## 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.*

## Barton School

| | | | |
|---|---|---|---|
| Governance | DISTRICT | Report Type | Elementary |
| Address | 4600 Rosehill St. | Enrollment | 752 |
| | Philadelphia, Pa 19120 | Grade Range | '00-02' |
| Phone/Fax | 215-456-3007 / 215-456-5578 | Admissions Category | Neighborhood |
| Website | Www.Philasd.Org/Schools/Barton | 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** | **47.43%** | **$18,293,137** | **$38,565,343** |
| Building | 49.35 % | $17,844,364 | $36,159,365 |
| Grounds | 18.65 % | $448,773 | $2,405,978 |

## Major Building Systems

| Building System | System FCI | Repair Costs | Replacement Cost |
|---|---|---|---|
| **Roof** (Shows physical condition of roof) | 92.64 % | $832,627 | $898,796 |
| **Exterior Walls** (Shows condition of the structural condition of the exterior facade) | 12.23 % | $325,990 | $2,664,902 |
| **Windows** (Shows functionality of exterior windows) | 144.28 % | $1,876,062 | $1,300,322 |
| **Exterior Doors** (Shows condition of exterior doors) | 66.74 % | $69,873 | $104,690 |
| **Interior Doors** (Classroom doors) | 372.74 % | $944,617 | $253,422 |
| **Interior Walls** (Paint and Finishes) | 15.47 % | $187,759 | $1,213,682 |
| **Plumbing Fixtures** | 17.68 % | $172,622 | $976,144 |
| **Boilers** | 97.32 % | $1,311,841 | $1,347,974 |
| **Chillers/Cooling Towers** | 67.94 % | $1,200,804 | $1,767,456 |
| **Radiators/Unit Ventilators/HVAC** | 170.17 % | $5,281,958 | $3,103,878 |
| **Heating/Cooling Controls** | 132.68 % | $1,293,203 | $974,700 |
| **Electrical Service and Distribution** | 63.11 % | $441,956 | $700,340 |
| **Lighting** | 02.84 % | $70,998 | $2,503,896 |
| **Communications and Security** (Cameras, Pa System and Fire Alarm) | 46.17 % | $433,023 | $937,878 |

*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

# S720001;Barton

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): | 72,200 |
| Year Built: | 1925 |
| Last Renovation: | |
| Replacement Value: | $38,565,343 |
| Repair Cost: | $18,293,136.88 |
| Total FCI: | 47.43 % |
| Total RSLI: | 64.91 % |

**Description:**

Facility Condition Assessment
July 2015

***School District of Philadelphia***
***Clara Barton Elementary School***
***4600 Rosehill Street***
***Philadelphia, PA 19120***

*72,200sf / 850 students / LN 07*

**General**

Clara Barton School is located at 4600 Rosehill Street. The main entrance faces Rosehill Street. The main building ("Element 1") was constructed in 1925, has 72,200 square feet, and is 3 stories tall. There is a full basement. An addition, called "Element 2" was constructed before 1950. The Clara Barton School can be found on the National Historical Register, number 88002242 with the address of 300 E. Wyoming Avenue. John Greenwood, the Building Engineer accompanied the FCA team during the inspection. The inspection team met with the Principal Bowen at the time of the assessment visit. She indicated that critical items in need of improvement were leaks that come through the walls when it rains (possibly due to roofing problems or cracks over windows),

and control of the heat system throughout the building (third floor is cold, first floor is hot).

**Architectural/Structural**

Foundations appear to be constructed of concrete, stone, and brick. Joints are in good condition with no major settlement cracks observed. Extensive peeling paint was observed on basement walls and ceilings, mainly due to high room moisture related to excessive steam released by the boilers and a lack of general maintenance of the space. Peeling paint was also observed on ductwork and other metal equipment. These areas should be tested for lead content before scraping, sanding and repainting; if lead is found in paint, proper hazardous material removal techniques must be followed. Footings were not seen and their construction type or condition could not be ascertained. There is evidence of rusting on the steel lintels above most basement windows with some localized joint cracking extending beyond the lintels which can be seen from inside the basement and outside the building. Water entering through these cracks in the exterior is one of the probable sources of the standing water in the basement. Another source is gaps and holes around a grade-level trap door to the basement.

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

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. Roof access is via a door out of a masonry penthouse; a steep, narrow, dark stairway with very low headroom up from a 3rd floor stairway landing provides access to the roof penthouse. The roof over the auditorium is constructed of heavy timber trusses with wood decking. All appeared to be in good condition as observed in the attic space.

Exterior walls and are generally in good condition, however there are lintels above most basement windows, some upper windows, and some doors which are rusted with brick joint cracks extending from the lintels into the brick joints in the walls. On the roof, there are gaps along the caulk joint where the reglets meet parapet walls which could be sources for water to enter the wall, forming leaks inside. A more detailed inspection of masonry is required to repair all failing joints and ensure a watertight envelope. Brick is stained with dirt and mildew and should be cleaned.

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 plexiglas units do not meet today's energy code requirements and are large sources of heat loss. All wood trim around windows needs refinishing. Replacement of all windows is recommended.

Exterior doors are painted steel framed flush hollow metal units with steel frames. The main entrance and secondary main entrance on Rosehill Street have decorative Romanesque-style tile arches around door openings. They can be cleaned to highlight their style and artistic technique. Some doors have small glazing vision panels. Doors are in generally poor condition, have broken or non-functioning panic hardware, rusted dented panels and frames, and are not ADA compliant. There are no handicap entrances, no accessible ramps and no elevators. All exterior steel doors and hardware systems need to be replaced.

