## 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.*

## Crossan School

| | | | |
|---|---|---|---|
| Governance | DISTRICT | Report Type | Elementary |
| Address | 7350 Bingham St. | Enrollment | 377 |
| | Philadelphia, Pa 19111 | Grade Range | '00-05' |
| Phone/Fax | 215-728-5014 / 215-728-5955 | Admissions Category | Neighborhood |
| Website | Www.Philasd.Org/Schools/Crossan | Turnaround Model | N/A |

## Building/System FCI Tiers

**Facility Condition Index (FCI) = Cost of Assessed Deficiencies / Replacement Value**

| < 15% | 15 to 25% | 25 to 45% | 45 to 60% | > 60% |
|---|---|---|---|---|
| **Buildings** | | | | |
| Minimal Current Capital Funding Required | Refurbish Systems in building | Replace Systems in building. | Building should be considered for major renovation. | Building should be considered for closing/replacement. |
| **Systems** | | | | |
| Perform routine maintenance on system | System requires minor repairs | System should be studied to determine repair vs. replacement. | System is nearing end of its life expectancy and should be considered for replacement | System should be replaced as part of the Capital Program |

## Building and Grounds

| | FCI | Repair Costs | Replacement Cost |
|---|---|---|---|
| **Overall** | **54.81%** | **$8,521,476** | **$15,546,186** |
| Building | 55.55 % | $8,361,398 | $15,050,924 |
| Grounds | 32.32 % | $160,078 | $495,262 |

## Major Building Systems

| Building System | System FCI | Repair Costs | Replacement Cost |
|---|---|---|---|
| **Roof** (Shows physical condition of roof) | 00.00 % | $0 | $453,840 |
| **Exterior Walls** (Shows condition of the structural condition of the exterior facade) | 00.36 % | $4,032 | $1,123,097 |
| **Windows** (Shows functionality of exterior windows) | 175.45 % | $961,480 | $548,008 |
| **Exterior Doors** (Shows condition of exterior doors) | 245.47 % | $108,302 | $44,121 |
| **Interior Doors** (Classroom doors) | 231.50 % | $247,244 | $106,802 |
| **Interior Walls** (Paint and Finishes) | 11.34 % | $45,593 | $401,954 |
| **Plumbing Fixtures** | 84.59 % | $348,004 | $411,387 |
| **Boilers** | 22.54 % | $128,072 | $568,091 |
| **Chillers/Cooling Towers** | 65.60 % | $488,652 | $744,877 |
| **Radiators/Unit Ventilators/HVAC** | 222.29 % | $2,907,811 | $1,308,100 |
| **Heating/Cooling Controls** | 158.90 % | $652,744 | $410,778 |
| **Electrical Service and Distribution** | 174.63 % | $515,418 | $295,152 |
| **Lighting** | 07.81 % | $82,394 | $1,055,243 |
| **Communications and Security** (Cameras, Pa System and Fire Alarm) | 83.24 % | $329,033 | $395,260 |

*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

# S823001;Crossan

Final

## Site Assessment Report

January 31, 2017

PARSONS

# Table of Contents

## Site Executive Summary

The organization of this report, as displayed in the Table of Contents, follows the structure of the associated eCOMET database. The overall node for each school campus begins with the letter "S", which indicates the "Site" label. Each Site is comprised of separate "Building" and "Grounds" nodes; their asset names begin with the letters "B" and "G" respectively. Information rolls up to the Site node from the Building and Grounds nodes. This Site report combines facility information with subsections for the Buildings And Grounds nodes.

The basis for the evaluation of condition is the functional systems and elements of a building and grounds organized according to the UNIFORMAT II Elemental Classification. The grouping of these systems and elements and applying a current replacement value to them develops a representative building cost model. Cost Models are typically developed for similar building types and functions. Evaluation of systems and their elements takes into account their current replacement values, life cycles, installation dates and next renewal dates. Systems and their elements that are within their useful lives are further evaluated to identify current deficient conditions that may have a significant impact on a system's or element's remaining service life, and to determine if they are beyond their predicted expected life. The system's or element's current replacement value is based on RS Means Commercial Cost Data.

Following are the cost model's system details for this facility. The Replacement Value is the amount needed to replace the property of the same present value. The Current Repair Amount, also known as Condition Needs, represents the budgeted contractor installed costs plus owner's soft costs for the repair, replacement or renewal for a component or system level deficiency. It excludes contributing costs for other components or systems that might also be associated with the corrective actions due to packaging the work. Facility Condition Index (FCI) is an industry-standard measurement calculated as the ratio of the repair costs to correct a facility's deficiencies to the facility's Current Replacement Value. Condition Index (CI) for a system is calculated as the sum of a the deficiencies divided by the sum of a system's Replacement Value (both values include soft-cost) expressed as a percentage ranging from 0% 100%.

| | |
|---|---|
| Gross Area (SF): | 30,428 |
| Year Built: | 1924 |
| Last Renovation: | |
| Replacement Value: | $15,546,186 |
| Repair Cost: | $8,521,475.93 |
| Total FCI: | 54.81 % |
| Total RSLI: | 62.81 % |

**Description:**

Facility Condition Assessment
October 2015

**School District of Philadelphia**
**Kennedy Crossan Elementary School**
**7350 Bingham Street**
**Philadelphia, PA 19111**

30,428 SF / 400 Students / LN 08

**General**

Kennedy Crossan Elementary School is located at 7350 Bingham Street. The main entrance faces Bingham Street. The main building was constructed in 1924, has 30,428 square feet, and is 2 stories tall with a full basement. This is a small school with only 13 classrooms, an auditorium, a "gymateria" (gym-cafeteria) and an IMC. The precast concrete "portable building" ("Element 2") constructed in the rear playground around 1967 was not inspected since it is considered "temporary". The Kennedy Crossan School can be found on the National Historical Register, number 88002261 with the address of 7341 Palmetto Street. This building, designed by Irwin Catharine, the Philadelphia Public School Chief Architect during that time and is considered Late Gothic Revival with stone

exterior wall construction and limestone coping, window heads and sills, and grand entrance portico. Paul Devlin, the Building Engineer accompanied the team during the building inspection.

The Inspection team met with Principal Lynn Millard at the time of inspection. She expressed concern over a number of deficiencies such as the lack of toilet facilities for the children on first and second floors (the District should consider converting one set of Faculty toilets on the 1st or 2nd floor to children's toilets), poor functioning gang toilets on basement floor, clock system that does not function, peeling paint on many walls, and a heating system that does not provide uniform heat (the heat is either all on or all off). She also indicated that a security camera system is required to be able to monitor outside doors and the site.

**Architectural/Structural**

Foundations appear to be constructed of concrete exterior walls and brick internal walls. Boiler Room walls are mostly in good condition with one vertical crack observed in a foundation wall and a crack along the intersection of the sloped concrete front stair support slab and the foundation wall; these cracks are less than ¼" thickness and should be structurally repaired to prevent further growth of the cracks. Extensive peeling paint was observed on some of the basement walls, mainly due to high room moisture related to excessive steam released by the boilers, but in general, the boiler room appeared to be well maintained. Other rooms in the basement are the only student toilet rooms in the building and the gymnasium/cafeteria ("gymateria"). Footings were not seen and their construction type or condition could not be ascertained. .

Floor slabs in the boiler room are in good condition although covered with dirt and in need of stripping, cleaning and repainting. Exposed concrete floor slabs in other basement rooms also need stripping and resealing. Upper floor slabs are also constructed of cast-in-place concrete with cast-in-place concrete beams. Cracking and spalling of the above ground concrete structure was not observed anywhere.

Roof construction over the main building is reinforced concrete beams and deck, bearing on masonry walls. The superstructure is constructed of reinforced concrete columns, beams, and floor slabs. The main building roof deck is flat with minimum overall slope; areas around roof drains are depressed for drainage and crickets are located between roof drains to improve flow into the roof drains. Roof access is via a door out of a stone masonry penthouse; a steep, narrow, dark stairway with very low headroom up from a 2nd floor stairway landing providing access to the roof through a penthouse. The roof over the auditorium is constructed of concrete beams and decking like the other areas of the building. From the small plank in the dark attic space adjacent to the roof access door, the roof structure appeared to be in good condition.

Exterior walls and are in very good condition. It appears as if there was an extensive stone repointing project completed over the last few years as there were no cracks observed in stone wall joints and many of the upper stone joints appeared to be lighter than the other joints. Even though the chimney was also apparently repointed, some joint cracking is reappearing at the base of the stack and should be repointed before they grow into longer and deeper cracks. There are leaks along the base of the auditorium wall where the recessed walks into the building are located; water is seeping in above the cafeteria windows along the intersection of the stone wall and the concrete walk. Evidence of the water seepage can be seen in the cafeteria over the windows. This are should be sealed to prevent further seepage into the wall below.

Exterior windows were replaced in the 1990's with bronze anodized aluminum frame operable single hung units with single thickness clear plexiglass acrylic vision panel glazing. Windows are in poor condition with oxidized frames and severely scratched single-pane plexiglass vision panels. Operable units are difficult to operate up and down or do not stay open due to broken internal counterbalance weights, accidentally slamming closed in some cases – a potential safety hazard. Single pane plexiglass units do not meet today's energy code requirements and are large sources of heat loss. Basement level windows are at grade when viewed from the outside; galvanized steel security screens attached to basement windows, the lower section of 1st floor windows, and the auditorium windows are in good condition.

Exterior doors are painted steel framed flush hollow metal units with steel frames. The main entrance on Bingham Street and other side entrances have decorative limestone headers and jambs framing the doors. The main entrance also has limestone arch work and the name of the school engraved into a stone panel. The limestone has been recently cleaned and stands out in highlighting the style and artistic technique of that era. Doors have small glazing vision panels, protected with steel mesh. Some doors surfaces are in poor condition with worn paint and dented panels and frames, in need of repair. There are no ADA compliant handicap entrances, no accessible ramps and no elevators. A handicap entrance should be provided; the southwest stair into the niche adjacent to the auditorium is an area where a ramp could be constructed.

Roof covering on the main building flat roof is a ceramic granule impregnated, fully adhered rolled asphalt sheet system, installed 3 years ago and in very good condition. Brick rooftop structures and stone parapets are flashed with metal flashing the same granule impregnated membrane. Fan structures lack flashing and are sealed only with caulking and a black sealant applied to the penetration

and the roof membrane. A new off-white factory painted aluminum coping is installed on top of the stone wall and is in good condition. Roof openings include toilet room vents, ventilation ductwork, and roof drains. Flashing of the penetrations appears to be in good condition, although it looks like they have already been repaired at least once. Painted aluminum counter flashing matches the coping and covers the connection of the roof flashing into the brick rooftop structures and parapets. Crickets are used to provide additional slope for water to reach roof drains. A sort of overflow scupper is created by use of "battlements" along the front of the main roof coping, which are decorative gothic revival recesses in the coping that also allow water to flow off the roof if the roof drains were clogged. Good continued maintenance is required to help this new membrane last as long as possible.

Partitions in basements are constructed of brick masonry. The upper 3 floors of the building have plaster on wood lath on masonry partitions. There are wood framed clerestory glass panels located in walls above classroom doors in the corridors. These panels are in generally good condition being above the reach of anyone, but the glass is not wired or fire rated and should be replaced with a fire rated element. Except for areas damaged by leaks and heavy moisture, partitions are in good condition.

Interior doors are original wood and plate glass (not fire rated or wired) raised panel doors with original hardware or replacement hardware at least 20 years of age. Wood doors to the Fire Towers and some basement doors were replaced with plain wood doors with narrow vision panels, which are now all in poor condition. Most original wood doors are damaged, have broken or replacement molding and glass, and old knob-type hardware. Stairways doors are steel and wired glass units which do not latch, are dented and damaged, and are not fire rated. Some interior basement doors are painted wood doors in metal frames. Doors are generally in poor condition throughout the building, are not ADA compliant, do not have ADA or proper locking hardware, and are not fire rated where required. Stairway doors do not positively latch as required of fire rated doors. Classroom doors do not have security locking feature from inside classrooms. All doors and hardware need to be replaced. The only doors that might be salvaged are the auditorium and the lobby doors; being a historical building, it might be worth considering ways to repair and upgrade the glazing and construction of these highly decorative corridor doors.

Interior fittings/hardware include black slate chalkboards with oak frames and cork bulletin board surrounds, still in good condition and used today. Classrooms and the Library have freestanding book cases and low shelving around the other walls... Some classrooms have smartboards which connect to the teacher's laptop computers, used for teaching in lieu of blackboards. Toilet room partitions are new solid plastic replacement partition in the boy's and girl's gang toilets in the basement. They are in good condition. Toilet room accessories (toilet paper dispensers, soap, paper towel or dryers, grab bars, door latches) have been recently replaced and seem to be present and operational.

Stair construction consists of concrete treads with steel nosings, concrete risers, and concrete stringers with wood handrails (29" high), wood guard rails (36" high), and steel balusters with 3" spacing. Since handrail and guard heights are not in compliance with today's codes, new handrail and guard systems are required. Concrete treads, platforms and landings have years of dirt sealed into the surface; they should be stripped and resealed. Some basement stairs are painted which does not necessarily make them look any better, although stripping them at this point is probably not an option; this stairway should be repainted. The front staircase is all marble with steel and wood handrails and is in excellent condition; the center handrail could be the original handrail, but it does not meet today's code for height and extensions at top and bottom. Replacing it should be considered but in light of the possible historical significance, it might be acceptable to leave it in place.

Wall finishes in all 1st and 2nd floor spaces are plaster which is in good condition. There are areas of water damage on walls in the auditorium backstage area due to past leaks before the roof replacement; it is thought those leaks have been corrected. There are no folding wood partitions in this school. Corridors have 48" high marble panel wainscots that protect the walls from damage and are generally in good condition. Some of the stained oak wood trim in classrooms, halls, offices is damaged and worn requiring filling and but the trim can probably be refinished. Student toilet room ("gang" toilet rooms) located in the basement, have brick walls with a glazed brick wainscot and painted brick above, all in good condition. The auditorium has a dark stained oak paneled wood wainscot that is in need of repair and refinishing. There are some areas of plaster walls in the auditorium back stage that have been damaged from water entering the building through the roof or steel lintels. It is thought that these leaks have been addressed and that the plaster should be repaired. Plaster walls above the wood wainscot in the auditorium are in good condition. The stage area has a simple, subtle, engaged pilaster and beam design around the stage opening, constructed of plaster. The gym/cafeteria ("gymateria") has glazed brick and painted brick walls like the toilet rooms and windows or doors on all walls. The basketball basket was located between two windows which are only partially protected by security screens.

