvement
Priority: 1 - Response Time (< 2 yr)
Correction: Add/Replace Sound System
Qty: 1.00
Unit of Measure: LS
Estimate: $39,937.70
Assessor Name: System
Date Created: 01/20/2016

Notes: Provide new sound system per ECE-40020 (standard for reinforcement system design) including a freestanding 19” rack backstage with mixer per amplifiers, digital media recording with playback capability, AM-FM radio, graphic or parametric equalizer, and receivers for wireless microphone.

System: D5030 - Communications and Security



Location: Entier Building

Distress: Inadequate

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Add/Replace Clock System or Components

Qty: 1.00

Unit of Measure: Ea.

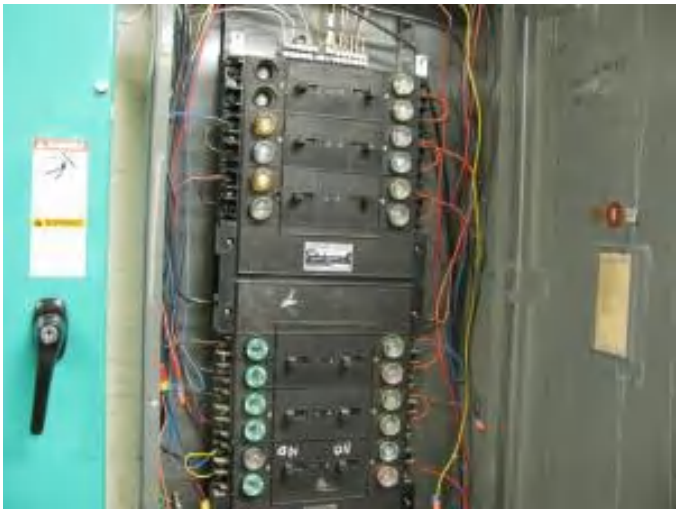
Estimate: $29,703.01

Assessor Name: System

Date Created: 01/05/2016

Notes: Add extra wireless clock controller.

System: D5090 - Other Electrical Systems



Location: Boiler Room

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Replace standby generator system

Qty: 1.00

Unit of Measure: Ea.

Estimate: $71,490.58

Assessor Name: System

Date Created: 01/05/2016

Notes: Replace existing generator with new 30KW generator

System: D5090 - Other Electrical Systems

Location: Roof

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Repair Lightning Protection System

Qty: 1.00

Unit of Measure: Job

Estimate: $21,998.06

Assessor Name: System

Date Created: 01/05/2016

Notes: Provide lightning protection studies to ascertain adequacy of existing systems.

System: E1020 - Institutional Equipment

Location: Auditorium

Distress: Inadequate

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Add/Replace Stage Theatrical Lighting System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $93,445.81

Assessor Name: System

Date Created: 01/05/2016

Notes: Replace stage lighting and lighting controller in the Auditorium.

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

System: A2020 - Basement Walls

Location: areaway walls

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair concrete wall in poor condition including rebar dowelling - insert the SF of wall area

Qty: 800.00

Unit of Measure: S.F.

Estimate: $183,263.58

Assessor Name: System

Date Created: 02/05/2016

Notes: Repair concrete areaway retaining wall (100ft x 8ft tall)

System: A2020 - Basement Walls

Location: areaway foundation basement wall

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair concrete wall in poor condition including rebar dowelling - insert the SF of wall area

Qty: 500.00

Unit of Measure: S.F.

Estimate: $114,539.75

Assessor Name: System

Date Created: 02/05/2016

Notes: Repair basement wall over and around windows and louvers in areaway (500sf)

System: B1010 - Floor Construction

Location: rear access to kitchen over areaway

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 500.00

Unit of Measure: S.F.

Estimate: $134,380.51

Assessor Name: System

Date Created: 02/05/2016

Notes: Remove failing concrete walk "bridge" with brick side walls over window well, replace with new structural slab bridge (500sf)

System: B1010 - Floor Construction

Location: fire exit stairways

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 300.00

Unit of Measure: S.F.

Estimate: $80,628.31

Assessor Name: System

Date Created: 02/05/2016

Notes: Repair failing floor decks in fire exit stairways (300sf)

System: B2010 - Exterior Walls

Location: exterior brick, inside of "O"

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Rebuild brick parapets at original building roof perimeter; re-set stone coping - change qty. for LF of coping if necessary

Qty: 400.00

Unit of Measure: S.F.

Estimate: $76,592.16

Assessor Name: System

Date Created: 02/05/2016

Notes: Repoint cracks in parapet above counterflashing, masonry walls above roof, cracks in brick walls on facing inside of “O”, and joints above and below limestone band (400sf)

System: B2020 - Exterior Windows

Location: exterior windows

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 600.00

Unit of Measure: Ea.

Estimate: $3,605,549.99

Assessor Name: System

Date Created: 02/05/2016

Notes: Replace all exterior windows (600 3.5 x 8)

System: B2030 - Exterior Doors

Location: exterior doors

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 20.00

Unit of Measure: Ea.

Estimate: $154,717.83

Assessor Name: System

Date Created: 02/05/2016

Notes: Replace all exterior doors and frames; also provide new exit hardware. (20)3x7

System: C1010 - Partitions

Location: folding partitions between classrooms

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove folding wood partitions; replace with metal studs and gypsum board painted

Qty: 2,700.00

Unit of Measure: S.F.