Roof coverings on the main building flat roof consist of a ceramic granule impregnated, fully adhered rolled asphalt sheet system with asphalt flashing up onto rooftop ventilation ductwork, vents, and asphalt-backed metal flashing on masonry parapets with reglets and counterflashing. The roof membrane is in poor condition with dried cracked asphalt seen along membrane joints. The membrane, flashing, and counterflashing embedded in brickwork covering the top of the flashing is weathered and is probably past its normal service life of 20 years. Masonry flashing at the base of rooftop structures and parapets has been repaired with excessive amounts of caulking now weathered, cracking, and the potential sources of future leaks. The top of the brick parapet wall has stone coping with joints that have been caulked; they appear to be in good condition. Roof openings include toilet room vents, ventilation ductwork, and roof drains. Flashing of the penetrations appears to be in poor condition and past its normal service life, although no leaks were reported. Joint cracks in the penthouse and chimney structures have been repointed; other areas are developing cracks and may be the source of water infiltration. There have been a few leaks reported in the interior of exterior walls below but after recent repairs, there are none have been reported by engineering. The auditorium is covered with lightweight "residential-type, 3-tab" asphalt roofing shingles sloping to pitched metal troughs on the two low sides of the roof. There is evidence of leaks on the backstage auditorium wall which might be originating from the metal drain trough. Troughs have been recently recaulked and this could still be a source of the leaks. This roof system is thin and appears to be at the end of its 20 year normal service life.

Partitions in basements are brick or concrete masonry units. The upper 2 floors of the original building ("Element 1") are thought to be constructed of wood and plaster on wood lath partitions. There are wood framed clerestory glass panels located in walls over classroom doors and between classroom storage areas and 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. Between some classrooms in "Element 1" are manually operated full height wood folding partitions. Most are not easy to operate and some are not moveable; in general they are not required and might not be stable if moved. In one case, however, a multi-purpose room was created by opening one of the old moveable walls, creating a large space used for evening events and meetings. Now that it is open, this wall is not re-closed. Walls between classrooms and corridors of "Element 2" are concrete masonry units (concrete block) and are generally crack free.

Interior doors are either the original wood and plate glass (not fire rated or wired) raised panel doors with original hardware or replacement wood doors with narrow wired glass vision panels and replacement hardware at least 20 years of age. Most wood doors regardless of age or type are damaged, have broken glass and broken hardware. Classroom doors do not have security locking feature from inside classrooms. Some interior basement doors are hollow metal in hollow metal frames and some are the original wood doors with wired glass. Most of the steel doors are rusted where coming in contact with floors. Upper level stairway doors are steel with 6 large divided lites with divided lite sidelites and transoms. This system does not have a UL label and does not appear to be fire rated, as required for stairway doors and partitions. Stairway doors do not positively latch as required of fire rated doors. 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. All doors and hardware in the building need to be replaced.

Interior fittings/hardware include black slate chalkboards with oak chalk trays or bulletin boards integral to the original dark oak folding wall partitions built into the folding panels. In some classrooms, the panels are not supported adequately at tops and bottoms and could fall off the track. These units are no longer opened as they are heavy and most hinges and bearings are not operable. Wall panels need to be replaced with sturdier, safer, fixed partitions. Toilet room partitions are either the original floor mounted marble toilet partitions or solid plastic replacement partitions. Many do not have doors. The usual sets of toilet room accessories (toilet paper dispensers, soap, paper towel or dryers, grab bars, door latches) are missing. Most toilet rooms are not clean and have years of built up dirt, however one toilet room has been refinished with new ceramic mosaic tile floors, tile walls, and toilet room accessories. New toilet partitions and accessories are required in all un-renovated toilet rooms.

Stair construction in the original building consists of concrete treads with cast-in steel tread plates, concrete risers, and concrete stringers with wood handrails (29" high), guards (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. Element 2 has no stairways which creates a dead end corridor code violation on the second and third floors. Exceeding travel distances is a serious fire hazard which needs to be addressed – a new fire stair is required for Element 2.

Wall finishes in the old building are plaster which is cracked with surface crazing in a number of classroom and corridor locations. There is usually damage in classrooms at doorways and corners. Moveable partitions between some classrooms are dark stained oak. Blackboards are embedded into wood panels but are no longer used. Wood panels are covered with staples and small gouges. Interior partitions in "Element 2" consist of glazed block wainscot in corridors with painted block above and painted block in classrooms, all in need of repainting. Corridors in the original building and Element 2 are plaster with some wood trim, both are generally in good condition with isolated cracks or damages requiring repair. Toilet rooms painted plaster walls and marble wainscots. The auditorium has a paneled wood wainscot that is in need of repair and refinishing. The queuing area outside the auditorium has plaster walls and columns with decorative plaster capitals on square columns. Some walls look like limestone blocks and are painted. These historical elements can be revitalized with some repair and new paint, creating an elegant entrance to the auditorium.

Floor finishes in the original building consist of mostly dark stained oak floors in classrooms and the auditorium. Most are in good enough condition to be stripped, sanded, and refinished. There are some classrooms and other rooms such as the main office, faculty lounge, and gymnasium (also serving as the cafeteria) finished with 12"x12" vinyl composition tile (VCT) over the old wood floors. Two small storage rooms in "Element 2" have 9"x9" tile floors that appear to be vinyl asbestos tiles (VAT). All wood floors need to be stripped and refinished to remove years of wax and dirt buildup; few need to be removed and replaced due to excessive warpage of the boards. All 12"x12" VCT floors need to be removed and replaced. Nine by nine inch tile floors may have asbestos and need to addressed as possible asbestos containing materials. They should be removed using proper asbestos abatement procedures if they are found to contain asbestos. Corridor floors are finished with 4'x4' (nominal size) concrete tiles which appear to be a monolithic system and highly durable. Edges along the walls form a coved base and are painted. These slabs have not been stripped and cleaned for years and have dirt sealed into the surface and corners, causing their color to be very dark and dingy. There is an especially large build-up of dirt at all corners. Stairs walking surfaces are finished in exposed concrete that has years of dirt ground into the surfaces. These floor finishes should be stripped, cleaned and resealed.

Ceiling finishes in corridors are 2x4 suspended acoustical ceiling tile system with recessed 2x4 fluorescent lighting fixtures. Ceilings in classrooms are 2x4 suspended acoustical ceiling tile system with surface mounted 1x4 fluorescent lighting fixtures. These ceilings are old and dirty, lighting fixtures are yellowed, and the entire system needs to be replaced.

There is no elevator in the school.

Furnishings include the original folding wood seating in the auditorium is still in use; however many seats need to be repaired to operate properly and many are scratched. With the unavailability of parts for repair and the worn condition of the seating, full replacement is required. Wood wainscot in the auditorium is generally in good condition and can be repaired and refinished. Casework in classrooms and the office is damaged, worn, and needs replacement. Few classrooms have smartboards.