Floor finishes on 1st and 2nd floors consist of dark stained oak floors in the auditorium and wood floors or VCT (vinyl composition tile) in classrooms. Wood floors are in good enough condition to be stripped, sanded, and refinished with minor plank repairs required in the auditorium. The upper floor classroom with 12"x12" vinyl composition tile (VCT) over the wood and faculty office with VCT are in good condition. The gymnasium which also serves as the cafeteria is finished in VCT. That floor is installed over concrete, is not in good condition, and should be replaced. Stair walking surfaces are finished in exposed concrete that have years of dirt ground into the surfaces; these should be stripped, cleaned and resealed. All corridor floors are finished with 2'x2' (nominal size) concrete tiles

which appear to be a monolithic system and highly durable. Edges along the walls are painted; these corridor floors have recently been stripped and cleaned and look very good; painted coved edges are somewhat worn but are also in good condition. These floors demonstrate the fact that these nearly 100 year old concrete floors are durable and good looking if cleaned and refinished properly. The IMC (Instructional Material Center) is in the basement down 8 steps from the first floor but up from the basement; it is located on its own level in the building. It is finished with carpet which should be replaced.

Ceiling finishes are mostly exposed concrete deck throughout the building with suspended or surface mounted fluorescent lighting fixtures. One classroom has a suspended acoustical tile ceiling with recessed fluorescent lighting fixtures in good condition. The auditorium has a decorative plaster ceiling with suspended chandeliers. The auditorium ceiling has water damage from leaks that (it is said) have been repaired; the ceiling should be repaired and repainted.

Furnishings consist of folding wood seating in the auditorium. Some of the chairs need to be refinished, but in general most seem to be operating properly.

There is no elevator or ADA accessible ramp into this building. With ramp access to a basement door and a first floor door, it may not be necessary to provide an elevator. If access is provided, the location of the Library would still be isolated from access, being on its own level between the basement and the first floor; it will need to have a small "chair lift" or relocated to provide access to all students.

**Mechanical**

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. Many of the original plumbing fixtures remain in service, however, these fixtures have reached the end of their service life and should be replaced. New fixtures will provide lower water consumption and provide savings on water heating costs. The bathrooms are also equipped with floor drains.

There are a combination of electric water coolers and drinking fountains in the corridors at the restrooms as well as other corridor locations are wall hung fountains. Most fixtures appear to be the original installed equipment. The replacement of all drinking fountains is recommended as the equipment is approximately 92 years old and beyond its service life.

Wall hung service sinks are original and are available throughout the building for use by the janitorial staff. Service sinks are typically located in the corridors near EWCs or drinking fountains. The sinks appear have exceeded their service life, and should be replaced.

Domestic Water Distribution – It appears that the 3" domestic water service piping is mostly soldered copper. Water service enters the building in the basement, with double check backflow preventer (RPZA – reduced pressure zone assembly) and a 2" water meter on the main line upon entering the building. The water meter appears to be new. The piping is copper with soldered joints. The distribution piping appears to be original and is at the end of its service life and is recommended to be inspected and repaired as needed.

There is one natural gas fired vertical tank water heater, Bradford White, 75 gallon, model 75T80B3N, gas input 76,000 btuh at this facility which is located in the boiler mechanical room. The hot water system is equipped with a recirculation pump as well. The water heater appears to be in satisfactory condition and should not need replacement within the next 10 years as it appears to have been installed in 2013. A water softener was located in the boiler room for treating the boiler make up water system. The water softener system appears to be relatively new.

Sanitary Waste - The sanitary waste piping system in the original 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 flow.

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 overflow scuppers for the building. A duplex sump pump is located in the boiler mechanical equipment room.

Energy Supply - Duplex fuel oil supply pumps provide the required fuel to the boilers when operating with fuel oil. The fuel storage tank is located underground in the paved area nearing Palmetto Street. The fuel pumps and controls are original vintage, are beyond their serviceable life and therefore should be replaced. The 6" natural gas service enters the building in the basement and is equipped with a gas booster system. 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 2,702 MBH Weil McLain 94 series, cast

iron, sectional, model 1394 steam boilers with dual fuel burners. All boilers are equipped with Power Flame dual fuel burners, natural gas and number 2 fuel oil, model CR4-GO-25. The boilers appear to have been install in the 1990's and based on this would need to be replaced in the next 10 – 15 years. There is draft control on both boiler flues. Combustion air louvers equipped with electric actuators serve the boiler room to provide combustion air for the boiler operation. Burner controls provide full modulation with electronic ignition. 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.

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 piping 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. The District should hire a qualified contractor to examine the distribution piping and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 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. The condensate is returned directly to the boiler feedwater tank and then pumped back to the boiler. There are no condensate receivers or pumps. The condensate return piping is black steel with threaded joints. The boiler feedwater assembly is equipped with three pumps and a pump control panel. Replace boiler feedwater system. The steam traps are failing throughout the building and have not been replaced for 20 years as per the building engineer. 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 nearing the end of their service life and should be replaced.

Fresh air is admitted into the building by opening windows. The auditorium is heated by steam radiators with enclosures or guards which are located at the perimeter walls. In addition for the auditorium, ventilation and additional heating for the space was provided by a house fan in the basement which is operational but is not used. The air was pushed through a supply plenum which distributed air through mushroom supply air diffusers below the auditorium seats. The air was exhausted from other ducts built into the walls, up through the attic space, and out through roof mounted vents.

The building uses steam radiators in the classrooms, stair landings, hall, corridors and bathrooms and currently is the sole source of heat for these areas. In some locations steam convectors are utilized. During our survey many of the steam radiators had protective covers, however, there are some steam radiators in service without guards or enclosures, these units should be replaced with finned tube convectors or have guards added to protect students from exposure to the hot surfaces.

The gymnasium/cafeteria is served by horizontally ceiling suspended steam radiators. Ventilation is provided by operable windows. It is recommended to replace these systems with a roof top heating and cooling unit with an overhead supply air distribution system and return air ductwork and low return intake grilles which would be protected from damage.

Terminal & Package Units - There are a few which have window air conditioning units but predominantly the building does not have cooling systems. There are roof mounted exhaust fans of which serve the restrooms. Two split system AC cooling only units serve two server rooms in the building. One unit is 1-/12 tons (condenser model PUY-A18NHA3) while the other is a two ton unit (condenser model PUY-A24NHA3). Both units are manufactured by Mitsubishi.

Controls & Instrumentation - The original pneumatic systems still provide basic control functions. Pneumatic room thermostats drive the unit ventilators, the damper actuators and control valves. Wall mounted pneumatic thermostats on the corridor walls control the steam radiators. An air compressor which generates control air for the temperature control system could not be located. The maintenance staff reports temperature control is generally lacking throughout the facility. Potential problems with oil, moisture or dirt in the pneumatic copper tubing can be one source of problems. 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 92 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. Installing a sprinkler system with quick response type heads should reduce insurance costs by providing protection for the property investment. A fire pump may be required depending on the available city water pressure.

**Electrical**

Site Electrical Service for the main building is delivered from medium voltage overhead lines on wooden poles located along Bleigh Street. One pole-mounted power transformer with medium voltage primary service (voltage level unknown at this time) and a 120/208VAC secondary transformer at an estimated available power of 112.5KVA are installed for supplying power to facility.

The service entrance to the facility consists of a disconnect switch and utility meter and two main distribution panels (one for lighting and one for power), located in an electrical room in the basement of the building. Distribution panels do not have enough capacity for future loads and should be replaced.

Power distribution is accomplished with several lighting/receptacle and power panels located throughout the building. All panel boards along with the associated wiring have exceeded their useful life and should be replaced. As recommended by Building Owners and Managers Association (BOMA), panel boards shall be replaced with those having more circuit breakers than needed to accommodate additional branch circuits that might be needed in the future.

Classrooms, corridors, offices, and other areas typically have an adequate number of duplex receptacles on each wall. No major deficiencies with respect to receptacle numbers and location were observed.

Approximately 95% of lighting fixtures are fluorescent-type with T8 lamps. In general lighting fixtures are in good working condition with a few fixtures requiring replacement. Incandescent lighting fixtures are used in some areas such as the basement corridors and attic spaces. These fixtures are near the useful life and are no longer commercially available. They should be replaced with fluorescent lighting fixtures. The Auditorium has decorative chandeliers which are in need of repair. Since they are old, vintage fixtures, the recommendation is to replace them with updated lighting fixtures that maintain the vintage look of the old fixtures. The gymnasium has 2x2 surface mounted metal halide fixtures. These fixtures are near end of the useful life and their lighting level does meet IES (Illuminating Engineering Society) minimum requirements; these fixtures should also be replaced.

The Fire Alarm System consists of a 120V manual fire alarm system. The system does not meet current fire alarm codes and should be replaced.

The school telephone and data systems are new and working adequately. A main distribution frame (MDF) along with 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) serving as the communication system for the building. The school also equipped with Wi-Fi system.

Separate PA system does not exist. The school uses the telephone system for public announcements. This system is working adequately.

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

The existing master clock system consists of a simplex master controller with electric clocks in classrooms and offices. The system is old and has exceeded its useful service life and is not functioning properly thus requiring replacement. The existing bell system is working adequately.

Video surveillance system is not provided in the school. The school has an access control system including door contact and motion security sensors in critical areas. 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.

Public address / Music system and a separate PA system does not exist. The school uses the telephone system for public announcements. This system is working adequately.

Intercom and paging systems are completely functional. The paging system is one way communication from office to classrooms. Two way communications are accomplished through wall mounted phones in the classrooms and other areas. The paging speakers are old and shall be replaced.

School is provided with time system controller consisting of combination of clock and speaker installed on the wall in each classrooms and a master time programmer manufactured by ”STANDARD” located in the main office.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.

Emergency Power System (backup power generator) is provided in the school. A 10KW, 240/120V, 1PH, 3W, diesel generator including transfer switch, located in the Boiler Room. It feeds emergency lighting and other critical emergency loads. The system is old and has exceeded its useful service life.

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

The emergency power system provides power to emergency lighting fixtures and exit lights in the building. A sufficient number of lighting fixtures in corridors, egress ways and exit signs are fed by emergency back-up power.

Lightning Protection Systemis adequate. It is accomplished with air terminals mounted on the chimney; however, some repairs are needed. A study is needed to verify that the air terminals provide the proper coverage.

Grounding is present and is adequate.

Elevator is not provided in the school.

Site Lighting System is adequate. There are sufficient numbers of flood lights with photo cells provided around the building. No major deficiencies were observed.

Site Video Surveillance system is not provided in the school.

Site Paging system is provided in the school and working adequately. Existing speakers provide adequate coverage in the playground.

**Grounds**

Paving in the rear is constructed of asphalt. Approximately one-third of the paved area needs to be repaved; the other area should be crackfilled and sealed to preserve the surface life. This expansive and completely fenced in paved area serves as the playground; faculty parking is not permitted inside and is located along local side streets. Granite block stairways into the rear of the building are need of regrouting. One of the stair and walkways (the south side of the auditorium) has a gap between the concrete walkway and the exterior auditorium wall which is the probably source of water entering the cafeteria windows below; this gap should be filled with a backer rod and sealant to block the water infiltration. New handrails and guards are required at the two exterior stairs leading away from the auditorium and the basement window well.

Concrete walkway around the side, front and rear of the building are in good condition and appear to have been recently repaired. Some isolated 4'x4' panels are cracked and in need of replacement.

Painted steel fencing is generally in good condition and appears to have been recently installed. There is a gate providing street and pedestrian access, also installed recently with the new fence. However, the steel fence over the areaway to the basement needs to be replaced.

## RECOMMENDATIONS

**Architectural**

- Strip and repaint concrete foundation (basement) walls in mechanical rooms (5,000sf)
- Clean and repaint basement floor in mechanical rooms (5000sf)
- Repair vertical and horizontal cracks in mechanical room foundation, slab above over window, and along edge of front stair support slab (60 ft.)
- Seal gap between walkway into door near auditorium and auditorium exterior walls (40 ft.)
- Replace all exterior windows with insulated single hung units (160)3.5x8
- Replace all exterior doors with ADA and code compliant exit hardware; repaint doors and frames. (14)3x7
- Remove non-rated glass panels between classrooms and corridors; fill with fire rated glazing (15 @ 18sf)
- Remove and replace all wood interior doors, frames and hardware in classrooms with fire rated doors to corridors and non-rated doors to closets, offices, etc. (50)

- Provide security hardware for classrooms and offices, locking from inside classroom. (20)
- Refinish first floor lobby, auditorium, and office doors opening to corridor, replacing glazing with fire rated glazing (12 door panels)
- Provide handicap accessible toilet room accessories and new partitions for 1 toilet room ($2^{nd}$ fl.) (2 water closets, 1 lavatory)
- Repair water damage, cracks, and repaint all damaged interior plaster walls and ceilings in auditorium, gymateria and corridors (1,000sf)
- Remove and replace stairway handrails and guards with code compliant systems (2) 3 story;=50x6=300 ft. of handrail+guard
- Regrout cracking joints between limestone block tread/risers at exterior stairs (10 treads)
- Strip, sand, repair and refinish all wood floors in classrooms and in auditorium (14,150sf)
- Refinish wood wainscot in auditorium (600sf)
- Remove and replace all 12"x12" VCT floors in gymateria (3150sf)
- Repair or replace damaged folding wood auditorium chairs (500)
- Replace carpet in IMC and other rooms (800sf)
- Repoint chimney (100sf)

**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.
- Replace service sinks (janitor sinks) 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.
- Replace the gallon underground storage tank (UST) installed before 2000.
- Add automatic sanitizing chemicals to the stainless steel sink in the cafeteria.
- Replace natural gas fired vertical tank water heater.
- 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.
- Replace boiler feedwater system.
- Hire a qualified contractor to examine the steam and condensate piping in service for 92 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 duplex fuel oil pumps.
- Replace the steam convection units and any of the original radiant heating (manifold) terminals fashioned from welded piping still present in the building (or add guards) with finned tube elements to protect students from exposure to the hot surfaces.
- Install unit ventilators throughout the building designed to provide adequate ventilation per ASHRAE Stds 62. The new units shall be equipped with hot water / chilled water coils and integral heat recovery wheels. Install steam converters in the existing boiler room with circulating pumps, distribution piping and controls to provide heating hot water for the new coils.
- Remove the window air conditioning units and install a 250 ton air-cooled chiller on the roof with chilled water distribution piping and pumps located in a mechanical room on the basement level to supply more reliable air conditioning for the building with a much longer service life.
- Provide ventilation, heating and cooling for the gymnasium/cafeteria by installing an air handling unit.
- Provide ventilation for the corridors at four first floor entryways by installing fan coil air handling units hung from the structure with outdoor air ducted to the unit from louvers in the window openings

**Electrical**

- Upgrade existing service entrance for adding a new 1200A, 208/120V, 3PH, 4 wire switchboard.
- Replace the entire distribution system with new panel boards and new feeders. Provide an arc flash label on all new panel boards. Estimated, 6 panel boards.
- Replace existing lighting fixtures with new fluorescent fixtures where existing fixtures are not working. Estimated 40 each.
- Replace existing incandescent fixtures in basement and other areas with fluorescent lighting fixtures. Estimated 25 each.
- Replace gymnasium luminaires with high-bay LED fixtures. Estimated 15 each.
- Replace the existing fire alarm system with an automatic fire alarm system including smoke detectors in corridors and other areas recommended by the NEC. Install horn/strobes in classrooms, corridors, offices, toilets, library and other areas as

recommended by electrical codes.
- Provide master clock system including wireless master clock controller and new clocks in classrooms and offices.
- Provide a new video surveillance system including cameras and Closed Circuit Television (CCTV) unit for monitoring the system. Cameras should be installed in the corridors, school entrance doors and on the walls around the building. Provide a monitor in the main office and the building engineer's office.
- Replace existing emergency diesel generator with a new 30KW diesel generator.
- Replace existing exit signs with battery pack types. Estimated 25 each
- Perform lightning protection studies to ascertain that the mechanical equipment on the roof is protected against lightning strikes.
- Provide new stage lighting and lighting controller in the Auditorium.
- Provide new sound system including a freestanding 19" rack located in the backstage area with a mixer, amplifiers, CD player, cassette player, AM-FM radio, graphic or parametric equalizer, and receivers for wireless microphones.