Estimate: $60,154.64

Assessor Name: System

Date Created: 02/05/2016

Notes: Remove damaged and failing folding wood partitions; replace with gypsum board and metal stud walls (8) @300sf ea =2700sf

System: C1020 - Interior Doors

Location: corridor doors

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Remove and replace interior doors - wood doors with wood frame - per leaf

Qty: 120.00

Unit of Measure: Ea.

Estimate: $558,520.68

Assessor Name: System

Date Created: 02/05/2016

Notes: Replace all original wood interior doors in hallways (120)

System: C1020 - Interior Doors

Location: basement and stairway doors

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Remove and replace hollow metal frames and doors

Qty: 30.00

Unit of Measure: Ea.

Estimate: $152,339.61

Assessor Name: System

Date Created: 02/05/2016

Notes: Remove and replace all basement steel doors, frames, and hardware in mechanical rooms; fire rated doors with panic hardware for stairs (30) 3x7 doors

System: C1020 - Interior Doors

Location: interior doors inside rooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Refinish interior doors

Qty: 40.00

Unit of Measure: Ea.

Estimate: $33,127.32

Assessor Name: System

Date Created: 02/05/2016

Notes: Refinish all original wood interior doors, frames and hardware inside classrooms, closets, offices, etc. (40)

System: C1020 - Interior Doors

Location: corridor doors

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Provide security hardware for classroom and office doors

Qty: 120.00

Unit of Measure: Ea.

Estimate: $27,532.38

Assessor Name: System

Date Created: 02/05/2016

Notes: Provide security hardware for classrooms and offices, locking from inside classroom. (120)

System: C1030 - Fittings

Location: toilet rooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace toilet partitions

Qty: 20.00

Unit of Measure: Ea.

Estimate: $51,328.09

Assessor Name: System

Date Created: 02/05/2016

Notes: Replace damaged marble and wood water closet partitions with HDPE plastic partitions (assume 20)

System: C1030 - Fittings

Location: toilet rooms

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace toilet accessories - select accessories and quantity

Qty: 20.00

Unit of Measure: Ea.

Estimate: $13,497.68

Assessor Name: System

Date Created: 02/05/2016

Notes: Provide toilet room accessories where broken or missing (20 sets)

System: C2010 - Stair Construction

Location: fire exit stairways

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace exterior enclosed stair tower egress stairs - per flight of stairs - stairs only

Qty: 2.00

Unit of Measure: Flight

Estimate: $104,742.34

Assessor Name: System

Date Created: 02/05/2016

Notes: Replace 2 rusted fire stair (2 flights)

System: C2010 - Stair Construction

Location: areaway

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Add exterior stairs - per flight - galvanized or painted for rooftop use

Qty: 1.00

Unit of Measure: Flight

Estimate: $15,746.65

Assessor Name: System

Date Created: 02/05/2016

Notes: Replace rusted stair from areaway to grade level at W. Mentor Street (13 risers)

System: C3010230 - Paint & Covering

Location: interior walls

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Repair substrate and repaint interior concrete or CMU walls - SF of wall surface

Qty: 60,000.00

Unit of Measure: S.F.

Estimate: $412,939.26

Assessor Name: System

Date Created: 02/05/2016

Notes: Repair peeling and water damaged walls and beams under clerestory on high walls sill in gyms over boys and girls gymnasiums; repair/repaint water damaged and cracked plaster walls throughout the building (6,000sf)

System: C3020413 - Vinyl Flooring

Location: cafeterias, kitchen, and other rooms

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 12,000.00

Unit of Measure: S.F.

Estimate: $182,000.02

Assessor Name: System

Date Created: 02/05/2016

Notes: Replace VAT floors using proper asbestos abatement procedures if determined asbestos is present. (12,000sf)

System: C3020413 - Vinyl Flooring

Location: gymnasium

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace vinyl sheet flooring

Qty: 8,000.00

Unit of Measure: S.F.

Estimate: $146,489.25

Assessor Name: System

Date Created: 02/05/2016

Notes: Remove and replace all resilient vinyl gymnasium floors in boy's and girl's gymnasiums (8,000sf)

System: C3020413 - Vinyl Flooring

Location: offices and other rooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Remove and replace VCT

Qty: 9,000.00

Unit of Measure: S.F.

Estimate: $108,157.79

Assessor Name: System

Date Created: 02/05/2016

Notes: Replace VCT floors (9,000sf)

System: C3020414 - Wood Flooring

Location: wood floors

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Refinish wood floors

Qty: 37,600.00

Unit of Measure: S.F.

Estimate: $404,836.94

Assessor Name: System

Date Created: 02/05/2016

Notes: Strip, sand, repair and refinish all wood floors in classrooms and in auditorium (37,600sf)

System: C3020415 - Concrete Floor Finishes

Location: concrete floors

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Clean and reseal concrete floors

Qty: 47,000.00

Unit of Measure: S.F.

Estimate: $180,693.07

Assessor Name: System

Date Created: 02/05/2016

Notes: Clean and repaint basement floor in mechanical rooms; clean and reseal concrete floors in hallways, stairways, and toilet rooms (47,000sf)

System: C3030 - Ceiling Finishes

Location: ceilings

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 89,600.00

Unit of Measure: S.F.

Estimate: $1,351,385.75

Assessor Name: System

Date Created: 02/05/2016

Notes: Replace 2x4 acoustical tile ceilings where damaged or where grid is rusted (89,600sf)

System: D2010 - Plumbing Fixtures

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 40.00

Unit of Measure: Ea.

Estimate: $298,485.91

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace all water closets in the building with lower flow fixtures, as the fixtures are original.