**Grounds**

Paving and parking is constructed of asphalt and in need of repaving. Asphalt areas serve as parking and playground areas, separated by fences. Stairways into the building are limestone blocks (tread/riser) with grouted joints between blocks; all stairs need regrouting. Parking and play area striping is worn and almost invisible. Clear separation of play area and parking is not evident. The number of required parking spaces for school staff is unknown.

Fencing is chain-link system generally in good condition. There are some damaged and bent fence panels in need of replacement in the area of Element 2. Steel pipe handrails to rear parking and playground area and up front stairs are not in compliance with stair and handrail requirements of today's building code. New handrails and guards to entrances and play areas are required for safety and code compliance.

Landscaping is in need of trimming and maintenance.

There is an ADA ramp into the auditorium, but not the main entrance area.

**Mechanical**

Plumbing Fixtures – It appears that all of the bathrooms, including plumbing fixtures, were remodeled within the past 10. Fixtures in the restrooms on each floor consist of wall mounted water closets, wall hung urinals and lavatories with wheel handle faucets. The plumbing fixtures appear to be in satisfactory condition and should not need replacement within the next 10 years.

Drinking fountains in the corridors and outside the restrooms are wall hung with integral refrigerated coolers. Most appear to be beyond their service life. Replacement of all drinking fountains is recommended.

Janitor closets are available throughout the building and appear to have been updated at the time of the bathroom renovations. The Cafeteria has one two-compartment stainless steel sink with sanitizing basin and lever operated faucets. Janitor closets and kitchen plumbing fixtures appear to be in satisfactory condition and should not need replacement within the next 10 years.

Domestic Water Distribution - Domestic water distribution piping is soldered copper. Water service enters the building in the basement, with backflow preventers and the water meter on the main line after entering the building. There is a domestic water pressure pump skid with duplex pumps after the backflow preventers to increase the water pressure supplied to the building. The distribution piping appears to be in satisfactory condition and should not need service or replacement within the next 10 years.

One natural gas fired A.O. Smith vertical water heater tank is installed in the basement with appropriate piping, controls, and venting. The water heater appears to be in satisfactory condition and should not need replacement within the next 10 years.

Sanitary Waste - The sanitary waste piping systems are constructed of threaded cast iron. The small sewer ejector pit with one pump is located in the basement. The entire sanitary system appears to be comprised of the original installed equipment and is well beyond its serviceable life. Inspection of the entire sanitary system throughout the main building is recommended and full replacement will probably be required.

Rain Water Drainage - The rain water drains from the roof are routed through vertical piping located in mechanical chases in the building. There are no roof overflow drains. The District should consider adding overflow scuppers to prevent roof flooding.

Energy Supply - Duplex fuel oil supply pumps provide the required fuel to the boilers when operating on fuel oil. The concrete fuel tank is located in the basement adjacent to the fuel oil pumps. The pumps appear to be beyond their serviceable life and should be replaced. Inspection of the concrete fuel tank is required. Additional boiler room ventilation and a fire suppression/fire alarm system located in the fuel storage area are required.

Heat Generating Systems - Steam is generated in the main building by two Weil McLain 94 series oil fired boilers installed in 1972.

The boilers have Webster oil burners. The boilers and burners appear to be at the end of their serviceable life and should be replaced within the next 5 years.

Distribution Systems - Boiler feed water is treated with a combination of chemicals, controlled with a Master water treatment controller. This system has a condensate receiver with duplex pumps feeding a boiler feedwater tank, which also has duplex pumps. The condensate receiver package and the boiler feedwater package appear to be approximately 10 years old and should not need replacement for the next 10 years. The steam traps are failing throughout the building. The building engineer indicated that there is a constant stream of flash steam coming out of the boiler feed tank into the basement area and there poor steam distribution to "Element 2" (the "new" wing of the building) resulting in insufficient heat in Element 2. The steam and condensate return lines are only occasionally insulated and are beyond their serviceable life, requiring replacement.

Ventilation and additional heating for the main building was provided by a house fan in the basement, but this fan is no longer operational. Air had been pushed into most rooms of the building through ducts built into the walls. Air was exhausted from the rooms by separate ducts also built into the walls; the air traveled up through ducts in attic space out of the building through roof mounted vents. Presently, the only fresh air that the building receives is through the windows when opened. This is not an acceptable or code compliant condition for a public building – a fresh air delivery system is required. The bathrooms throughout the building have functional exhaust fans.

Terminal & Package Units – Most of the rooms in the building have window air conditioning units and most of the units are in operation (approximately 40 units total). Four rooms have unit ventilators which are not operational while the other rooms have radiators to generate heat. The majority of the radiators appear to be the originally installed equipment. There is a Mitsubishi ductless mini-split system serving the server room. This unit could not be inspected.

Controls & Instrumentation - There are some pneumatic thermostats on the walls that are not in service. The pneumatic control valves on the radiators are not in service. Most of the heating radiators are operating at 100% flow when the steam is on. This results in an "on-off" control for the whole building; when the boilers are on, the whole building has heat and when the boilers are off, the whole building is without heat. This creates a generally uncomfortable environment in the building. A new DDC system should be added to the main building for better heat control.

Sprinklers - There are no sprinklers in the main building. A new sprinkler system should be installed

**Electrical**

Site Electrical Service - The original electrical service is from Medium voltage overhead lines on wooden poles along Wyoming St. A utility power transformer is stepping down the voltage from existing medium Voltage to 120/208V, 3Ph 4 wire. That transformer is located in a concrete pit in front of the school on Rose hill Street. The main Breaker and utility metering are located in a closet at multipurpose room. There is one 1600 A distribution switchboard is located in boiler room.

Distribution System and Raceway System- The above mentioned distribution switchboard feeds all lighting and power panel boards throughout the building. An old 75KVA converter transformer convert the existing voltage to 2-240V 4wire for feeding the existing heat pumps. Each floor contains four lighting/power panel boards and two others for feeding the AC units. These panel boards and associated wiring are in good conditions.