**Grounds**

- Repave damaged sections of asphalt playground area (6,000sf)
- Repair concrete walkways (1000sf)
- Crack fill and reseal remaining sections of asphalt playground (9000sf)
- Replace steel fence over basement areaway. (60ft)
- Add handicap ramp to rear door (80ft)

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg Lot Tm: | Lot 3 / Tm 2 |
| Status: | Accepted by SDP | Team: | Tm 2 |
| Site ID: | S823001 | | |

## 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 % | 0.12 % | $683.20 |
| B10 - Superstructure | 35.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 57.65 % | 62.60 % | $1,073,814.06 |
| B30 - Roofing | 85.00 % | 0.00 % | $0.00 |
| C10 - Interior Construction | 22.46 % | 34.75 % | $259,462.70 |
| C20 - Stairs | 40.00 % | 238.52 % | $102,333.19 |
| C30 - Interior Finishes | 53.35 % | 18.79 % | $265,788.22 |
| D10 - Conveying | 0.00 % | 0.00 % | $0.00 |
| D20 - Plumbing | 99.14 % | 110.41 % | $686,016.11 |
| D30 - HVAC | 79.10 % | 123.41 % | $4,177,278.59 |
| D40 - Fire Protection | 105.71 % | 177.49 % | $435,284.67 |
| D50 - Electrical | 103.81 % | 57.71 % | $1,032,263.16 |
| E10 - Equipment | 34.29 % | 19.29 % | $93,445.81 |
| E20 - Furnishings | 100.00 % | 362.63 % | $235,028.16 |
| G20 - Site Improvements | 89.11 % | 43.43 % | $160,078.06 |
| G40 - Site Electrical Utilities | 40.00 % | 0.00 % | $0.00 |
| **Totals:** | **62.81 %** | **54.81 %** | **$8,521,475.93** |

### 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) |
|---|---|---|---|---|---|---|---|
| B823001;Crossan | 30,428 | 55.55 | $2,701,867.01 | $2,937,311.43 | $471,682.50 | $93,445.81 | $2,157,091.12 |
| G823001;Grounds | 21,800 | 32.32 | $103,927.21 | $34,245.53 | $21,905.32 | $0.00 | $0.00 |
| **Total:** | | **54.81** | **$2,805,794.22** | **$2,971,556.96** | **$493,587.82** | **$93,445.81** | **$2,157,091.12** |

### Deficiencies By Priority

- 1 - Response Time (< 2 yr) - $2,805,794.22
- 2 - Response Time (2-3 yrs) - $2,971,556.96
- 3 - Response Time (3-4 yrs) - $493,587.82
- 4 - Response Time (4-5 yrs) - $93,445.81
- 5 - Response Time (> 5 yrs) - $2,157,091.12

**Budget Estimate Total: $8,521,475.93**

## 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): | 30,428 |
| Year Built: | 1924 |
| Last Renovation: | |
| Replacement Value: | $15,050,924 |
| Repair Cost: | $8,361,397.87 |
| Total FCI: | 55.55 % |
| Total RSLI: | 62.36 % |


**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg ID: | B823001 |
| Sewage Ejector: | No | Status: | Accepted by SDP |
| Site ID: | S823001 | | |

## 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 % | 0.12 % | $683.20 |
| B10 - Superstructure | 35.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 57.65 % | 62.60 % | $1,073,814.06 |
| B30 - Roofing | 85.00 % | 0.00 % | $0.00 |
| C10 - Interior Construction | 22.46 % | 34.75 % | $259,462.70 |
| C20 - Stairs | 40.00 % | 238.52 % | $102,333.19 |
| C30 - Interior Finishes | 53.35 % | 18.79 % | $265,788.22 |
| D10 - Conveying | 0.00 % | 0.00 % | $0.00 |
| D20 - Plumbing | 99.14 % | 110.41 % | $686,016.11 |
| D30 - HVAC | 79.10 % | 123.41 % | $4,177,278.59 |
| D40 - Fire Protection | 105.71 % | 177.49 % | $435,284.67 |
| D50 - Electrical | 103.81 % | 57.71 % | $1,032,263.16 |
| E10 - Equipment | 34.29 % | 19.29 % | $93,445.81 |
| E20 - Furnishings | 100.00 % | 362.63 % | $235,028.16 |
| **Totals:** | **62.36 %** | **55.55 %** | **$8,361,397.87** |

## 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. | 30,428 | 100 | 1924 | 2024 | 2050 | 35.00 % | 0.00 % | 35 | | | $559,875 |
| A1030 | Slab on Grade | $7.73 | S.F. | 30,428 | 100 | 1924 | 2024 | 2050 | 35.00 % | 0.00 % | 35 | | | $235,208 |
| A2010 | Basement Excavation | $6.55 | S.F. | 30,428 | 100 | 1924 | 2024 | 2050 | 35.00 % | 0.00 % | 35 | | | $199,303 |
| A2020 | Basement Walls | $12.70 | S.F. | 30,428 | 100 | 1924 | 2024 | 2050 | 35.00 % | 0.18 % | 35 | | $683.20 | $386,436 |
| B1010 | Floor Construction | $75.10 | S.F. | 30,428 | 100 | 1924 | 2024 | 2050 | 35.00 % | 0.00 % | 35 | | | $2,285,143 |
| B1020 | Roof Construction | $13.88 | S.F. | 30,428 | 100 | 1924 | 2024 | 2050 | 35.00 % | 0.00 % | 35 | | | $422,341 |
| B2010 | Exterior Walls | $36.91 | S.F. | 30,428 | 100 | 1924 | 2024 | 2050 | 35.00 % | 0.36 % | 35 | | $4,031.58 | $1,123,097 |
| B2020 | Exterior Windows | $18.01 | S.F. | 30,428 | 40 | 1924 | 1964 | 2055 | 100.00 % | 175.45 % | 40 | | $961,480.00 | $548,008 |
| B2030 | Exterior Doors | $1.45 | S.F. | 30,428 | 25 | 1924 | 1949 | 2042 | 108.00 % | 245.47 % | 27 | | $108,302.48 | $44,121 |
| B3010105 | Built-Up | $37.76 | S.F. | 12,000 | 20 | 2012 | 2032 | | 85.00 % | 0.00 % | 17 | | | $453,120 |
| 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. | 12,000 | 20 | 2012 | 2032 | | 85.00 % | 0.00 % | 17 | | | $720 |
| C1010 | Partitions | $17.91 | S.F. | 30,428 | 100 | 1924 | 2024 | | 9.00 % | 1.33 % | 9 | | $7,222.31 | $544,965 |
| C1020 | Interior Doors | $3.51 | S.F. | 30,428 | 40 | 1924 | 1964 | 2055 | 100.00 % | 231.50 % | 40 | | $247,243.88 | $106,802 |
| C1030 | Fittings | $3.12 | S.F. | 30,428 | 40 | 1924 | 1964 | 2020 | 12.50 % | 5.26 % | 5 | | $4,996.51 | $94,935 |
| C2010 | Stair Construction | $1.41 | S.F. | 30,428 | 100 | 1924 | 2024 | 2055 | 40.00 % | 238.52 % | 40 | | $102,333.19 | $42,903 |

# Site Assessment Report - B823001;Crossan

| 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. | 30,428 | 10 | 1924 | 1934 | 2020 | 50.00 % | 11.34 % | 5 | | $45,592.96 | $401,954 |
| C3010231 | Vinyl Wall Covering | $0.97 | S.F. | | 15 | | | | 0.00 % | 0.00 % | | | | $0 |
| C3010232 | Wall Tile | $2.63 | S.F. | | 30 | | | | 0.00 % | 0.00 % | | | | $0 |
| C3020411 | Carpet | $7.30 | S.F. | 800 | 10 | 2015 | 2025 | 2028 | 130.00 % | 153.30 % | 13 | | $8,952.61 | $5,840 |
| C3020412 | Terrazzo & Tile | $75.52 | S.F. | | 50 | | | | 0.00 % | 0.00 % | | | | $0 |
| C3020413 | Vinyl Flooring | $9.68 | S.F. | 4,450 | 20 | 2015 | 2035 | | 100.00 % | 87.88 % | 20 | | $37,855.22 | $43,076 |
| C3020414 | Wood Flooring | $22.27 | S.F. | 14,150 | 25 | 1924 | 1949 | 2028 | 52.00 % | 50.40 % | 13 | | $158,812.36 | $315,121 |
| C3020415 | Concrete Floor Finishes | $0.97 | S.F. | 11,028 | 50 | 1924 | 1974 | 2050 | 70.00 % | 136.25 % | 35 | | $14,575.07 | $10,697 |
| C3030 | Ceiling Finishes | $20.97 | S.F. | 30,428 | 25 | 1924 | 1949 | 2028 | 52.00 % | 0.00 % | 13 | | | $638,075 |
| D1010 | Elevators and Lifts | $1.53 | S.F. | | 35 | | | | 0.00 % | 0.00 % | | | | $0 |
| D2010 | Plumbing Fixtures | $13.52 | S.F. | 30,428 | 35 | 1924 | 1959 | 2052 | 105.71 % | 84.59 % | 37 | | $348,004.24 | $411,387 |
| D2020 | Domestic Water Distribution | $1.68 | S.F. | 30,428 | 25 | 1924 | 1949 | 2042 | 108.00 % | 408.45 % | 27 | | $208,796.16 | $51,119 |
| D2030 | Sanitary Waste | $2.90 | S.F. | 30,428 | 25 | 1924 | 1949 | 2042 | 108.00 % | 146.44 % | 27 | | $129,215.71 | $88,241 |
| D2040 | Rain Water Drainage | $2.32 | S.F. | 30,428 | 30 | 1924 | 1954 | 2028 | 43.33 % | 0.00 % | 13 | | | $70,593 |
| D3020 | Heat Generating Systems | $18.67 | S.F. | 30,428 | 35 | 1924 | 1959 | 2028 | 37.14 % | 22.54 % | 13 | | $128,072.25 | $568,091 |
| D3030 | Cooling Generating Systems | $24.48 | S.F. | 30,428 | 30 | 1924 | 1954 | 2030 | 50.00 % | 65.60 % | 15 | | $488,651.57 | $744,877 |
| D3040 | Distribution Systems | $42.99 | S.F. | 30,428 | 25 | 1924 | 1949 | 2042 | 108.00 % | 222.29 % | 27 | | $2,907,811.05 | $1,308,100 |
| D3050 | Terminal & Package Units | $11.60 | S.F. | 30,428 | 20 | 1924 | 1944 | 2028 | 65.00 % | 0.00 % | 13 | | | $352,965 |
| D3060 | Controls & Instrumentation | $13.50 | S.F. | 30,428 | 20 | 1924 | 1944 | 2037 | 110.00 % | 158.90 % | 22 | | $652,743.72 | $410,778 |
| D4010 | Sprinklers | $7.05 | S.F. | 30,428 | 35 | | | 2052 | 105.71 % | 202.91 % | 37 | | $435,284.67 | $214,517 |
| D4020 | Standpipes | $1.01 | S.F. | 30,428 | 35 | | | 2052 | 105.71 % | 0.00 % | 37 | | | $30,732 |
| D5010 | Electrical Service/Distribution | $9.70 | S.F. | 30,428 | 30 | 1924 | 1954 | 2037 | 73.33 % | 174.63 % | 22 | | $515,417.60 | $295,152 |
| D5020 | Lighting and Branch Wiring | $34.68 | S.F. | 30,428 | 20 | 1924 | 1944 | 2037 | 110.00 % | 7.81 % | 22 | | $82,393.82 | $1,055,243 |
| D5030 | Communications and Security | $12.99 | S.F. | 30,428 | 15 | 1924 | 1939 | 2032 | 113.33 % | 83.24 % | 17 | | $329,033.10 | $395,260 |
| D5090 | Other Electrical Systems | $1.41 | S.F. | 30,428 | 30 | 1924 | 1954 | 2037 | 73.33 % | 245.71 % | 22 | | $105,418.64 | $42,903 |
| E1020 | Institutional Equipment | $4.82 | S.F. | 30,428 | 35 | 1924 | 1959 | 2027 | 34.29 % | 63.71 % | 12 | | $93,445.81 | $146,663 |
| E1090 | Other Equipment | $11.10 | S.F. | 30,428 | 35 | 1924 | 1959 | 2027 | 34.29 % | 0.00 % | 12 | | | $337,751 |
| E2010 | Fixed Furnishings | $2.13 | S.F. | 30,428 | 40 | 1924 | 1964 | 2055 | 100.00 % | 362.63 % | 40 | | $235,028.16 | $64,812 |
| | | | | | | | | **Total** | **62.36 %** | **55.55 %** | | | **$8,361,397.87** | **$15,050,924** |