System: D2010 - Plumbing Fixtures

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 18.00

Unit of Measure: Ea.

Estimate: $282,472.14

Assessor Name: System

Date Created: 02/25/2016

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: D2010 - Plumbing Fixtures

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 30.00

Unit of Measure: Ea.

Estimate: $114,330.38

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace all lavatories in the building with lower flow fixtures, as the fixtures are original.

System: D2010 - Plumbing Fixtures

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace wall hung urinals

Qty: 26.00

Unit of Measure: Ea.

Estimate: $96,357.41

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace all urinals in the building with lower flow fixtures, as the fixtures are original.

System: D3060 - Controls & Instrumentation

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace pneumatic controls with DDC (150KSF)

Qty: 117,600.00

Unit of Measure: S.F.

Estimate: $2,106,380.90

Assessor Name: System

Date Created: 02/25/2016

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

System: D3060 - Controls & Instrumentation

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace pneumatic controls with DDC (150KSF)

Qty: 117,600.00

Unit of Measure: S.F.

Estimate: $2,106,380.90

Assessor Name: System

Date Created: 02/25/2016

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

System: E2010 - Fixed Furnishings

Location: auditorium

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace auditorium seating - add tablet arms if required. Veneer seating is an option.

Qty: 300.00

Unit of Measure: Ea.

Estimate: $244,539.28

Assessor Name: System

Date Created: 02/05/2016

Notes: Replace damaged folding wood auditorium chairs; 75% of total = 300

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

System: D2030 - Sanitary Waste

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Inspect sanitary waste piping and replace damaged sections. (+100KSF)

Qty: 117,600.00

Unit of Measure: S.F.

Estimate: $499,400.93

Assessor Name: System

Date Created: 02/25/2016

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

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 117,600.00

Unit of Measure: S.F.

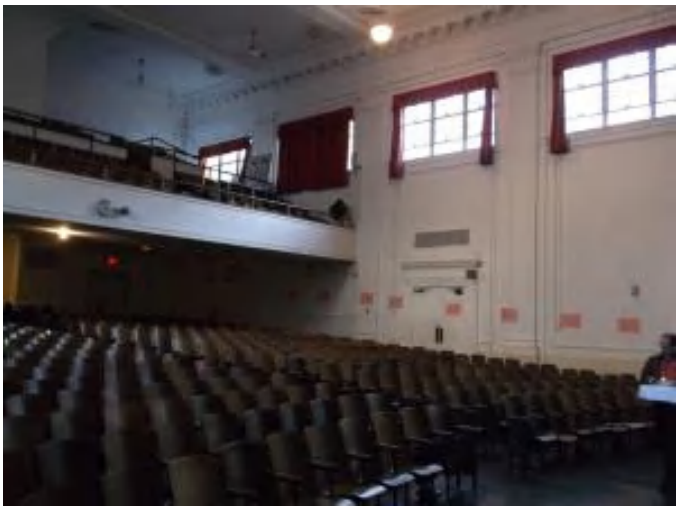
Estimate: $1,112,539.82

Assessor Name: System

Date Created: 02/25/2016

Notes: Hire a qualified contractor to examine the steam and condensate piping in service for 93 years 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.

System: D3040 - Distribution Systems



Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 200.00

Unit of Measure: Seat

Estimate: $333,093.30

Assessor Name: System

Date Created: 02/25/2016

Notes: Provide ventilation, heating and cooling for the Auditorium by removing the house fan, air handler and steam convectors and installing a new modular constant volume air handling unit with heating and cooling.

System: D3040 - Distribution Systems

Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Cafeteria (850)

Qty: 850.00

Unit of Measure: Student

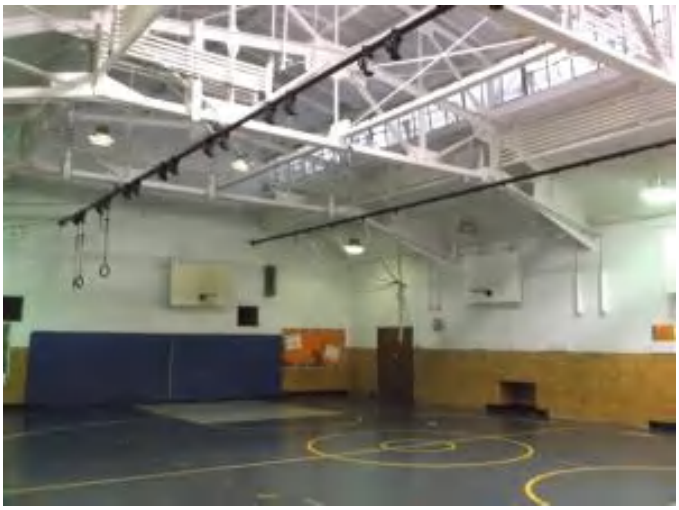
Estimate: $231,369.13

Assessor Name: System

Date Created: 02/25/2016

Notes: Provide ventilation, heating and cooling for the Cafeteria by removing the existing steam radiators and heating and ventilating unit and installing a new modular constant volume air handling unit with heating, cooling, ventilation, distribution ductwork and registers.

System: D3040 - Distribution Systems



Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Gymnasium (single station)

Qty: 6,000.00

Unit of Measure: S.F.

Estimate: $227,475.37

Assessor Name: System

Date Created: 02/25/2016

Notes: Provide ventilation, heating and cooling for the Gymnasium and lockers by replacing the existing heating and ventilating unit.