Receptacles- Classrooms are typically supplied with duplex or quad receptacles spaced along all walls. Receptacle count for classrooms is adequate.

Lighting- The majority of lighting fixture in the building is 2x4 lay in grid or 1X4 surface mounted fluorescent lighting fixtures with T8 lamps and are in a good condition, however some repairs are needed.

Fire Alarm System- Building is equipped with 120V manual fire alarm system made by Couch Company. The company has been closed in 1985 and spare part is not found in the market since 2003. The existing system does not meet current fire alarm codes and shall be replaced.

Telephone / LAN- The telephone/LAN equipment/devices are located in second floor. Computer room and some classrooms and offices are provided with data outlets. Overall telephone and Local Area network system is adequate.

Public address/ Music- There is no separate PA system in the school. School uses the telephone systems for public announcement. This system is working adequately.

Intercom System and paging- present paging system in school is completely functional. The paging system is one way communication from office to classrooms. Two way communications is obtained through wall mounted phones in the classrooms and other areas.

Clock and program system- The clock and program system is not working properly.

Television System- There is no television distribution system is provided in the school.

Security System- Access control, Video surveillance- The present security intrusion alarm and video surveillance system is adequate.

Emergency power systems- There is no generator and transfer switch in the school.

UPS- An adequate UPS provided for the local area network system.

Elevator- There is no elevator in the school.

Emergency Lighting System / Exit Lighting- No emergency lighting provided in the school. This is a safety issue and code violation.

Lightning Protection System- The present Lightning Protection System is adequate. It is accomplished with air terminal mounted on the chimney; however, some repairs are needed. A study needs to be conducted to verify the air terminals provide the proper coverage.

Grounding- The present grounding system is good.

Elevator- There is no elevator in the school.

Site Lighting - The present Site Lighting System is adequate. Some lighting fixtures need to be repair.

Site Video Surveillance – The exterior building is monitored by an adequate video surveillance system.

Site Paging - The present Site Paging System is adequate.

**RECOMMENDATIONS**

**Architectural**

- Strip and repaint concrete foundation (basement) walls in mechanical rooms
- Strip and repaint basement ceilings in mechanical rooms
- Clean and repaint basement floor in mechanical rooms
- Clean and reseal concrete floors in hallways and stairways
- Remove and replace all lintels and cracked masonry at basement windows and grade exit doorways
- Inspect and repair cracked masonry joints on rooftop structures
- Replace all exterior windows with insulated single hung units
- Powerwash front and sides of building
- Replace all exterior doors with ADA and code compliant exit hardware
- Remove and replace existing flat roof and insulation; 5 levels
- Remove and replace existing sloped asphalt shingle roof
- Remove non-rated glass panels between classrooms and corridors; fill with fire rated gyp bd sys.
- Remove and replace all wood interior doors and frames in classrooms and offices, etc. with fire rated doors.
- Refinish all doors in interior of classrooms.
- Provide security hardware for classrooms and offices, locking from inside classroom.
- Provide ADA compliant level locksets or latchsets on all other replace doors
- Remove and replace all basement steel doors, frames, and hardware in mechanical rooms and stairways
- Remove folding wood partitions; replace with gypsum board and metal stud walls
- Provide toilet room accessories and partitions
- Repair and repaint interior plaster walls where damaged
- Provide new emergency exit stair for Element 2 from floors 3 and 2, exiting to grade.
- Remove and replace stairway handrails and guards with code compliant systems.
- Regrout all joints between limestone block tread/risers at exterior stairs
- Strip, sand, repair and refinish all wood floors in classrooms and auditorium

- Remove and replace all 12”x12” VCT floors in classrooms and gym
- Replace VAT floors using proper asbestos abatement procedures if determined asbestos is present
- Repaint all plaster ceilings in occupied spaces in the building
- Remove and replace folding wood auditorium chair with new chairs
- Add elevator to serve 4 floors (basement - 3rd floors)

**Grounds**

- Repave concrete playground panels and entrance area concrete
- Replace damaged areas of wrought iron fencing
- Repave asphalt parking & student staging/play area – only area utilized by staff
- Provide ADA accessible ramp into main entrance area / main floor of building.

**Mechanical**

- Replace of all drinking fountains in the Main building
- Inspect sanitary system throughout the main building.
- Replace duplex fuel oil pumps and skid
- Perform an inspection of the concrete fuel tank
- Install the required ventilation and fire suppression/alarm in the fuel storage area
- The boilers appear to be at the end of their serviceable life and should be replaced within the next 5 years
- Install a new DDC system for heat control
- Install a new sprinkler system
- Add overflow scuppers to roof parapet.
- Remove existing steam boilers and steam distribution system. Install hot water boilers and hot water distribution system.
- Install chiller and chilled water distribution system
- Install unit ventilators in all classrooms and the IMC
- Install AHU to condition the cafeteria
- Install AHU to condition the gymnasium
- Install AHU to condition the auditorium

**Electrical**

- Replace existing fire alarm system with a new automatic Fire Alarm System including control panel, initiated devices in corridors, air ducts, electrical and LAN rooms, library, and computer rooms. Provide notification devices in class rooms, offices, auditorium, corridors, other area recommended by codes.
- Install a new emergency power system including 100KW diesel generator and respective transfer switch.
- Provide emergency power to sufficient number of lighting fixtures in corridors, hallways, stairways and other egress ways to get minimum 1fc at egress ways per code.