## 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:** C30 - Interior Finishes — This system contains no images

**Note:**
painted block 80%
glazed brick 8%
marble 8%
wood 1%

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

**Note:**
Concrete – 11028 36%
Wood - 14150 47%
VCT - 4450 14%
Carpet - 800 3%

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

**Note:**
Plaster - 3150 - 10%
Acoustical Tile - 800 - 3%
concrete painted - 26478 - 87%

## 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:** | **$8,361,398** | **$0** | **$0** | **$0** | **$0** | **$633,634** | **$0** | **$0** | **$0** | **$782,162** | **$0** | **$9,777,194** |
| *** 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** | $683 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$683** |
| **B - Shell** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B10 - Superstructure** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B1010 - Floor Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B1020 - Roof Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B20 - Exterior Enclosure** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B2010 - Exterior Walls** | $4,032 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$4,032** |
| **B2020 - Exterior Windows** | $961,480 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$961,480** |
| **B2030 - Exterior Doors** | $108,302 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$108,302** |
| **B30 - Roofing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010 - Roof Coverings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010105 - Built-Up** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010120 - Single Ply Membrane** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010130 - Preformed Metal Roofing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010140 - Shingle & Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3020 - Roof Openings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C - Interiors** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C10 - Interior Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C1010 - Partitions** | $7,222 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $782,162 | $0 | **$789,384** |

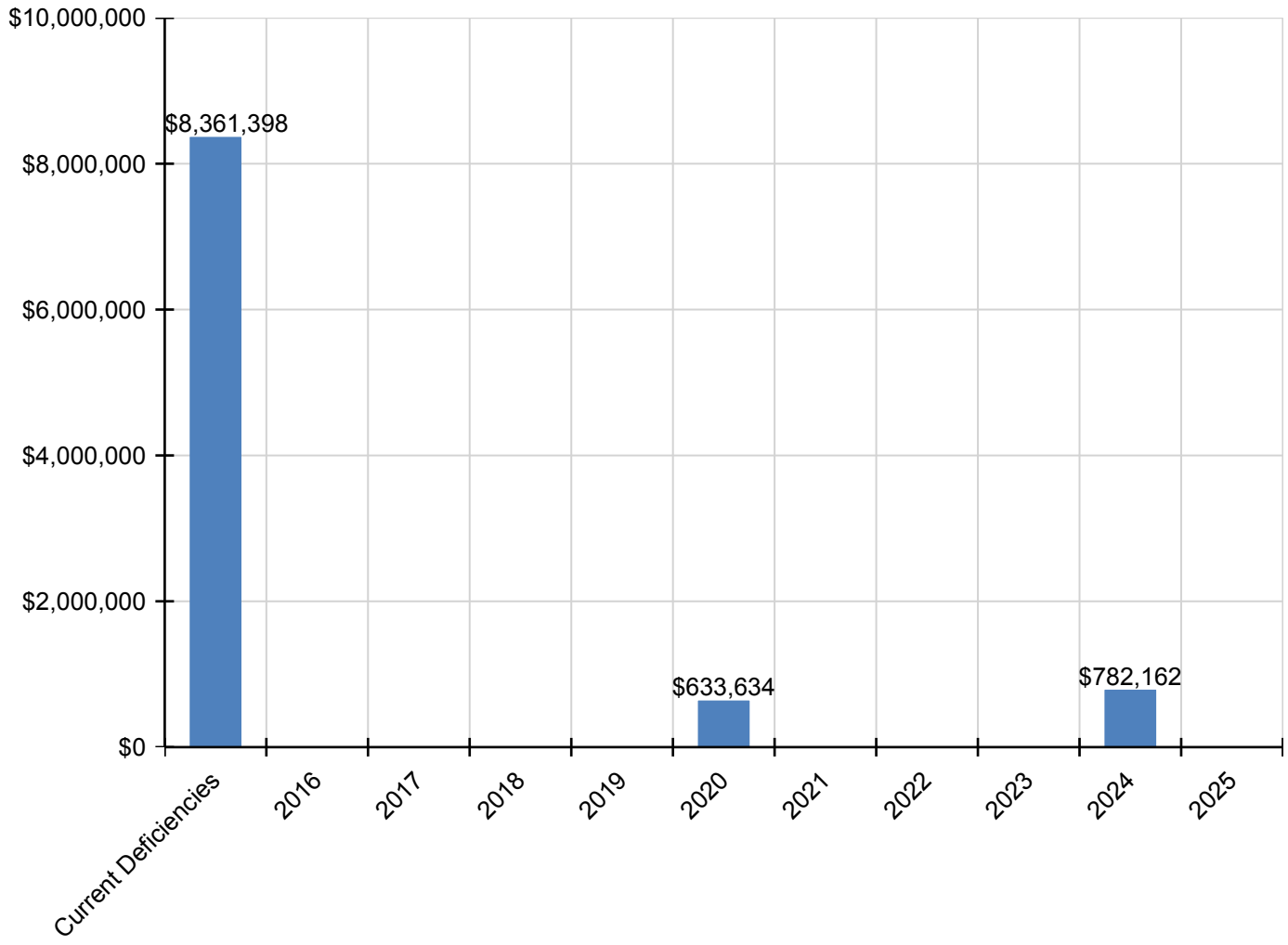
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **C1020 - Interior Doors** | $247,244 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$247,244** |
| **C1030 - Fittings** | $4,997 | $0 | $0 | $0 | $0 | $121,062 | $0 | $0 | $0 | $0 | $0 | **$126,058** |
| **C20 - Stairs** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C2010 - Stair Construction** | $102,333 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$102,333** |
| **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** | $45,593 | $0 | $0 | $0 | $0 | $512,572 | $0 | $0 | $0 | $0 | $0 | **$558,165** |
| **C3010231 - Vinyl Wall Covering** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3010232 - Wall Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020 - Floor Finishes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020411 - Carpet** | $8,953 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$8,953** |
| **C3020412 - Terrazzo & Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020413 - Vinyl Flooring** | $37,855 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$37,855** |
| **C3020414 - Wood Flooring** | $158,812 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$158,812** |
| **C3020415 - Concrete Floor Finishes** | $14,575 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$14,575** |
| **C3030 - Ceiling Finishes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **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 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D20 - Plumbing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D2010 - Plumbing Fixtures** | $348,004 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$348,004** |
| **D2020 - Domestic Water Distribution** | $208,796 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$208,796** |
| **D2030 - Sanitary Waste** | $129,216 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$129,216** |
| **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** | $128,072 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$128,072** |
| **D3030 - Cooling Generating Systems** | $488,652 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$488,652** |
| **D3040 - Distribution Systems** | $2,907,811 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$2,907,811** |
| **D3050 - Terminal & Package Units** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3060 - Controls & Instrumentation** | $652,744 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$652,744** |
| **D40 - Fire Protection** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D4010 - Sprinklers** | $435,285 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$435,285** |
| **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** | $515,418 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$515,418** |
| **D5020 - Lighting and Branch Wiring** | $82,394 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$82,394** |
| **D5030 - Communications and Security** | $329,033 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$329,033** |
| **D5090 - Other Electrical Systems** | $105,419 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$105,419** |
| **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 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E20 - Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E2010 - Fixed Furnishings** | $235,028 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$235,028** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

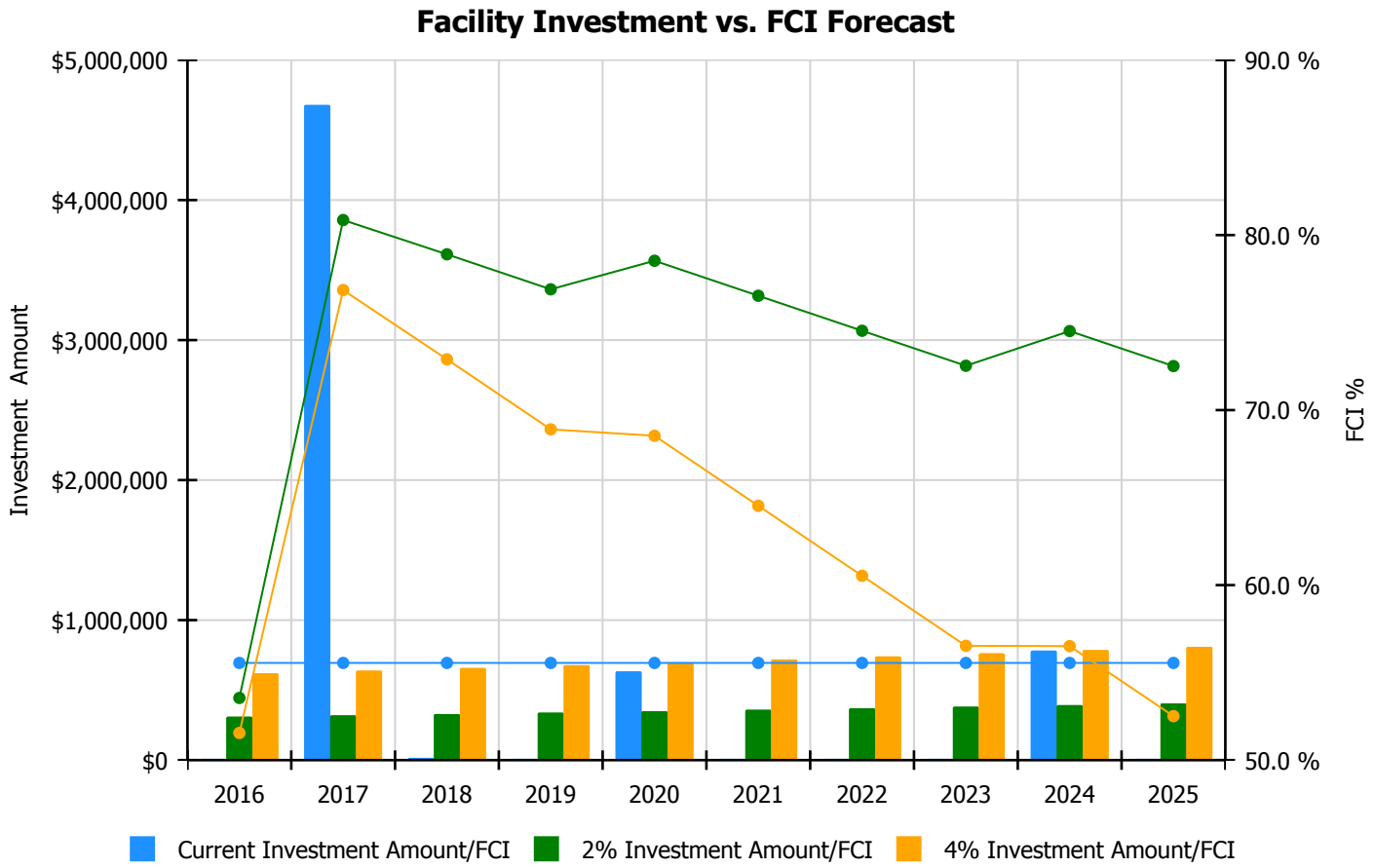
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



## 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:

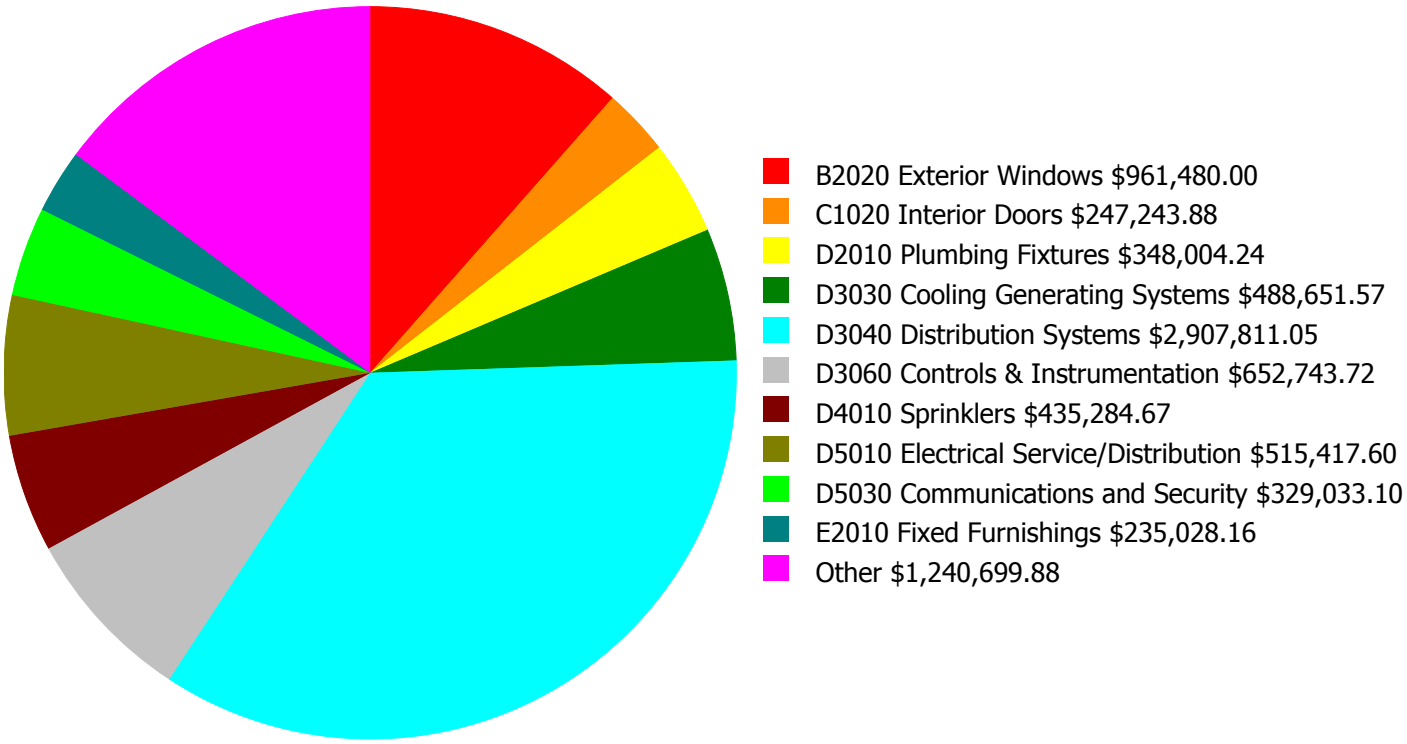
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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




| Year | Investment Amount Current FCI - 55.55% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $310,049.00 | 53.55 % | $620,098.00 | 51.55 % |
| 2017 | $4,679,044 | $319,351.00 | 80.86 % | $638,701.00 | 76.86 % |
| 2018 | $7,020 | $328,931.00 | 78.90 % | $657,862.00 | 72.90 % |
| 2019 | $0 | $338,799.00 | 76.90 % | $677,598.00 | 68.90 % |
| 2020 | $633,634 | $348,963.00 | 78.53 % | $697,926.00 | 68.53 % |
| 2021 | $0 | $359,432.00 | 76.53 % | $718,864.00 | 64.53 % |
| 2022 | $0 | $370,215.00 | 74.53 % | $740,430.00 | 60.53 % |
| 2023 | $0 | $381,321.00 | 72.53 % | $762,642.00 | 56.53 % |
| 2024 | $782,162 | $392,761.00 | 74.51 % | $785,522.00 | 56.51 % |
| 2025 | $0 | $404,544.00 | 72.51 % | $809,087.00 | 52.51 % |
| **Total:** | **$6,101,860** | **$3,554,366.00** | | **$7,108,730.00** | |