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

System: D2020 - Domestic Water Distribution

Location: Main boiler mechanical equipment room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace instantaneous water heater

Qty: 2.00

Unit of Measure: Ea.

Estimate: $48,947.09

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace two vertical tank natural gas fired water heaters.

Priority 5 - Response Time (> 5 yrs):

System: D2020 - Domestic Water Distribution

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace domestic water piping (150 KSF)

Qty: 117,500.00

Unit of Measure: S.F.

Estimate: $487,280.55

Assessor Name: System

Date Created: 02/25/2016

Notes: Inspect and replace the original as needed the domestic water piping in the building

System: D3030 - Cooling Generating Systems

Location: Adjacent to building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 117,600.00

Unit of Measure: S.F.

Estimate: $1,888,584.70

Assessor Name: System

Date Created: 02/25/2016

Notes: Provide 200 ton air cooled chiller.

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace finned tube radiation terminals (per 100 LF)

Qty: 100.00

Unit of Measure: L.F.

Estimate: $40,354.14

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace the steam convection.

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, cast iron, gas & oil, steam, 4650 MBH	2.00	Ea.	Main boiler mechanical equipment room	HB Smith	4500A-S/W-14			35			$168,672.60	$371,079.72
D5010 Electrical Service/Distribution	Switchboards, distribution section, aluminum bus bars, 4 W, 120/208 or 277/480 V, 600 amp, excl breakers	1.00	Ea.	Electrical Room					30	1923	2017	$3,819.15	$4,201.07
												Total:	**$375,280.79**

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):	31,000
Year Built:	1923
Last Renovation:	
Replacement Value:	$676,720
Repair Cost:	$367,267.29
Total FCI:	54.27 %
Total RSLI:	14.91 %

Description:

Attributes:

General Attributes:

Bldg ID:	S710001	Site ID:	S710001

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	14.27 %	73.95 %	$367,267.29
G40 - Site Electrical Utilities	16.67 %	0.00 %	$0.00
Totals:	**14.91 %**	**54.27 %**	**$367,267.29**

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.		30				0.00 %	0.00 %				$0
G2030	Pedestrian Paving	$12.30	S.F.	28,500	40	1923	1963	2020	12.50 %	48.37 %	5		$169,561.62	$350,550
G2040	Site Development	$4.36	S.F.	31,000	25	1923	1948	2020	20.00 %	146.28 %	5		$197,705.67	$135,160
G2050	Landscaping & Irrigation	$4.36	S.F.	2,500	15				0.00 %	0.00 %				$10,900
G4020	Site Lighting	$4.84	S.F.	31,000	30	1923	1953	2020	16.67 %	0.00 %	5			$150,040
G4030	Site Communications & Security	$0.97	S.F.	31,000	30	1923	1953	2020	16.67 %	0.00 %	5			$30,070
								Total	**14.91 %**	**54.27 %**			**$367,267.29**	**$676,720**

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.

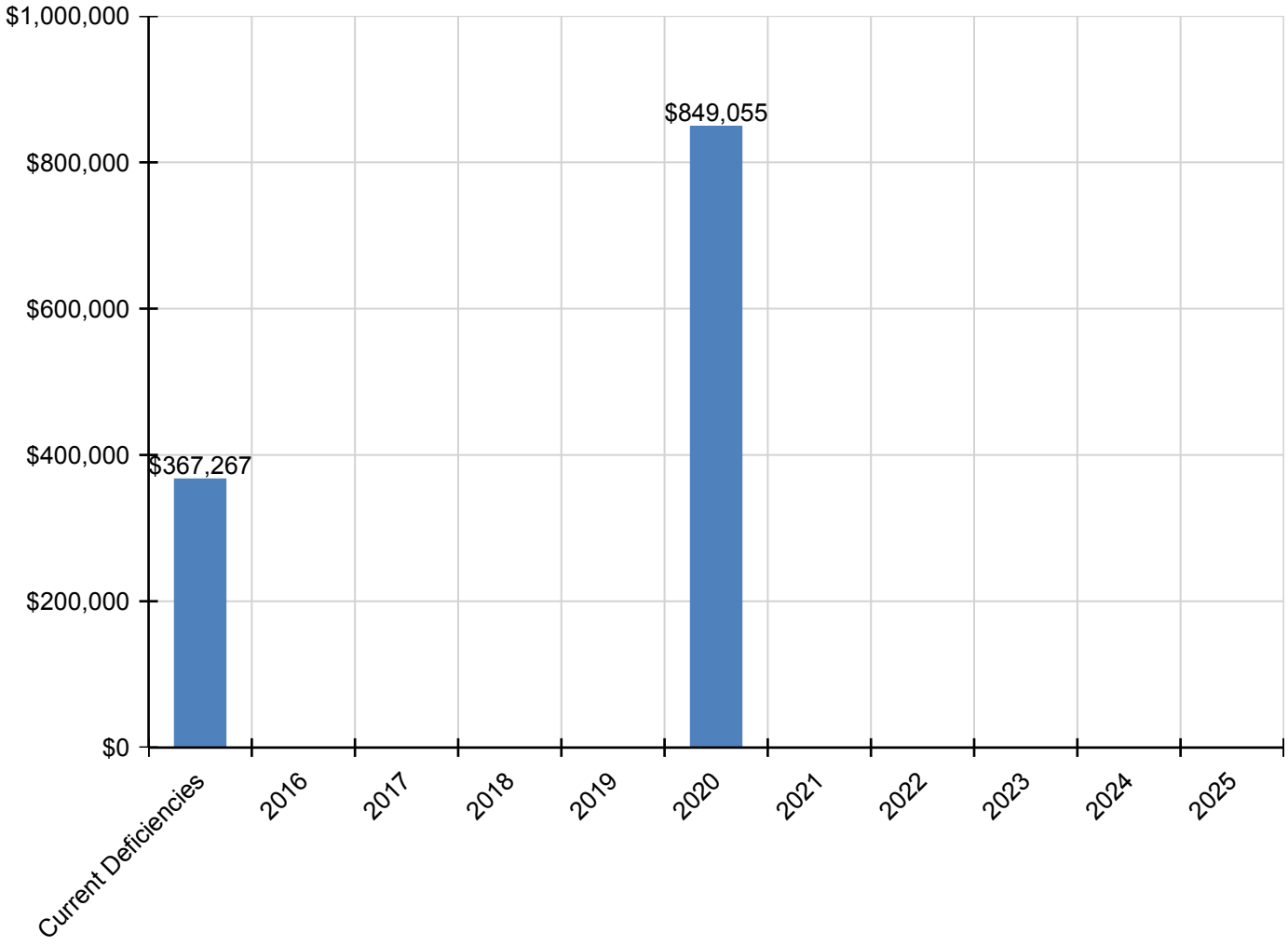
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$367,267**	**$0**	**$0**	**$0**	**$0**	**$849,055**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,216,322**
G - Building Sitework	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G20 - Site Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2010 - Roadways	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2020 - Parking Lots	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2030 - Pedestrian Paving	$169,562	$0	$0	$0	$0	$447,022	$0	$0	$0	$0	$0	**$616,583**
G2040 - Site Development	$197,706	$0	$0	$0	$0	$172,356	$0	$0	$0	$0	$0	**$370,062**
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	$0	$0	$0	$0	$0	$191,331	$0	$0	$0	$0	$0	**$191,331**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$38,345	$0	$0	$0	$0	$0	**$38,345**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