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg Lot Tm: | Lot 1 / Tm 2 |
| Status: | Accepted by SDP | Team: | Tm 2 |
| Site ID: | S720001 | | |

## 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 | 52.00 % | 0.00 % | $0.00 |
| A20 - Basement Construction | 52.00 % | 0.00 % | $0.00 |
| B10 - Superstructure | 52.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 71.92 % | 55.82 % | $2,271,925.04 |
| B30 - Roofing | 109.48 % | 92.64 % | $832,627.47 |
| C10 - Interior Construction | 45.22 % | 61.72 % | $1,093,482.67 |
| C20 - Stairs | 52.00 % | 213.34 % | $217,184.09 |
| C30 - Interior Finishes | 91.19 % | 19.04 % | $709,063.80 |
| D10 - Conveying | 77.14 % | 260.79 % | $670,322.07 |
| D20 - Plumbing | 104.44 % | 36.05 % | $531,566.15 |
| D30 - HVAC | 72.83 % | 113.15 % | $9,087,805.10 |
| D40 - Fire Protection | 105.71 % | 177.00 % | $1,029,992.15 |
| D50 - Electrical | 59.65 % | 28.75 % | $1,220,013.95 |
| E10 - Equipment | 14.29 % | 0.00 % | $0.00 |
| E20 - Furnishings | 12.50 % | 117.29 % | $180,381.10 |
| G20 - Site Improvements | 39.69 % | 23.83 % | $448,773.29 |
| G40 - Site Electrical Utilities | 30.59 % | 0.00 % | $0.00 |
| **Totals:** | **64.91 %** | **47.43 %** | **$18,293,136.88** |

### 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) |
|---|---|---|---|---|---|---|---|
| B720001;Barton | 72,200 | 49.35 | $1,437,198.04 | $6,619,585.78 | $4,305,491.50 | $614,007.22 | $4,868,081.05 |
| G720001;Grounds | 120,200 | 18.65 | $0.00 | $128,012.04 | $152,382.57 | $168,378.68 | $0.00 |
| **Total:** | | **47.43** | **$1,437,198.04** | **$6,747,597.82** | **$4,457,874.07** | **$782,385.90** | **$4,868,081.05** |

### Deficiencies By Priority

- 1 - Response Time (< 2 yr) - $1,437,198.04
- 2 - Response Time (2-3 yrs) - $6,747,597.82
- 3 - Response Time (3-4 yrs) - $4,457,874.07
- 4 - Response Time (4-5 yrs) - $782,385.90
- 5 - Response Time (> 5 yrs) - $4,868,081.05

**Budget Estimate Total: $18,293,136.88**

## 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): | 72,200 |
| Year Built: | 1925 |
| Last Renovation: | |
| Replacement Value: | $36,159,365 |
| Repair Cost: | $17,844,363.59 |
| Total FCI: | 49.35 % |
| Total RSLI: | 66.71 % |


**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg ID: | B720001 |
| Sewage Ejector: | No | Status: | Accepted by SDP |
| Site ID: | S720001 | | |

## 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 | 52.00 % | 0.00 % | $0.00 |
| A20 - Basement Construction | 52.00 % | 0.00 % | $0.00 |
| B10 - Superstructure | 52.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 71.92 % | 55.82 % | $2,271,925.04 |
| B30 - Roofing | 109.48 % | 92.64 % | $832,627.47 |
| C10 - Interior Construction | 45.22 % | 61.72 % | $1,093,482.67 |
| C20 - Stairs | 52.00 % | 213.34 % | $217,184.09 |
| C30 - Interior Finishes | 91.19 % | 19.04 % | $709,063.80 |
| D10 - Conveying | 77.14 % | 260.79 % | $670,322.07 |
| D20 - Plumbing | 104.44 % | 36.05 % | $531,566.15 |
| D30 - HVAC | 72.83 % | 113.15 % | $9,087,805.10 |
| D40 - Fire Protection | 105.71 % | 177.00 % | $1,029,992.15 |
| D50 - Electrical | 59.65 % | 28.75 % | $1,220,013.95 |
| E10 - Equipment | 14.29 % | 0.00 % | $0.00 |
| E20 - Furnishings | 12.50 % | 117.29 % | $180,381.10 |
| **Totals:** | **66.71 %** | **49.35 %** | **$17,844,363.59** |

## 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. | 72,200 | 100 | 1925 | 2025 | 2067 | 52.00 % | 0.00 % | 52 | | | $1,328,480 |
| A1030 | Slab on Grade | $7.73 | S.F. | 72,200 | 100 | 1925 | 2025 | 2067 | 52.00 % | 0.00 % | 52 | | | $558,106 |
| A2010 | Basement Excavation | $6.55 | S.F. | 72,200 | 100 | 1925 | 2025 | 2067 | 52.00 % | 0.00 % | 52 | | | $472,910 |
| A2020 | Basement Walls | $12.70 | S.F. | 72,200 | 100 | 1925 | 2025 | 2067 | 52.00 % | 0.00 % | 52 | | | $916,940 |
| B1010 | Floor Construction | $75.10 | S.F. | 72,200 | 100 | 1925 | 2025 | 2067 | 52.00 % | 0.00 % | 52 | | | $5,422,220 |
| B1020 | Roof Construction | $13.88 | S.F. | 72,200 | 100 | 1925 | 2025 | 2067 | 52.00 % | 0.00 % | 52 | | | $1,002,136 |
| B2010 | Exterior Walls | $36.91 | S.F. | 72,200 | 100 | 1925 | 2025 | 2067 | 52.00 % | 12.23 % | 52 | | $325,990.41 | $2,664,902 |
| B2020 | Exterior Windows | $18.01 | S.F. | 72,200 | 40 | 1980 | 2020 | 2057 | 105.00 % | 144.28 % | 42 | | $1,876,061.84 | $1,300,322 |
| B2030 | Exterior Doors | $1.45 | S.F. | 72,200 | 25 | 1980 | 2005 | 2057 | 168.00 % | 66.74 % | 42 | | $69,872.79 | $104,690 |
| B3010105 | Built-Up | $37.76 | S.F. | 17,534 | 20 | 1990 | 2010 | 2037 | 110.00 % | 94.67 % | 22 | | $626,817.22 | $662,084 |
| 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. | 6,000 | 25 | 1985 | 2010 | 2042 | 108.00 % | 88.57 % | 27 | | $205,810.25 | $232,380 |
| B3020 | Roof Openings | $0.06 | S.F. | 72,200 | 20 | 1925 | 1945 | 2037 | 110.00 % | 0.00 % | 22 | | | $4,332 |
| C1010 | Partitions | $17.91 | S.F. | 72,200 | 100 | 1925 | 2025 | 2067 | 52.00 % | 9.92 % | 52 | | $128,334.08 | $1,293,102 |
| C1020 | Interior Doors | $3.51 | S.F. | 72,200 | 40 | 1925 | 1965 | 2030 | 37.50 % | 372.74 % | 15 | | $944,617.35 | $253,422 |
| C1030 | Fittings | $3.12 | S.F. | 72,200 | 40 | 1925 | 1965 | 2021 | 15.00 % | 9.11 % | 6 | | $20,531.24 | $225,264 |
| C2010 | Stair Construction | $1.41 | S.F. | 72,200 | 100 | 1925 | 2025 | 2067 | 52.00 % | 213.34 % | 52 | | $217,184.09 | $101,802 |