## Deficiency Summary by System

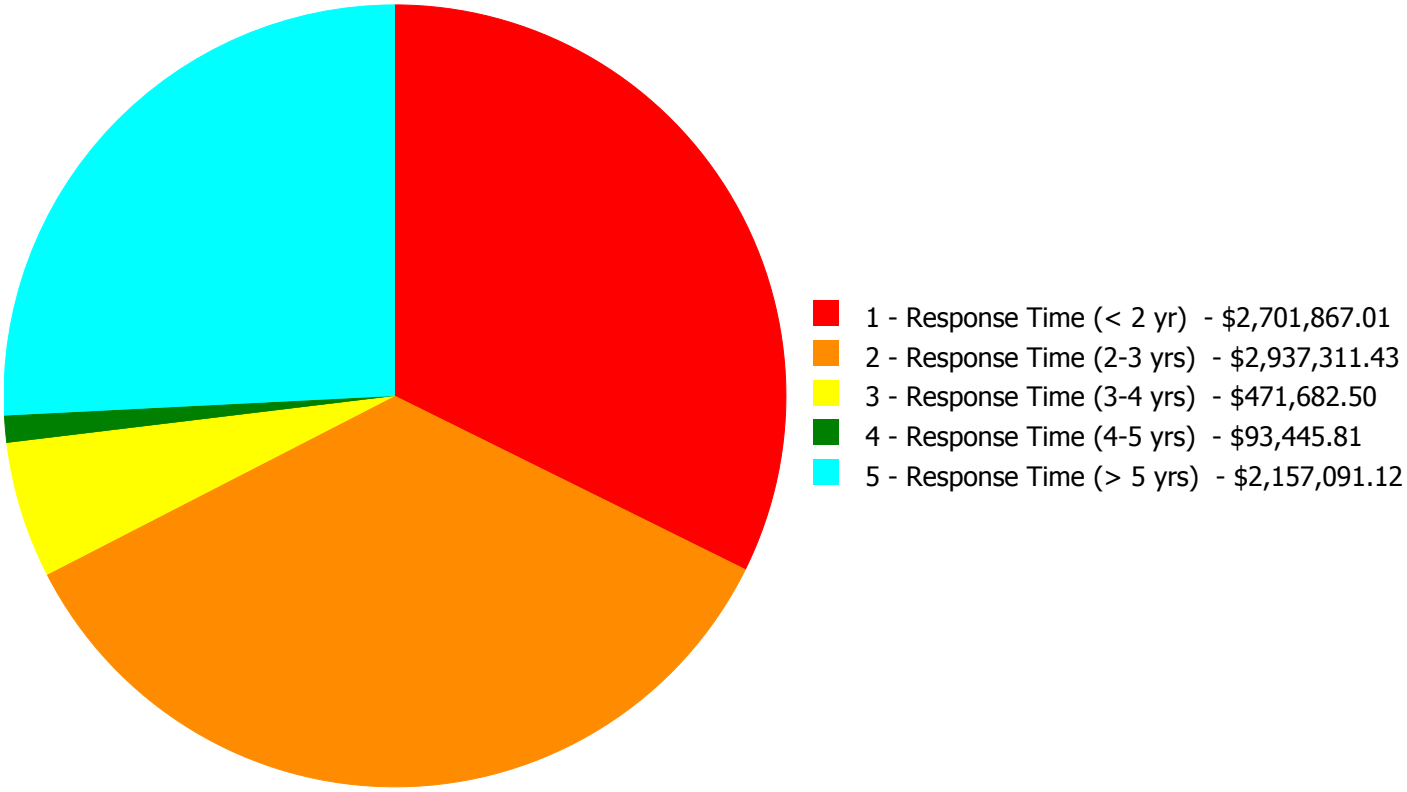
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $8,361,397.87**

## 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: $8,361,397.87**

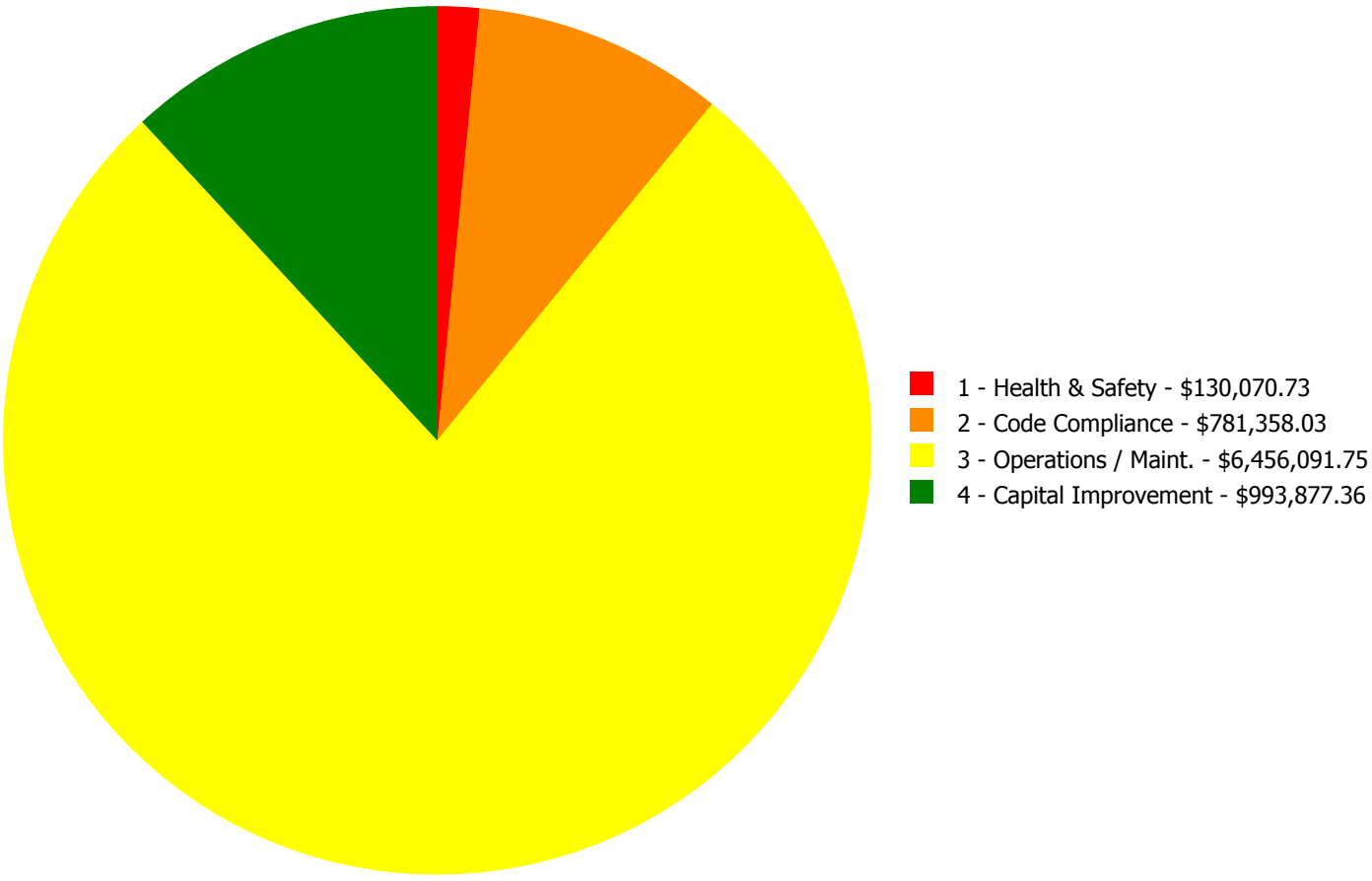
## Deficiency By Priority Investment Table

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 | $683.20 | $0.00 | $0.00 | $0.00 | $683.20 |
| B2010 | Exterior Walls | $802.64 | $3,228.94 | $0.00 | $0.00 | $0.00 | $4,031.58 |
| B2020 | Exterior Windows | $0.00 | $961,480.00 | $0.00 | $0.00 | $0.00 | $961,480.00 |
| B2030 | Exterior Doors | $0.00 | $108,302.48 | $0.00 | $0.00 | $0.00 | $108,302.48 |
| C1010 | Partitions | $0.00 | $7,222.31 | $0.00 | $0.00 | $0.00 | $7,222.31 |
| C1020 | Interior Doors | $0.00 | $247,243.88 | $0.00 | $0.00 | $0.00 | $247,243.88 |
| C1030 | Fittings | $0.00 | $4,996.51 | $0.00 | $0.00 | $0.00 | $4,996.51 |
| C2010 | Stair Construction | $101,137.59 | $1,195.60 | $0.00 | $0.00 | $0.00 | $102,333.19 |
| C3010230 | Paint & Covering | $0.00 | $45,592.96 | $0.00 | $0.00 | $0.00 | $45,592.96 |
| C3020411 | Carpet | $0.00 | $8,952.61 | $0.00 | $0.00 | $0.00 | $8,952.61 |
| C3020413 | Vinyl Flooring | $0.00 | $37,855.22 | $0.00 | $0.00 | $0.00 | $37,855.22 |
| C3020414 | Wood Flooring | $0.00 | $158,812.36 | $0.00 | $0.00 | $0.00 | $158,812.36 |
| C3020415 | Concrete Floor Finishes | $0.00 | $14,575.07 | $0.00 | $0.00 | $0.00 | $14,575.07 |
| D2010 | Plumbing Fixtures | $0.00 | $348,004.24 | $0.00 | $0.00 | $0.00 | $348,004.24 |
| D2020 | Domestic Water Distribution | $0.00 | $0.00 | $54,606.72 | $0.00 | $154,189.44 | $208,796.16 |
| D2030 | Sanitary Waste | $0.00 | $0.00 | $129,215.71 | $0.00 | $0.00 | $129,215.71 |
| D3020 | Heat Generating Systems | $0.00 | $101,394.17 | $0.00 | $0.00 | $26,678.08 | $128,072.25 |
| D3030 | Cooling Generating Systems | $0.00 | $0.00 | $0.00 | $0.00 | $488,651.57 | $488,651.57 |
| D3040 | Distribution Systems | $1,567,663.62 | $0.00 | $287,860.07 | $0.00 | $1,052,287.36 | $2,907,811.05 |
| D3060 | Controls & Instrumentation | $0.00 | $652,743.72 | $0.00 | $0.00 | $0.00 | $652,743.72 |
| D4010 | Sprinklers | $0.00 | $0.00 | $0.00 | $0.00 | $435,284.67 | $435,284.67 |
| D5010 | Electrical Service/Distribution | $515,417.60 | $0.00 | $0.00 | $0.00 | $0.00 | $515,417.60 |
| D5020 | Lighting and Branch Wiring | $82,393.82 | $0.00 | $0.00 | $0.00 | $0.00 | $82,393.82 |
| D5030 | Communications and Security | $329,033.10 | $0.00 | $0.00 | $0.00 | $0.00 | $329,033.10 |
| D5090 | Other Electrical Systems | $105,418.64 | $0.00 | $0.00 | $0.00 | $0.00 | $105,418.64 |
| E1020 | Institutional Equipment | $0.00 | $0.00 | $0.00 | $93,445.81 | $0.00 | $93,445.81 |
| E2010 | Fixed Furnishings | $0.00 | $235,028.16 | $0.00 | $0.00 | $0.00 | $235,028.16 |
| | **Total:** | $2,701,867.01 | $2,937,311.43 | $471,682.50 | $93,445.81 | $2,157,091.12 | $8,361,397.87 |

## 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: $8,361,397.87**

## 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 walkway along auditorium

**Distress:** Failing

**Category:** 3 - Operations / Maint.

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Re-caulk exterior control joints and other caulk joints

**Qty:** 40.00

**Unit of Measure:** L.F.

**Estimate:** $802.64

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Seal gap between walkway into door near auditorium and auditorium exterior walls (40 ft)

---

**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:** 300.00

**Unit of Measure:** L.F.

**Estimate:** $101,137.59

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Remove and replace stairway handrails and guards with code compliant systems (2) 3 story;=50x6=300 ft of handrail+guard

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**System: D3040 - Distribution Systems**

This deficiency has no image.

**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:** 30,428.00

**Unit of Measure:** S.F.

**Estimate:** $1,467,825.89

**Assessor Name:** System

**Date Created:** 02/06/2016

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

**System: D3040 - Distribution Systems**

**Location:** Throughout the biulding

**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:** 30,428.00

**Unit of Measure:** S.F.

**Estimate:** $99,837.73

**Assessor Name:** System

**Date Created:** 02/06/2016

**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:** Electrical Room

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Replace Switchboard

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $369,558.37

**Assessor Name:** System

**Date Created:** 10/19/2015

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

**System: D5010 - Electrical Service/Distribution**

**Location:** Entire Building

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Replace Electrical Distribution System (U)

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $145,859.23

**Assessor Name:** System

**Date Created:** 10/19/2015

**Notes:** Replace the entire distribution system with new panel boards and new feeders. Provide arc flush label on the all panel boards. Estimated, 6 panel boards.