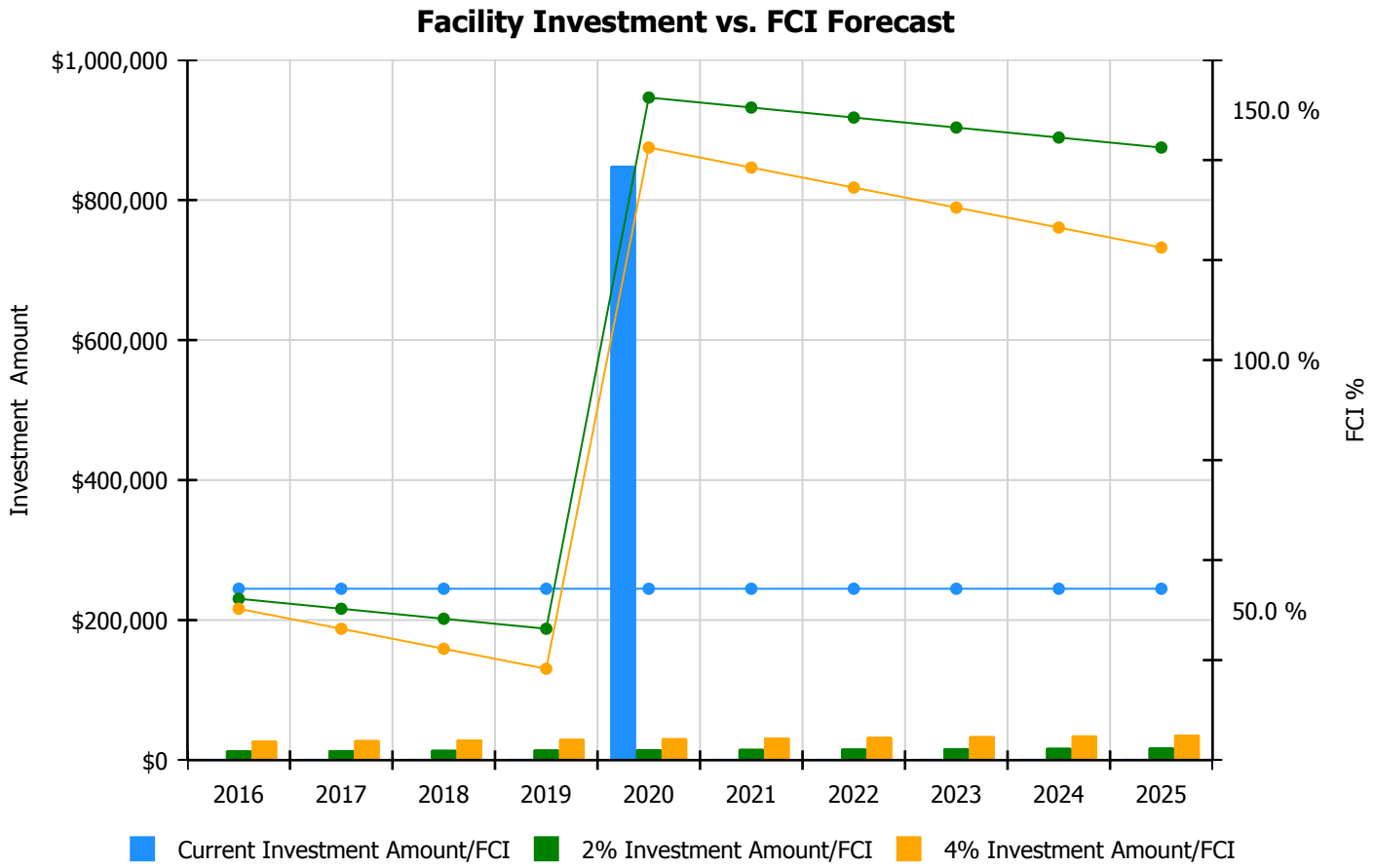
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