# Site Assessment Report - B720001;Barton

| System Code | System Description | Unit Price $ | UoM | Qty | Life | Year Installed | Calc Next Renewal Year | Next Renewal Year | RSLI% | FCI% | RSL | eCR | Deficiency $ | Replacement Value $ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C3010230 | Paint & Covering | $15.98 | S.F. | 72,200 | 10 | 1925 | 1935 | 2027 | 120.00 % | 16.27 % | 12 | | $187,759.17 | $1,153,756 |
| C3010231 | Vinyl Wall Covering | $0.00 | S.F. | | 15 | | | | 0.00 % | 0.00 % | | | | $0 |
| C3010232 | Wall Tile | $0.83 | S.F. | 72,200 | 30 | 1925 | 1955 | 2047 | 106.67 % | 0.00 % | 32 | | | $59,926 |
| C3020411 | Carpet | $7.30 | S.F. | 0 | 10 | | | | 0.00 % | 0.00 % | | | | $0 |
| C3020412 | Terrazzo & Tile | $75.52 | S.F. | 0 | 50 | | | | 0.00 % | 0.00 % | | | | $0 |
| C3020413 | Vinyl Flooring | $9.68 | S.F. | 18,100 | 20 | 1995 | 2015 | 2037 | 110.00 % | 57.97 % | 22 | | $101,565.55 | $175,208 |
| C3020414 | Wood Flooring | $22.27 | S.F. | 36,100 | 25 | 1925 | 1950 | 2037 | 88.00 % | 38.84 % | 22 | | $312,241.26 | $803,947 |
| C3020415 | Concrete Floor Finishes | $0.97 | S.F. | 18,000 | 50 | 1925 | 1975 | 2067 | 104.00 % | 396.34 % | 52 | | $69,201.60 | $17,460 |
| C3030 | Ceiling Finishes | $20.97 | S.F. | 72,200 | 25 | 1925 | 1950 | 2032 | 68.00 % | 2.53 % | 17 | | $38,296.22 | $1,514,034 |
| D1010 | Elevators and Lifts | $3.56 | S.F. | 72,200 | 35 | | | 2042 | 77.14 % | 260.79 % | 27 | | $670,322.07 | $257,032 |
| D2010 | Plumbing Fixtures | $13.52 | S.F. | 72,200 | 35 | 1925 | 1960 | 2052 | 105.71 % | 17.68 % | 37 | | $172,621.86 | $976,144 |
| D2020 | Domestic Water Distribution | $1.68 | S.F. | 72,200 | 25 | 1925 | 1950 | 2042 | 108.00 % | 0.00 % | 27 | | | $121,296 |
| D2030 | Sanitary Waste | $2.90 | S.F. | 72,200 | 25 | 1925 | 1950 | 2042 | 108.00 % | 146.43 % | 27 | | $306,604.96 | $209,380 |
| D2040 | Rain Water Drainage | $2.32 | S.F. | 72,200 | 30 | 1925 | 1955 | 2042 | 90.00 % | 31.25 % | 27 | | $52,339.33 | $167,504 |
| D3020 | Heat Generating Systems | $18.67 | S.F. | 72,200 | 35 | 1972 | 2007 | 2052 | 105.71 % | 97.32 % | 37 | | $1,311,840.72 | $1,347,974 |
| D3030 | Cooling Generating Systems | $24.48 | S.F. | 72,200 | 30 | | | | 0.00 % | 67.94 % | | | $1,200,803.61 | $1,767,456 |
| D3040 | Distribution Systems | $42.99 | S.F. | 72,200 | 25 | 1925 | 1950 | 2042 | 108.00 % | 170.17 % | 27 | | $5,281,957.86 | $3,103,878 |
| D3050 | Terminal & Package Units | $11.60 | S.F. | 72,200 | 20 | | | | 0.00 % | 0.00 % | | | | $837,520 |
| D3060 | Controls & Instrumentation | $13.50 | S.F. | 72,200 | 20 | 1970 | 1990 | 2037 | 110.00 % | 132.68 % | 22 | | $1,293,202.91 | $974,700 |
| D4010 | Sprinklers | $7.05 | S.F. | 72,200 | 35 | | | 2052 | 105.71 % | 202.35 % | 37 | | $1,029,992.15 | $509,010 |
| D4020 | Standpipes | $1.01 | S.F. | 72,200 | 35 | | | 2052 | 105.71 % | 0.00 % | 37 | | | $72,922 |
| D5010 | Electrical Service/Distribution | $9.70 | S.F. | 72,200 | 30 | 1995 | 2025 | 2025 | 33.33 % | 63.11 % | 10 | | $441,955.99 | $700,340 |
| D5020 | Lighting and Branch Wiring | $34.68 | S.F. | 72,200 | 20 | 2003 | 2023 | 2023 | 40.00 % | 2.84 % | 8 | | $70,997.90 | $2,503,896 |
| D5030 | Communications and Security | $12.99 | S.F. | 72,200 | 15 | 2004 | 2019 | 2034 | 126.67 % | 46.17 % | 19 | | $433,023.03 | $937,878 |
| D5090 | Other Electrical Systems | $1.41 | S.F. | 72,200 | 30 | 1925 | 1955 | 2047 | 106.67 % | 269.19 % | 32 | | $274,037.03 | $101,802 |
| E1020 | Institutional Equipment | $4.82 | S.F. | 72,200 | 35 | 1925 | 1960 | 2020 | 14.29 % | 0.00 % | 5 | | | $348,004 |
| E1090 | Other Equipment | $11.10 | S.F. | 72,200 | 35 | 1925 | 1960 | 2020 | 14.29 % | 0.00 % | 5 | | | $801,420 |
| E2010 | Fixed Furnishings | $2.13 | S.F. | 72,200 | 40 | 1925 | 1965 | 2020 | 12.50 % | 117.29 % | 5 | | $180,381.10 | $153,786 |
| | | | | | | | | **Total** | **66.71 %** | **49.35 %** | | | **$17,844,363.59** | **$36,159,365** |