**System: D5020 - Lighting and Branch Wiring**

**Location:** Entire Building

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Replace lighting fixtures

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $62,852.11

**Assessor Name:** System

**Date Created:** 10/19/2015

**Notes:** Replace existing lighting fixtures with new fluorescent fixtures where needed. Estimated 40 each. Replace existing incandescent fixtures in basement and other area with fluorescent lighting fixtures. Estimated 25 each. Replace gymnasium illuminates with LED high bay . Estimated 15 each.

**System: D5020 - Lighting and Branch Wiring**


**Location:** Entire Building

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Replace lighting fixtures

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $19,541.71

**Assessor Name:** System

**Date Created:** 10/19/2015

**Notes:** Replace existing exit signs with battery pack types. Estimated 25 each

**System: D5030 - Communications and Security**

**Location:** Entier Building

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Replace fire alarm system

**Qty:** 1.00

**Unit of Measure:** S.F.

**Estimate:** $170,192.75

**Assessor Name:** System

**Date Created:** 10/19/2015

**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:** $97,759.65

**Assessor Name:** System

**Date Created:** 10/19/2015

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

---

**System: D5030 - Communications and Security**

**Location:** Auditorium

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Add/Replace Sound System

**Qty:** 1.00

**Unit of Measure:** LS

**Estimate:** $38,400.80

**Assessor Name:** System

**Date Created:** 10/19/2015

**Notes:** Provide new sound system including a freestanding 19" rack backstage area with a mixer, amplifiers, CD player, cassette player, AM-FM radio, graphic or parametric equalizer, and receivers.

**System: D5030 - Communications and Security**


**Location:** Entire Building

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Add/Replace Clock System or Components

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $22,679.90

**Assessor Name:** System

**Date Created:** 10/19/2015

**Notes:** Provide master clock system including wireless master clock controller and new clock in the classes and offices.

**System: D5090 - Other Electrical Systems**

**Location:** Boiler Room

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Replace standby generator system

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $77,696.29

**Assessor Name:** System

**Date Created:** 10/19/2015

**Notes:** Replace existing emergency diesel generator with new 30KW diesel generator.

**System: D5090 - Other Electrical Systems**

**Location:** Roof

**Distress:** Life Safety / NFPA / PFD

**Category:** 1 - Health & Safety

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Provide Lightning Protection System

**Qty:** 1.00

**Unit of Measure:** LS

**Estimate:** $27,722.35

**Assessor Name:** System

**Date Created:** 10/19/2015

**Notes:** Perform lightning protection studies to ascertain that the mechanical equipment on the roof are protected against the lightning strokes.

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

**System: A2020 - Basement Walls**

**Location:** basement walls

**Distress:** Failing

**Category:** 3 - Operations / Maint.

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

**Correction:** Repair cracks in foundation walls - pick the appropriate repair and insert the LF

**Qty:** 60.00

**Unit of Measure:** L.F.

**Estimate:** $683.20

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Repair vertical and horizontal cracks in mechanical room foundation, slab above over window, and along edge of front stair support slab (60 ft)

**System: B2010 - Exterior Walls**

**Location:** chimney

**Distress:** Failing

**Category:** 3 - Operations / Maint.

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

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

**Qty:** 100.00

**Unit of Measure:** S.F.

**Estimate:** $3,228.94

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Repoint chimney (100sf)

**System: B2020 - Exterior Windows**

**Location:** exterior windows

**Distress:** Failing

**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:** 160.00

**Unit of Measure:** Ea.

**Estimate:** $961,480.00

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Replace all exterior windows with insulated single hung units (160)3.5x8

**System: B2030 - Exterior Doors**

**Location:** exterior doors

**Distress:** Failing

**Category:** 3 - Operations / Maint.

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

**Correction:** Remove and replace exterior doors - per leaf

**Qty:** 14.00

**Unit of Measure:** Ea.

**Estimate:** $108,302.48

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Replace all exterior doors with ADA and code compliant exit hardware; repaint doors and frames.(14)3x7

**System: C1010 - Partitions**

**Location:** corridor walls

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

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

**Correction:** Remove non-rated interior glass panels and replace with studs, gypsum board, paint (E) wall

**Qty:** 270.00

**Unit of Measure:** S.F.

**Estimate:** $7,222.31

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Remove non-rated glass panels between classrooms and corridors; fill with fire rated glazing (15 @ 18sf)

**System: C1020 - Interior Doors**


**Location:** interior 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:** 50.00

**Unit of Measure:** Ea.

**Estimate:** $232,716.95

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Remove and replace all wood interior doors, frames and hardware in classrooms with fire rated doors to corridors and non-rated doors to closets, offices, etc. (50)

**System: C1020 - Interior Doors**

**Location:** lobby and auditorium

**Distress:** Appearance

**Category:** 3 - Operations / Maint.

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

**Correction:** Refinish interior doors

**Qty:** 12.00

**Unit of Measure:** Ea.

**Estimate:** $9,938.20

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Refinish first floor lobby, auditorium, and office doors opening to corridor, replacing glazing with fire rated glazing (12 door panels)

**System: C1020 - Interior Doors**

**Location:** corridor doors

**Distress:** Security Issue

**Category:** 1 - Health & Safety

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

**Correction:** Provide security hardware for classroom and office doors

**Qty:** 20.00

**Unit of Measure:** Ea.

**Estimate:** $4,588.73

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Provide security hardware for classrooms and offices, locking from inside classroom. (20)

**System: C1030 - Fittings**

**Location:** toilet room

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

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

**Correction:** Remove and replace toilet partitions

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $2,566.40

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Provide handicap accessible toilet room accessories and new partitions for 1 toilet room (2nd fl) (2 water closets, 1 lavatory)

**System: C1030 - Fittings**

**Location:** toilet room

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

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

**Correction:** Replace toilet accessories - select accessories and quantity

**Qty:** 2.00

**Unit of Measure:** Ea.

**Estimate:** $2,430.11

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Provide handicap accessible toilet room accessories and new partitions for 1 toilet room (2nd fl) (2 water closets, 1 lavatory)

**System: C2010 - Stair Construction**

**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:** 80.00

**Unit of Measure:** L.F.

**Estimate:** $1,195.60

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Regrout cracking joints between limestone block tread/risers at exterior stairs (10 treads)

**System: C3010230 - Paint & Covering**

**Location:** mechanical rooms

**Distress:** Appearance

**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:** 5,000.00

**Unit of Measure:** S.F.

**Estimate:** $37,510.01

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Strip and repaint concrete foundation (basement) walls in mechanical rooms (5,000sf)

**System: C3010230 - Paint & Covering**

**Location:** auditorium, gymateria, corridors

**Distress:** Appearance

**Category:** 3 - Operations / Maint.

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

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

**Qty:** 1,000.00

**Unit of Measure:** S.F.

**Estimate:** $8,082.95

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Repair water damage, cracks, and repaint all damaged interior plaster walls and ceilings in auditorium, gymateria and corridors (1,000sf)

**System: C3020411 - Carpet**

**Location:** IMC

**Distress:** Failing

**Category:** 3 - Operations / Maint.

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

**Correction:** Remove and replace carpet

**Qty:** 800.00

**Unit of Measure:** S.F.

**Estimate:** $8,952.61

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Replace carpet in IMC and other rooms (800sf)

**System: C3020413 - Vinyl Flooring**

**Location:** gymateria
**Distress:** Failing
**Category:** 3 - Operations / Maint.
**Priority:** 2 - Response Time (2-3 yrs)
**Correction:** Remove and replace VCT
**Qty:** 3,150.00
**Unit of Measure:** S.F.
**Estimate:** $37,855.22
**Assessor Name:** System
**Date Created:** 01/04/2016

**Notes:** Remove and replace all 12”x12” VCT floors in gymateria (3150sf)

**System: C3020414 - Wood Flooring**

**Location:** classrooms
**Distress:** Appearance
**Category:** 3 - Operations / Maint.
**Priority:** 2 - Response Time (2-3 yrs)
**Correction:** Refinish wood floors
**Qty:** 14,150.00
**Unit of Measure:** S.F.
**Estimate:** $152,352.20
**Assessor Name:** System
**Date Created:** 01/04/2016

**Notes:** Strip, sand, repair and refinish all wood floors in classrooms and in auditorium (14,150sf)

**System: C3020414 - Wood Flooring**


**Location:** auditorium wainscot on wall
**Distress:** Appearance
**Category:** 3 - Operations / Maint.
**Priority:** 2 - Response Time (2-3 yrs)
**Correction:** Refinish wood floors
**Qty:** 600.00
**Unit of Measure:** S.F.
**Estimate:** $6,460.16
**Assessor Name:** System
**Date Created:** 01/04/2016

**Notes:** Refinish wood wainscot in auditorium (600sf)

**System: C3020415 - Concrete Floor Finishes**

**Location:** mechanical rooms
**Distress:** Appearance
**Category:** 3 - Operations / Maint.
**Priority:** 2 - Response Time (2-3 yrs)
**Correction:** Clean and reseal concrete floors
**Qty:** 5,000.00
**Unit of Measure:** S.F.
**Estimate:** $14,575.07
**Assessor Name:** System
**Date Created:** 01/04/2016

**Notes:** Clean and repaint basement floor in mechanical rooms (5000sf)

**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:** 24.00

**Unit of Measure:** Ea.

**Estimate:** $179,091.55

**Assessor Name:** System

**Date Created:** 02/06/2016

**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:** 4.00

**Unit of Measure:** Ea.

**Estimate:** $62,771.59

**Assessor Name:** System

**Date Created:** 02/06/2016

**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 wall hung urinals

**Qty:** 11.00

**Unit of Measure:** Ea.

**Estimate:** $40,766.60

**Assessor Name:** System

**Date Created:** 02/06/2016

**Notes:** Replace all urinals 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 lavatory - quantify accessible if required

**Qty:** 10.00

**Unit of Measure:** Ea.

**Estimate:** $38,110.13

**Assessor Name:** System

**Date Created:** 02/06/2016

**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 floor janitor or mop sink - insert the quantity

**Qty:** 4.00

**Unit of Measure:** Ea.

**Estimate:** $27,264.37

**Assessor Name:** System

**Date Created:** 02/06/2016

**Notes:** Replace service sinks (janitor sinks) in the building.

**System: D3020 - Heat Generating Systems**

**Location:** Main boiler mechanical equipment room

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

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

**Correction:** Replace boiler feed pump (duplex) and surge tank

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $101,394.17

**Assessor Name:** System

**Date Created:** 02/06/2016

**Notes:** Replace boiler feedwater system.

**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 (75KSF)

**Qty:** 30,428.00

**Unit of Measure:** S.F.

**Estimate:** $652,743.72

**Assessor Name:** System

**Date Created:** 02/06/2016

**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: E2010 - Fixed Furnishings**

**Location:** auditorium

**Distress:** Failing

**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:** 500.00

**Unit of Measure:** Ea.

**Estimate:** $235,028.16

**Assessor Name:** System

**Date Created:** 01/04/2016

**Notes:** Repair or replace damaged folding wood auditorium chairs (500)

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

**System: D2020 - Domestic Water Distribution**

**Location:** Main boiler mechanical equipment room

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

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

**Correction:** Replace vertical tank type gas-fired water heater (75 gal)

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $54,606.72

**Assessor Name:** System

**Date Created:** 02/06/2016

**Notes:** Replace natural gas fired vertical tank water heater.

**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:** 30,428.00

**Unit of Measure:** S.F.

**Estimate:** $129,215.71

**Assessor Name:** System

**Date Created:** 02/06/2016

**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:** 30,428.00

**Unit of Measure:** S.F.

**Estimate:** $287,860.07

**Assessor Name:** System

**Date Created:** 02/06/2016

**Notes:** Hire a qualified contractor to examine the steam and condensate piping in service for 92 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.

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

**System: E1020 - Institutional Equipment**

**Location:** auditorium

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

**Correction:** Add/Replace Stage Theatrical Lighting System

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $93,445.81

**Assessor Name:** System

**Date Created:** 10/19/2015

**Notes:** Provide new stage lighting and lighting controller in the Auditorium.

## 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 (75 KSF)
**Qty:** 30,428.00
**Unit of Measure:** S.F.
**Estimate:** $154,189.44
**Assessor Name:** System
**Date Created:** 02/06/2016

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

**System: D3020 - Heat Generating Systems**

This deficiency has no image.

**Location:** Main boiler mechanical equipment room
**Distress:** Beyond Service Life
**Category:** 3 - Operations / Maint.
**Priority:** 5 - Response Time (> 5 yrs)
**Correction:** Replace fuel oil pumps
**Qty:** 1.00
**Unit of Measure:** Ea.
**Estimate:** $26,678.08
**Assessor Name:** System
**Date Created:** 02/06/2016

**Notes:** Replace duplex fuel oil pumps.

**System: D3030 - Cooling Generating Systems**

**Location:** Adjacent to building

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

**Priority:** 5 - Response Time (> 5 yrs)

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

**Qty:** 30,428.00

**Unit of Measure:** S.F.

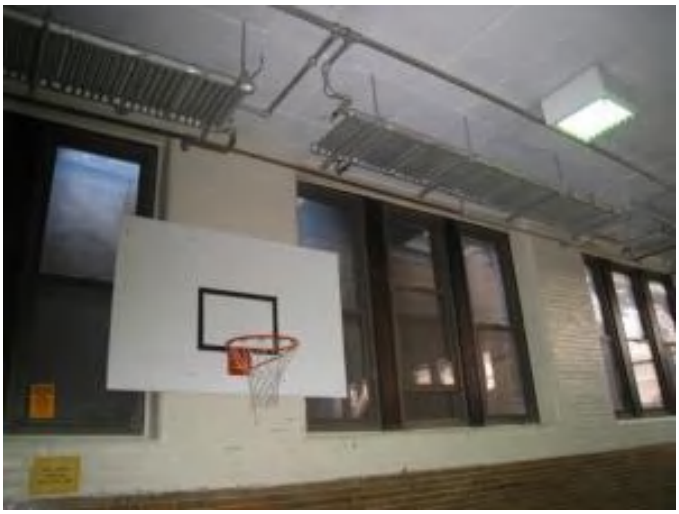
**Estimate:** $488,651.57

**Assessor Name:** System

**Date Created:** 02/06/2016

**Notes:** Remove the window air conditioning units and install a 250 ton air-cooled chiller on the roof with chilled water distribution piping and pumps located in a mechanical room on the basement level to supply more reliable air conditioning for the building with a much longer service life.