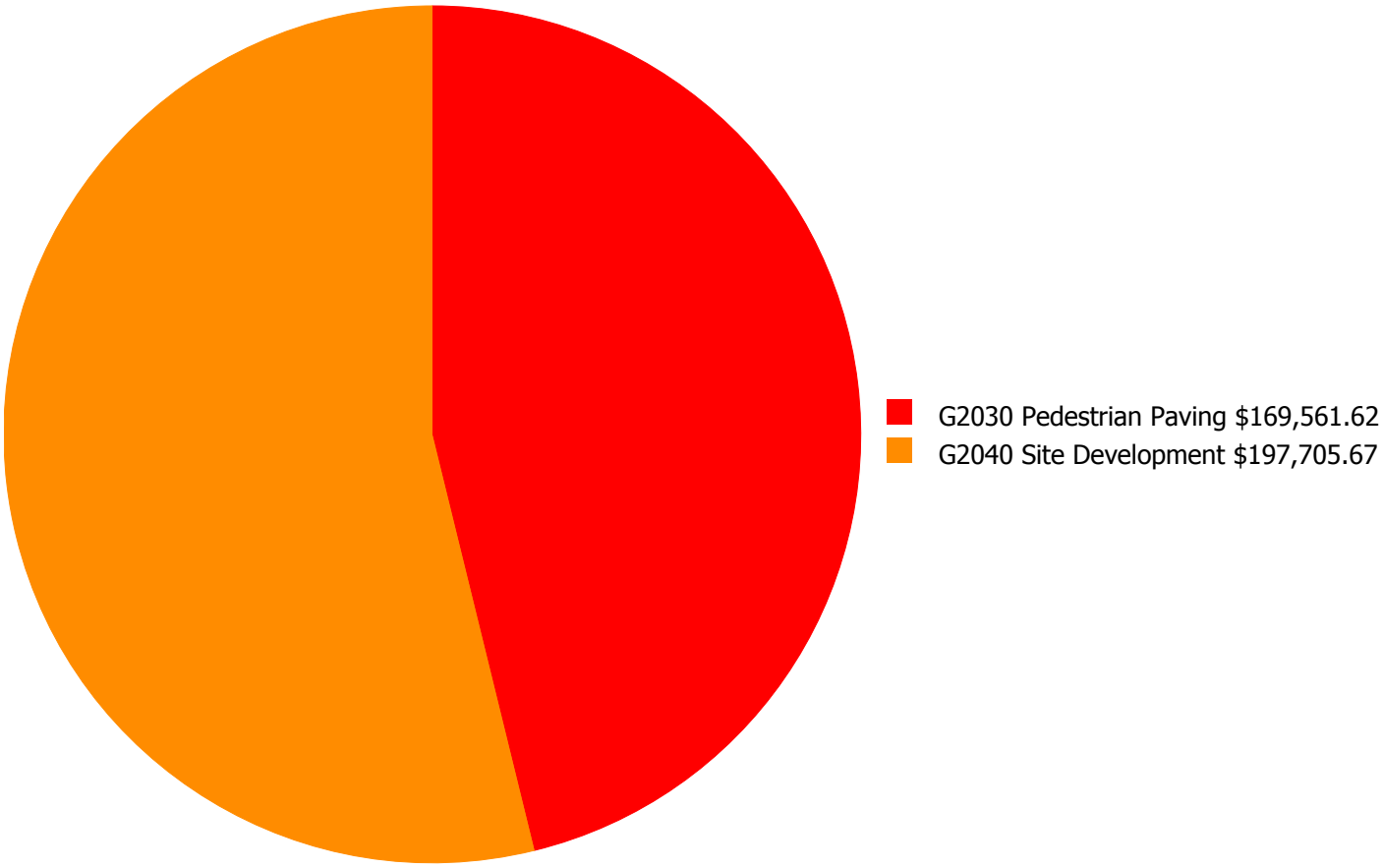
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 54.27%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$13,940.00	52.27 %	$27,881.00	50.27 %
2017	$0	$14,359.00	50.27 %	$28,717.00	46.27 %
2018	$0	$14,789.00	48.27 %	$29,579.00	42.27 %
2019	$0	$15,233.00	46.27 %	$30,466.00	38.27 %
2020	$849,055	$15,690.00	152.50 %	$31,380.00	142.50 %
2021	$0	$16,161.00	150.50 %	$32,322.00	138.50 %
2022	$0	$16,646.00	148.50 %	$33,291.00	134.50 %
2023	$0	$17,145.00	146.50 %	$34,290.00	130.50 %
2024	$0	$17,659.00	144.50 %	$35,319.00	126.50 %
2025	$0	$18,189.00	142.50 %	$36,378.00	122.50 %
Total:	**$849,055**	**$159,811.00**		**$319,623.00**	