## 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:** B3010105 - Built-Up — This system contains no images

**Note:** built-up roof 75%

**System:** B3010140 - Shingle & Tile — This system contains no images

**Note:** asphalt shingle roof 25%

**System:** C1010 - Partitions — This system contains no images

**Note:** glazed block / brick 6%
painted plaster on lath on wood studs 93%
wood 1%

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

**Note:** painted wall finish 95%
ceramic tile finish 5%

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

**Note:** vinyl tile (VCT) 25%
Wood floor stained and clearcoated 50%
concrete 25%

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

**Note:** 2x4 acoustical ceilings 75%
painted concrete or plaster 25%

## Renewal Schedule

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

*Inflation Rate: 3%*

| System | Current Deficiencies | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total:** | **$17,844,364** | **$0** | **$0** | **$0** | **$0** | **$1,661,855** | **$295,874** | **$0** | **$3,489,047** | **$0** | **$1,035,318** | **$24,326,458** |
| *** A - Substructure** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **A10 - Foundations** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **A1010 - Standard Foundations** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **A1030 - Slab on Grade** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **A20 - Basement Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **A2010 - Basement Excavation** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **A2020 - Basement Walls** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B - Shell** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B10 - Superstructure** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B1010 - Floor Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B1020 - Roof Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B20 - Exterior Enclosure** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B2010 - Exterior Walls** | $325,990 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$325,990** |
| **B2020 - Exterior Windows** | $1,876,062 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,876,062** |
| **B2030 - Exterior Doors** | $69,873 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$69,873** |
| **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** | $626,817 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$626,817** |
| **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** | $205,810 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$205,810** |
| **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** | $128,334 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$128,334** |

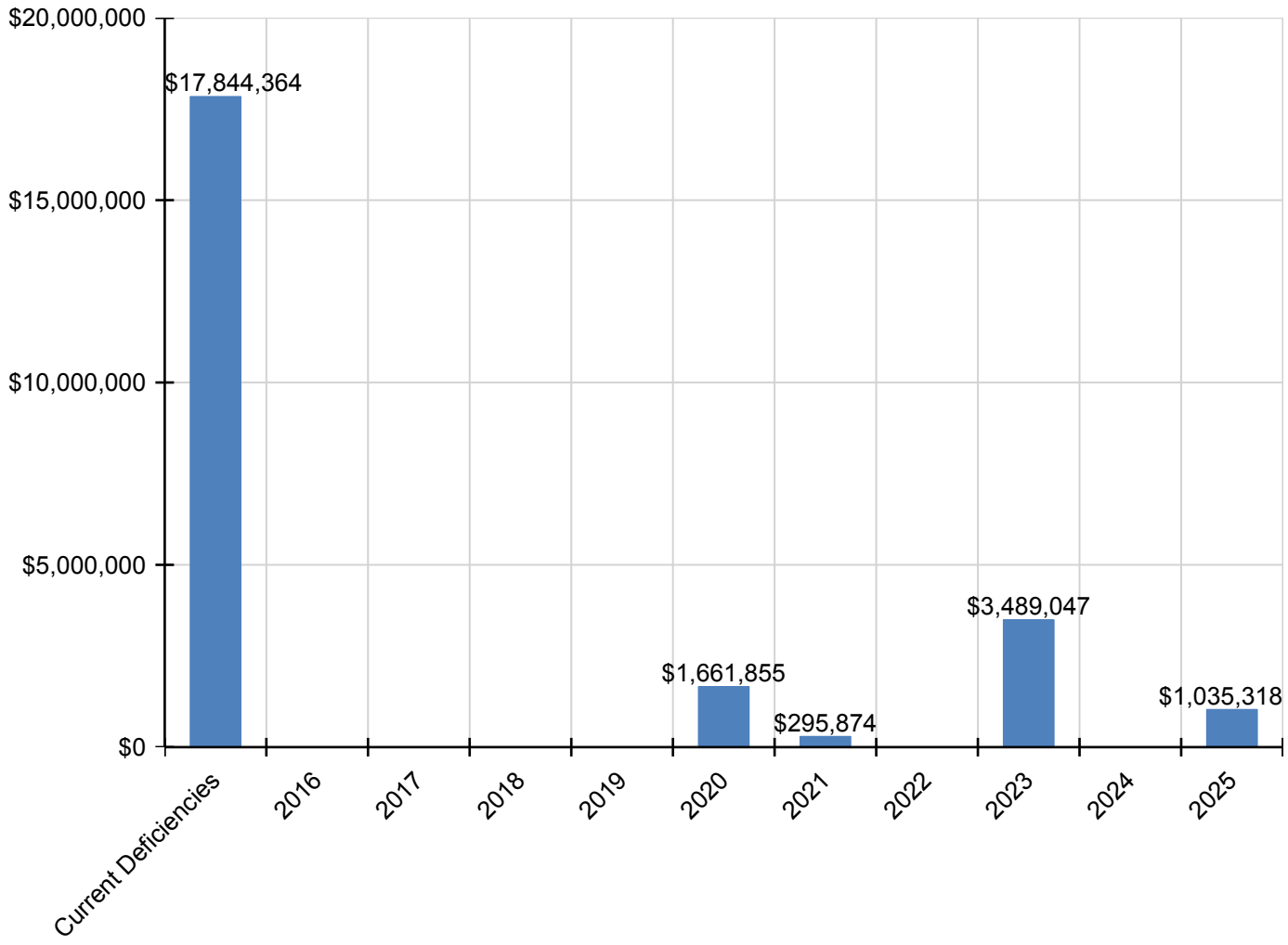
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **C1020 - Interior Doors** | $944,617 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$944,617** |
| **C1030 - Fittings** | $20,531 | $0 | $0 | $0 | $0 | $0 | $295,874 | $0 | $0 | $0 | $0 | **$316,405** |
| **C20 - Stairs** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C2010 - Stair Construction** | $217,184 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$217,184** |
| **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** | $187,759 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$187,759** |
| **C3010231 - Vinyl Wall Covering** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3010232 - Wall Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020 - Floor Finishes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020411 - Carpet** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020412 - Terrazzo & Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020413 - Vinyl Flooring** | $101,566 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$101,566** |
| **C3020414 - Wood Flooring** | $312,241 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$312,241** |
| **C3020415 - Concrete Floor Finishes** | $69,202 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$69,202** |
| **C3030 - Ceiling Finishes** | $38,296 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$38,296** |
| **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** | $670,322 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$670,322** |
| **D20 - Plumbing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D2010 - Plumbing Fixtures** | $172,622 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$172,622** |
| **D2020 - Domestic Water Distribution** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D2030 - Sanitary Waste** | $306,605 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$306,605** |
| **D2040 - Rain Water Drainage** | $52,339 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$52,339** |
| **D30 - HVAC** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3020 - Heat Generating Systems** | $1,311,841 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,311,841** |
| **D3030 - Cooling Generating Systems** | $1,200,804 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,200,804** |
| **D3040 - Distribution Systems** | $5,281,958 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$5,281,958** |
| **D3050 - Terminal & Package Units** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3060 - Controls & Instrumentation** | $1,293,203 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,293,203** |
| **D40 - Fire Protection** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D4010 - Sprinklers** | $1,029,992 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,029,992** |
| **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** | $441,956 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,035,318 | **$1,477,274** |
| **D5020 - Lighting and Branch Wiring** | $70,998 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3,489,047 | $0 | $0 | **$3,560,045** |
| **D5030 - Communications and Security** | $433,023 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$433,023** |
| **D5090 - Other Electrical Systems** | $274,037 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$274,037** |
| **E - Equipment & Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E10 - Equipment** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E1020 - Institutional Equipment** | $0 | $0 | $0 | $0 | $0 | $443,775 | $0 | $0 | $0 | $0 | $0 | **$443,775** |
| **E1090 - Other Equipment** | $0 | $0 | $0 | $0 | $0 | $1,021,972 | $0 | $0 | $0 | $0 | $0 | **$1,021,972** |
| **E20 - Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E2010 - Fixed Furnishings** | $180,381 | $0 | $0 | $0 | $0 | $196,109 | $0 | $0 | $0 | $0 | $0 | **$376,490** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