**System: D3040 - Distribution Systems**



**Location:** Cafeteria

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

**Priority:** 5 - Response Time (> 5 yrs)

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

**Qty:** 850.00

**Unit of Measure:** Student

**Estimate:** $434,958.00

**Assessor Name:** System

**Date Created:** 02/06/2016

**Notes:** Provide ventilation, heating and cooling for the gymnasium/cafeteria by installing an air handling unit.

**System: D3040 - Distribution Systems**

**Location:** Throughout the building

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

**Priority:** 5 - Response Time (> 5 yrs)

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

**Qty:** 4.00

**Unit of Measure:** C

**Estimate:** $332,243.95

**Assessor Name:** System

**Date Created:** 02/06/2016

**Notes:** Provide ventilation for the corridors at four first floor entryways by installing fan coil air handling units hung from the structure with outdoor air ducted to the unit from louvers in the window openings

**System: D3040 - Distribution Systems**

**Location:** Auditorium

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

**Priority:** 5 - Response Time (> 5 yrs)

**Correction:** Install HVAC unit for Auditorium (200 seat).

**Qty:** 200.00

**Unit of Measure:** Seat

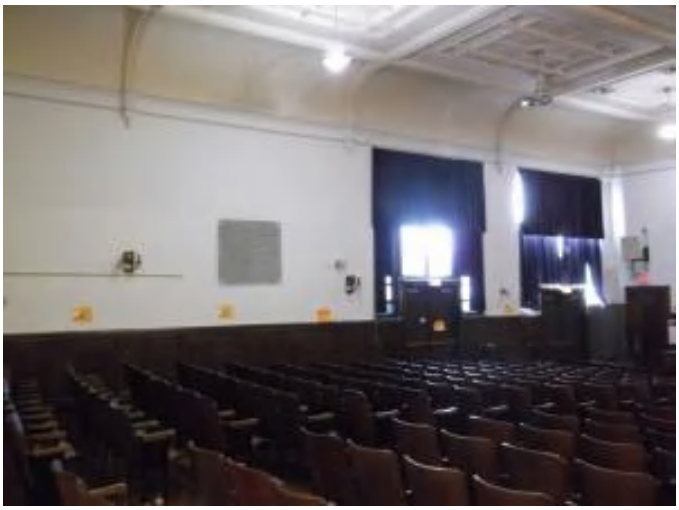
**Estimate:** $285,085.41

**Assessor Name:** System

**Date Created:** 02/06/2016

**Notes:** Provide ventilation, heating and cooling for the auditorium by installing an air handling unit.

**System: D4010 - Sprinklers**



**Location:** Throughout the building

**Distress:** Life Safety / NFPA / PFD

**Category:** 2 - Code Compliance

**Priority:** 5 - Response Time (> 5 yrs)

**Correction:** Install a fire protection sprinkler system

**Qty:** 30,428.00

**Unit of Measure:** S.F.

**Estimate:** $435,284.67

**Assessor Name:** System

**Date Created:** 02/06/2016

**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

## 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, 3270 MBH | 2.00 | Ea. | Main boiler mechnaical equipment room | Weil McLain | 1394 | | | 35 | | | $106,126.00 | $233,477.20 |
| D3020 Heat Generating Systems | Boiler, cast iron, gas & oil, steam, 3270 MBH | 2.00 | Ea. | Main boiler mechnaical equipment room | Weil McLain | 1394 | | | 35 | | | $106,126.00 | $233,477.20 |
| D5010 Electrical Service/Distribution | Switchboards, split bus, 60 - 200 amp | 2.00 | Ea. | Electrical Room | | | | | 30 | 1924 | 2017 | $428.49 | $942.68 |
| | | | | | | | | | | | | **Total:** | **$467,897.08** |

## 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): | 21,800 |
| Year Built: | 1924 |
| Last Renovation: | |
| Replacement Value: | $495,262 |
| Repair Cost: | $160,078.06 |
| Total FCI: | 32.32 % |
| Total RSLI: | 76.55 % |

**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Bldg ID: | S823001 | Site ID: | S823001 |

## 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 | 89.11 % | 43.43 % | $160,078.06 |
| G40 - Site Electrical Utilities | 40.00 % | 0.00 % | $0.00 |
| **Totals:** | **76.55 %** | **32.32 %** | **$160,078.06** |

## 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. | 4,000 | 30 | 1924 | 1954 | 2047 | 106.67 % | 111.33 % | 32 | | $37,852.40 | $34,000 |
| G2030 | Pedestrian Paving | $12.30 | S.F. | 18,200 | 40 | 1924 | 1964 | 2057 | 105.00 % | 52.85 % | 42 | | $118,310.06 | $223,860 |
| G2040 | Site Development | $4.36 | S.F. | 21,800 | 25 | 1924 | 1949 | 2027 | 48.00 % | 4.12 % | 12 | | $3,915.60 | $95,048 |
| G2050 | Landscaping & Irrigation | $4.36 | S.F. | 3,600 | 15 | 1924 | 1939 | 2026 | 73.33 % | 0.00 % | 11 | | | $15,696 |
| G4020 | Site Lighting | $4.84 | S.F. | 21,800 | 30 | 1924 | 1954 | 2027 | 40.00 % | 0.00 % | 12 | | | $105,512 |
| G4030 | Site Communications & Security | $0.97 | S.F. | 21,800 | 30 | 1924 | 1954 | 2027 | 40.00 % | 0.00 % | 12 | | | $21,146 |
| | | | | | | | | **Total** | **76.55 %** | **32.32 %** | | | **$160,078.06** | **$495,262** |

## 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.

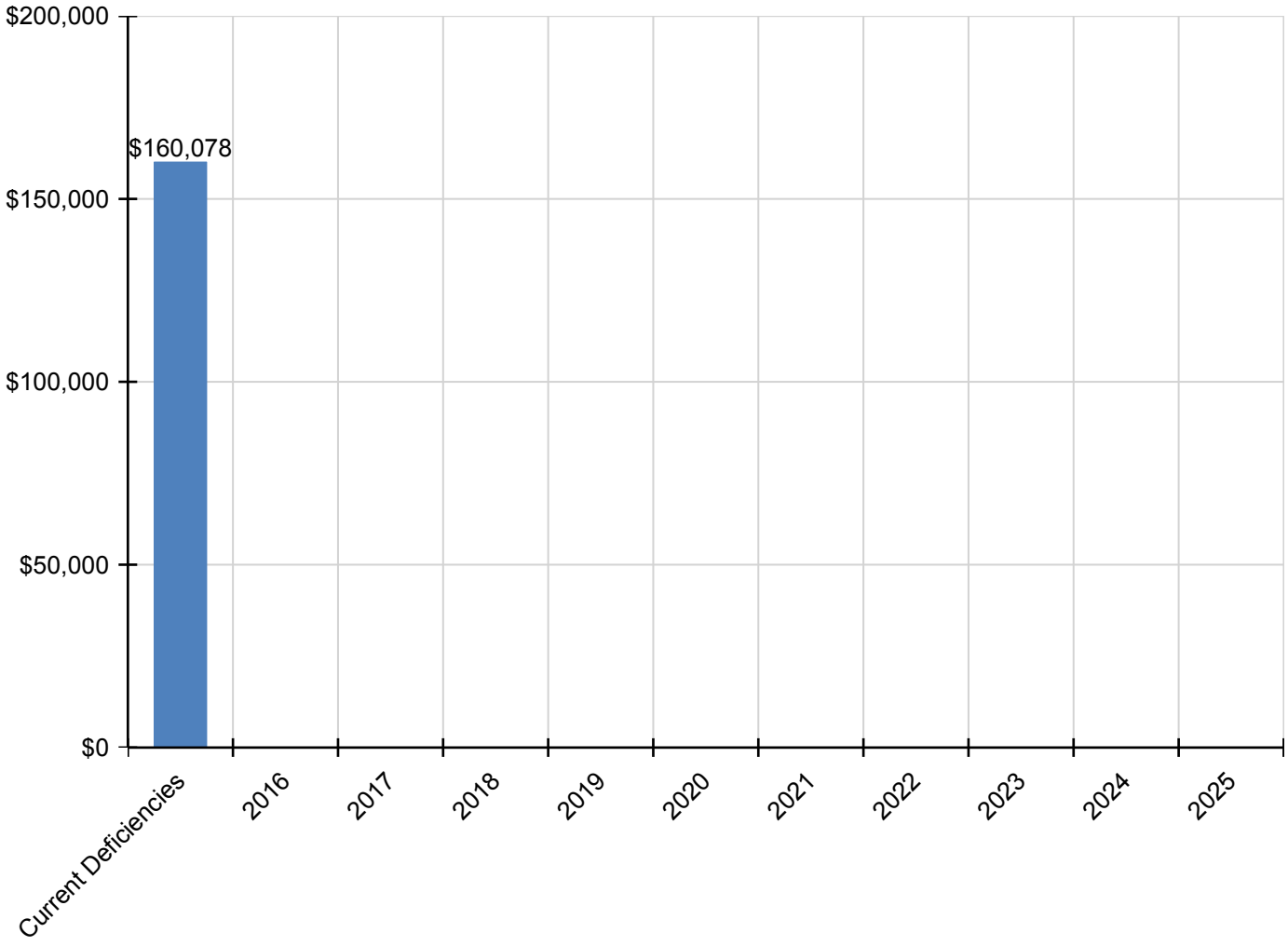
*Inflation Rate: 3%*

| System | Current Deficiencies | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total:** | **$160,078** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$160,078** |
| **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** | $37,852 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$37,852** |
| **G2030 - Pedestrian Paving** | $118,310 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$118,310** |
| **G2040 - Site Development** | $3,916 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$3,916** |
| **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 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G4030 - Site Communications & Security** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

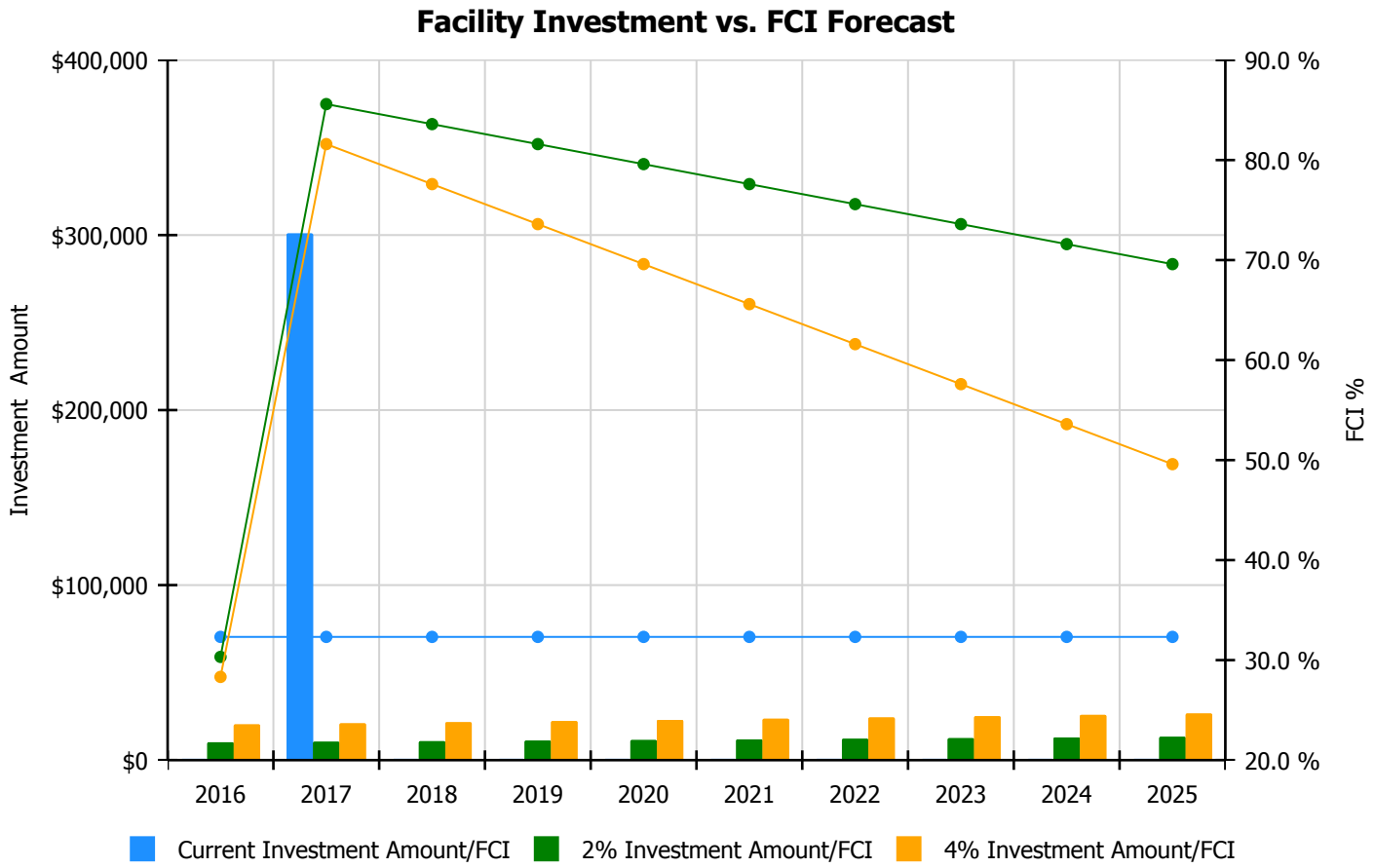
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