Deficiency Summary by System

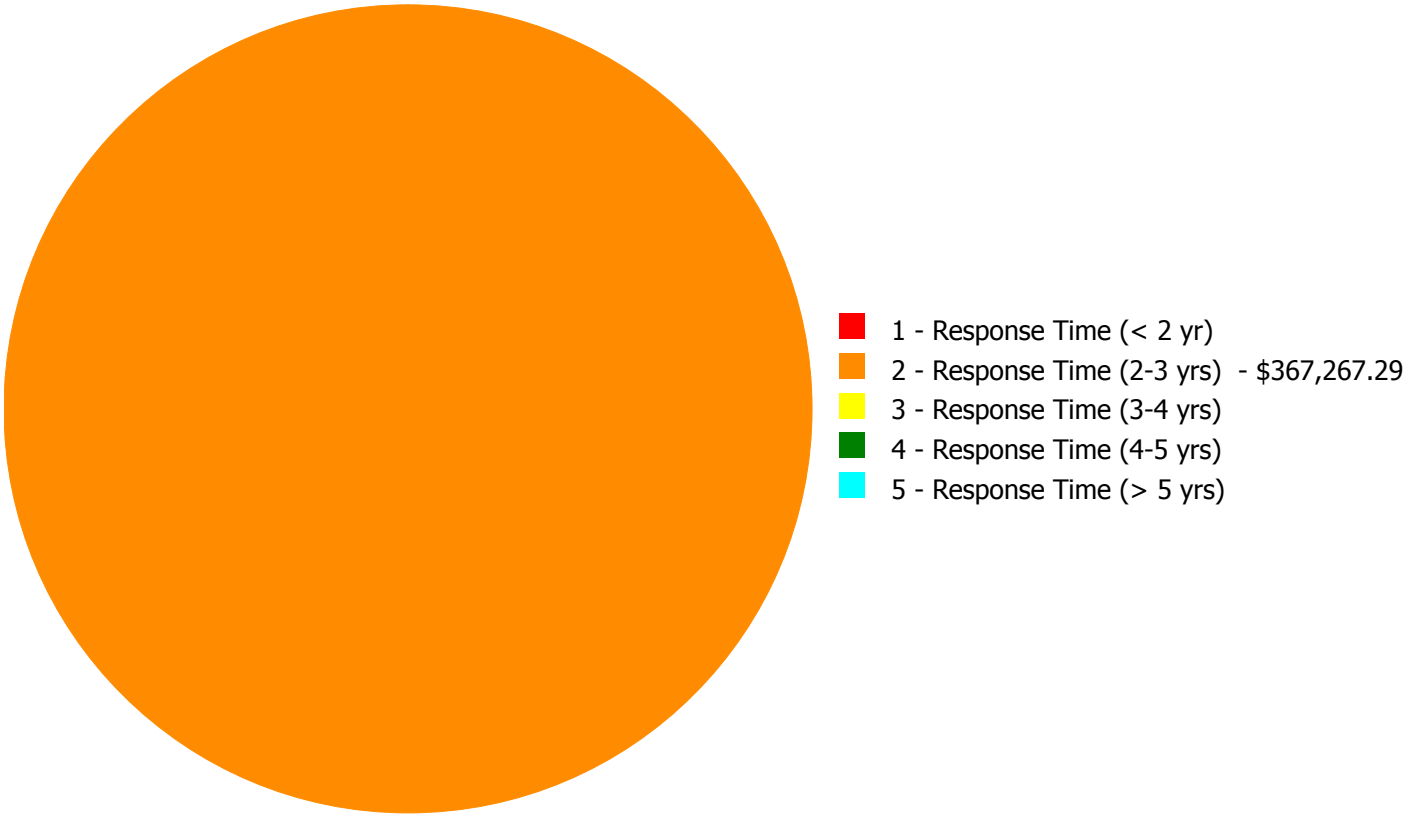
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $367,267.29