## 10 Year FCI Forecast by Investment Scenario

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

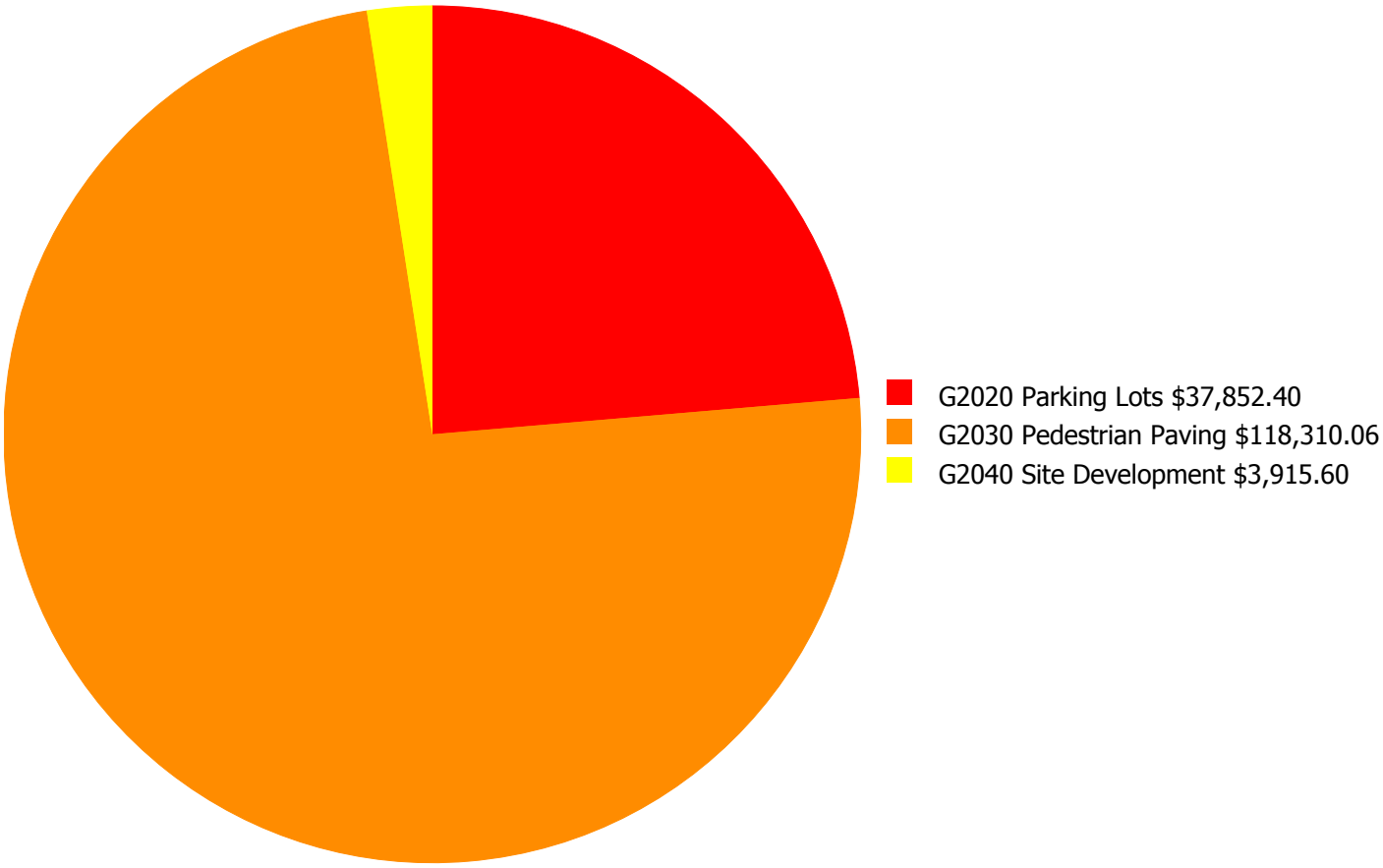
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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




| Year | Investment Amount Current FCI - 32.32% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $10,202.00 | 30.32 % | $20,405.00 | 28.32 % |
| 2017 | $300,920 | $10,508.00 | 85.59 % | $21,017.00 | 81.59 % |
| 2018 | $0 | $10,824.00 | 83.59 % | $21,647.00 | 77.59 % |
| 2019 | $0 | $11,148.00 | 81.59 % | $22,297.00 | 73.59 % |
| 2020 | $0 | $11,483.00 | 79.59 % | $22,966.00 | 69.59 % |
| 2021 | $0 | $11,827.00 | 77.59 % | $23,655.00 | 65.59 % |
| 2022 | $0 | $12,182.00 | 75.59 % | $24,364.00 | 61.59 % |
| 2023 | $0 | $12,548.00 | 73.59 % | $25,095.00 | 57.59 % |
| 2024 | $0 | $12,924.00 | 71.59 % | $25,848.00 | 53.59 % |
| 2025 | $0 | $13,312.00 | 69.59 % | $26,624.00 | 49.59 % |
| **Total:** | **$300,920** | **$116,958.00** | | **$233,918.00** | |

## Deficiency Summary by System

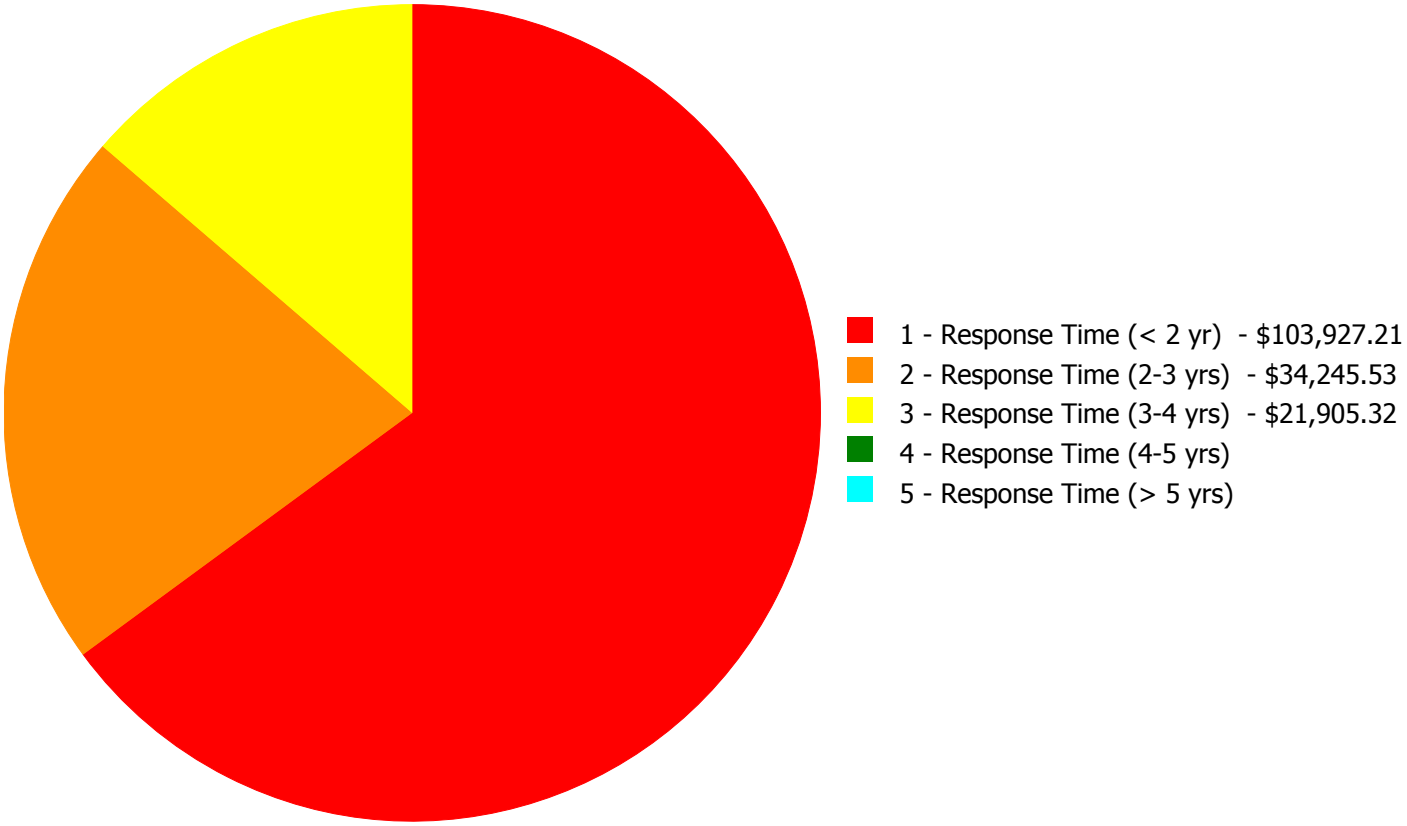
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $160,078.06**

## 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: $160,078.06**

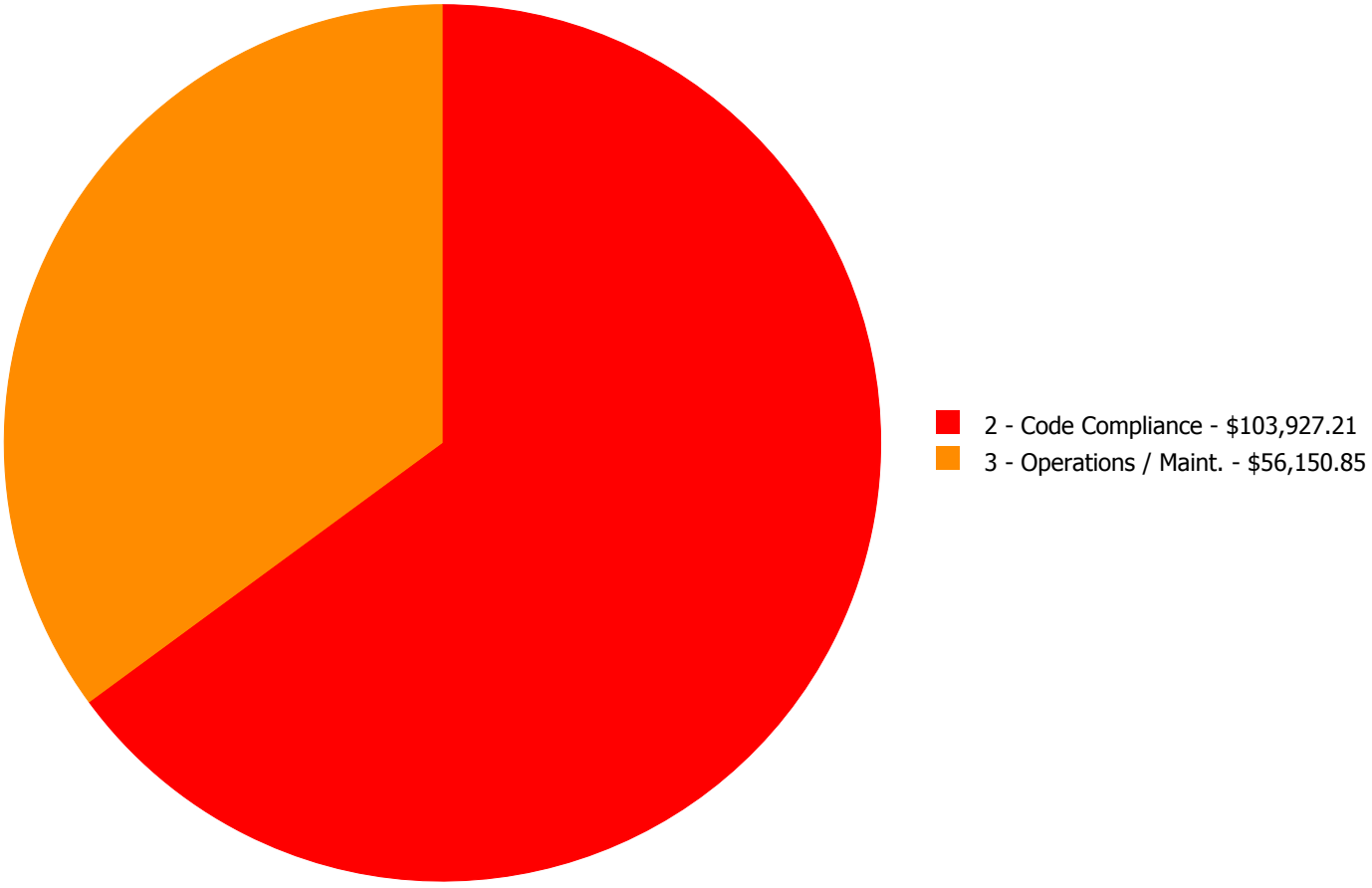
## Deficiency By Priority Investment Table

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

| System Code | System Description | 1 - Response Time (< 2 yr) | 2 - Response Time (2-3 yrs) | 3 - Response Time (3-4 yrs) | 4 - Response Time (4-5 yrs) | 5 - Response Time (> 5 yrs) | Total |
|---|---|---|---|---|---|---|---|
| G2020 | Parking Lots | $0.00 | $15,947.08 | $21,905.32 | $0.00 | $0.00 | $37,852.40 |
| G2030 | Pedestrian Paving | $103,927.21 | $14,382.85 | $0.00 | $0.00 | $0.00 | $118,310.06 |
| G2040 | Site Development | $0.00 | $3,915.60 | $0.00 | $0.00 | $0.00 | $3,915.60 |
| | **Total:** | $103,927.21 | $34,245.53 | $21,905.32 | $0.00 | $0.00 | $160,078.06 |

## 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: $160,078.06**

## 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: G2030 - Pedestrian Paving**

**Location:** rear entrance door

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Install an exterior ADA ramp - based on 5' wide by the linear foot - up to a 48" rise - per LF of ramp - figure 1 LF per inch of rise

**Qty:** 80.00

**Unit of Measure:** L.F.

**Estimate:** $103,927.21

**Assessor Name:** Craig Anding

**Date Created:** 01/04/2016

**Notes:** Add handicap ramp to rear door (80ft)

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

**System: G2020 - Parking Lots**

**Location:** asphalt playground

**Distress:** Failing

**Category:** 3 - Operations / Maint.

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

**Correction:** Fill pavement cracks and reseal parking lot - including striping - change the LF of crack repair if it is severe

**Qty:** 9,000.00

**Unit of Measure:** S.F.

**Estimate:** $15,947.08

**Assessor Name:** Craig Anding

**Date Created:** 01/04/2016

**Notes:** Crack fill and reseal remaining sections of asphalt playground (9000sf)

---

**System: G2030 - Pedestrian Paving**

**Location:** concrete walkways

**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:** 1,000.00

**Unit of Measure:** S.F.

**Estimate:** $14,382.85

**Assessor Name:** Craig Anding

**Date Created:** 01/04/2016

**Notes:** Repair concrete walkways (1000sf)

---

**System: G2040 - Site Development**

**Location:** areaway 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:** 60.00

**Unit of Measure:** L.F.

**Estimate:** $3,915.60

**Assessor Name:** Craig Anding

**Date Created:** 01/04/2016

**Notes:** Replace steel fence over basement areaway. (60ft)

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

**System: G2020 - Parking Lots**

**Location:** asphalt playground

**Distress:** Failing

**Category:** 3 - Operations / Maint.

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

**Correction:** Resurface parking lot - grind and resurface including striping

**Qty:** 6,000.00

**Unit of Measure:** S.F.

**Estimate:** $21,905.32

**Assessor Name:** Craig Anding

**Date Created:** 01/04/2016

**Notes:** Repave damaged sections of asphalt playground area (6,000sf)

## 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 |