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: $367,267.29

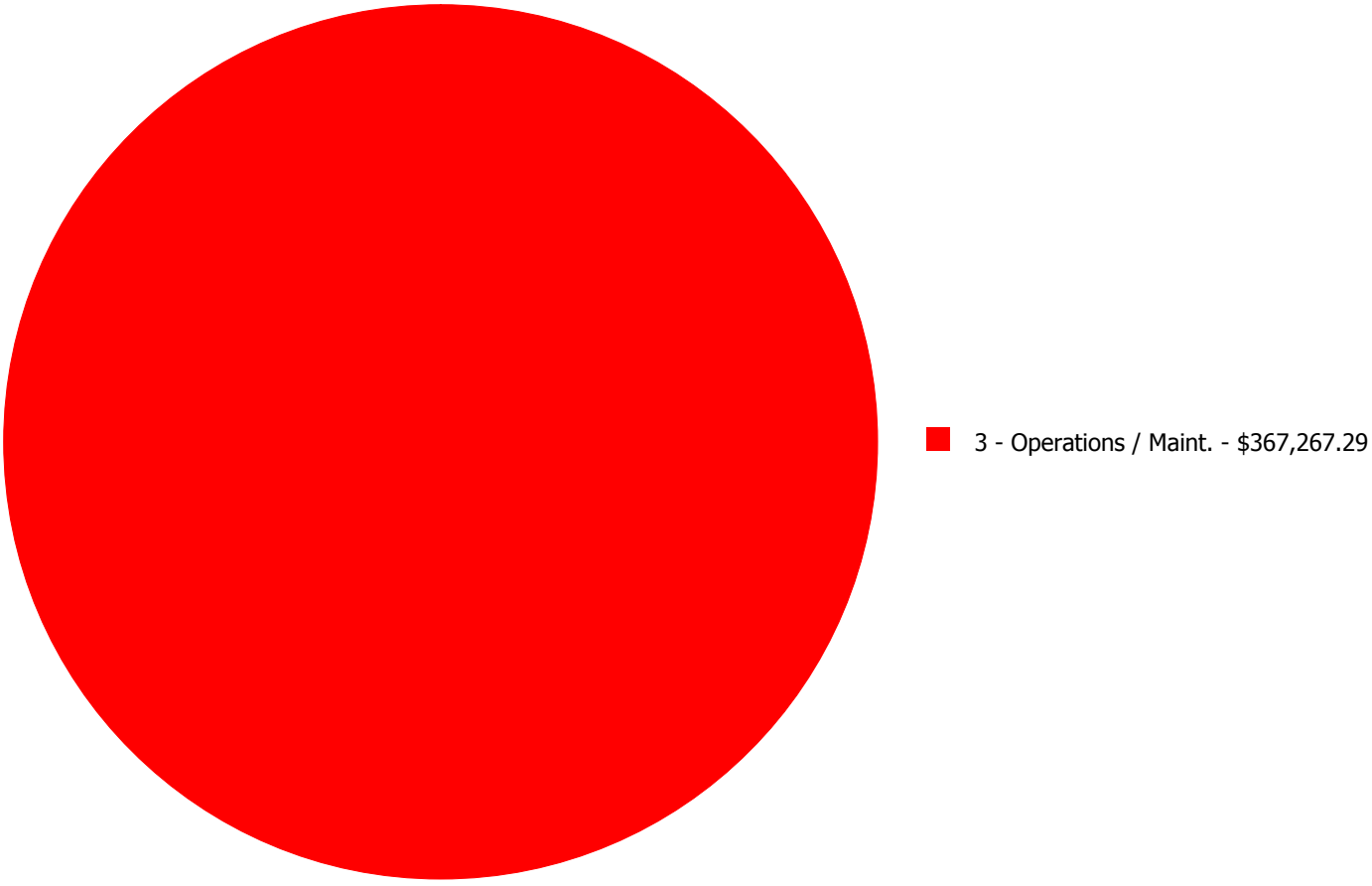
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2030	Pedestrian Paving	$0.00	$169,561.62	$0.00	$0.00	$0.00	$169,561.62
G2040	Site Development	$0.00	$197,705.67	$0.00	$0.00	$0.00	$197,705.67
	Total:	$0.00	$367,267.29	$0.00	$0.00	$0.00	$367,267.29

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: $367,267.29

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: concrete playground

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 8,000.00

Unit of Measure: S.F.

Estimate: $115,062.80

Assessor Name: Steven Litman

Date Created: 02/05/2016

Notes: Repave 2000sf damaged sections of concrete walkway along streets; repave 6000sf concrete playground (8,000sf total)

System: G2030 - Pedestrian Paving

Location: dumpster pad

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove and replace concrete paving - pedestrian or parking - 8" concrete thickness

Qty: 2,000.00

Unit of Measure: S.F.

Estimate: $52,547.10

Assessor Name: Steven Litman

Date Created: 02/05/2016

Notes: Repave dumpster slab and access slab to dumpster area with vehicle-grade concrete(2,000sf)

System: G2030 - Pedestrian Paving

Location: exterior stairs

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Regrout joints between stone treads and risers - LF of grout

Qty: 120.00

Unit of Measure: L.F.

Estimate: $1,951.72

Assessor Name: Steven Litman

Date Created: 02/05/2016

Notes: Regrout joints between limestone block tread/risers at misc. exterior stairs (20 treads, 6ft long)

System: G2040 - Site Development

Location: perimeter site fence

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Paint steel picket fence - LF of fence 6' high

Qty: 1,600.00

Unit of Measure: L.F.

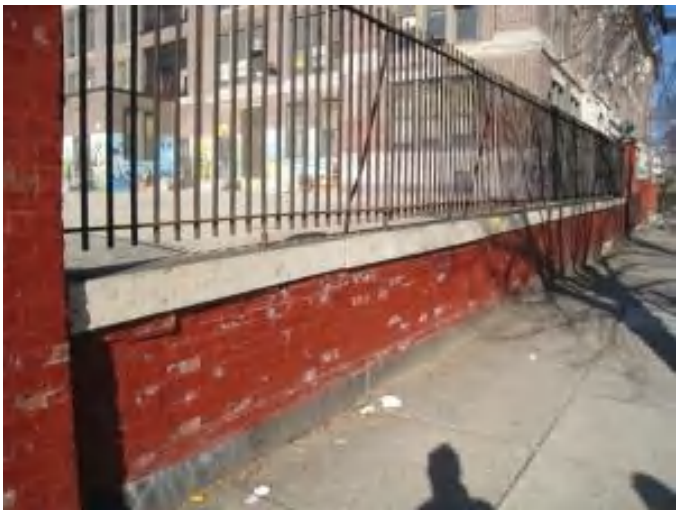
Estimate: $104,416.08

Assessor Name: Steven Litman

Date Created: 02/05/2016

Notes: Repaint rusted wrought iron fence surrounding site and along playground and raised walkway (1,600ft length)

System: G2040 - Site Development



Location: all along W. Mentor St. sidewalk

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 200.00

Unit of Measure: L.F.

Estimate: $93,289.59

Assessor Name: Steven Litman

Date Created: 02/05/2016

Notes: Repair/Reconstruct landscape retaining walls leaning and broken along W. 13th Street and playground area (approx. 200ft of retaining walls 3 feet height)

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