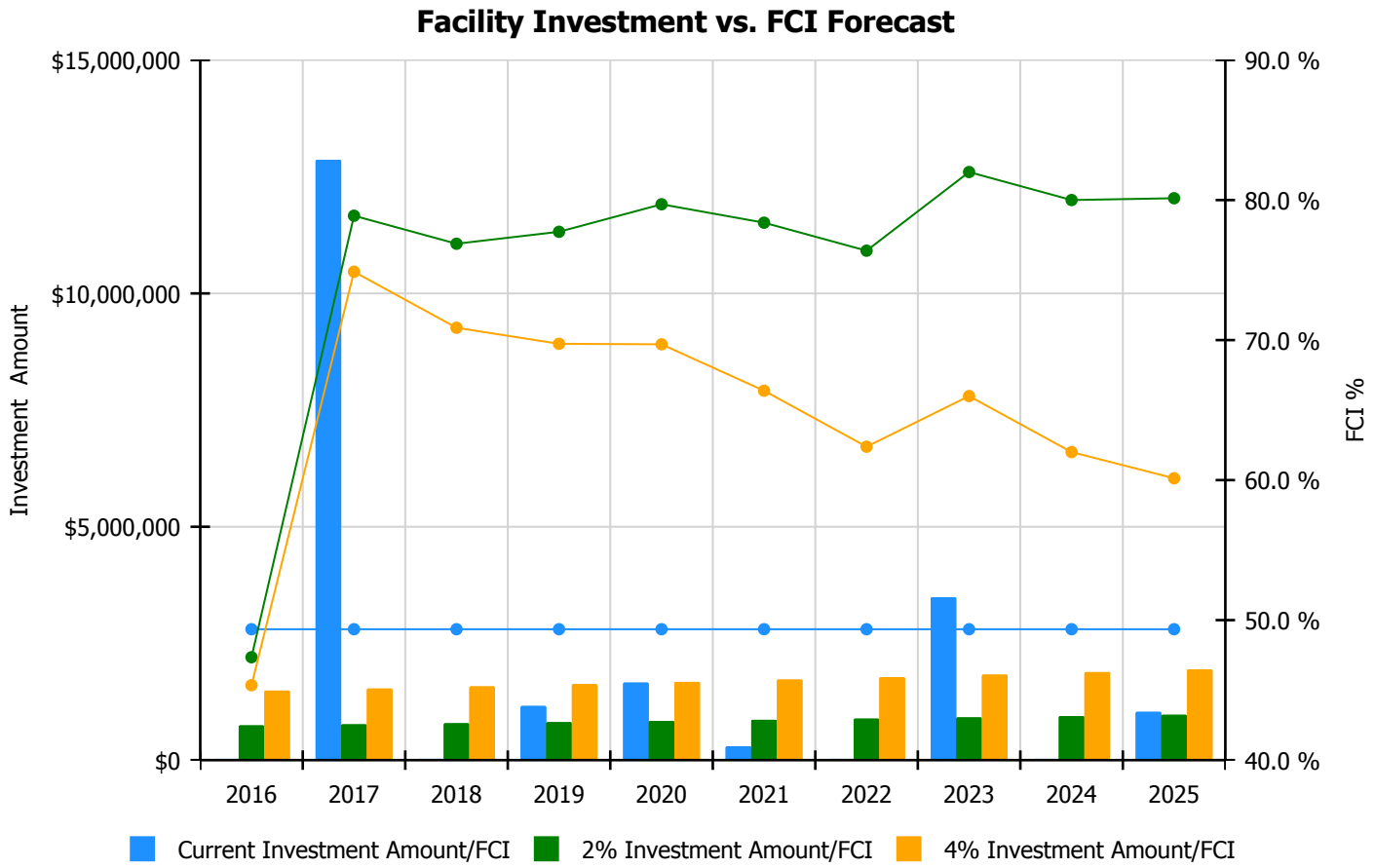
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



## 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:

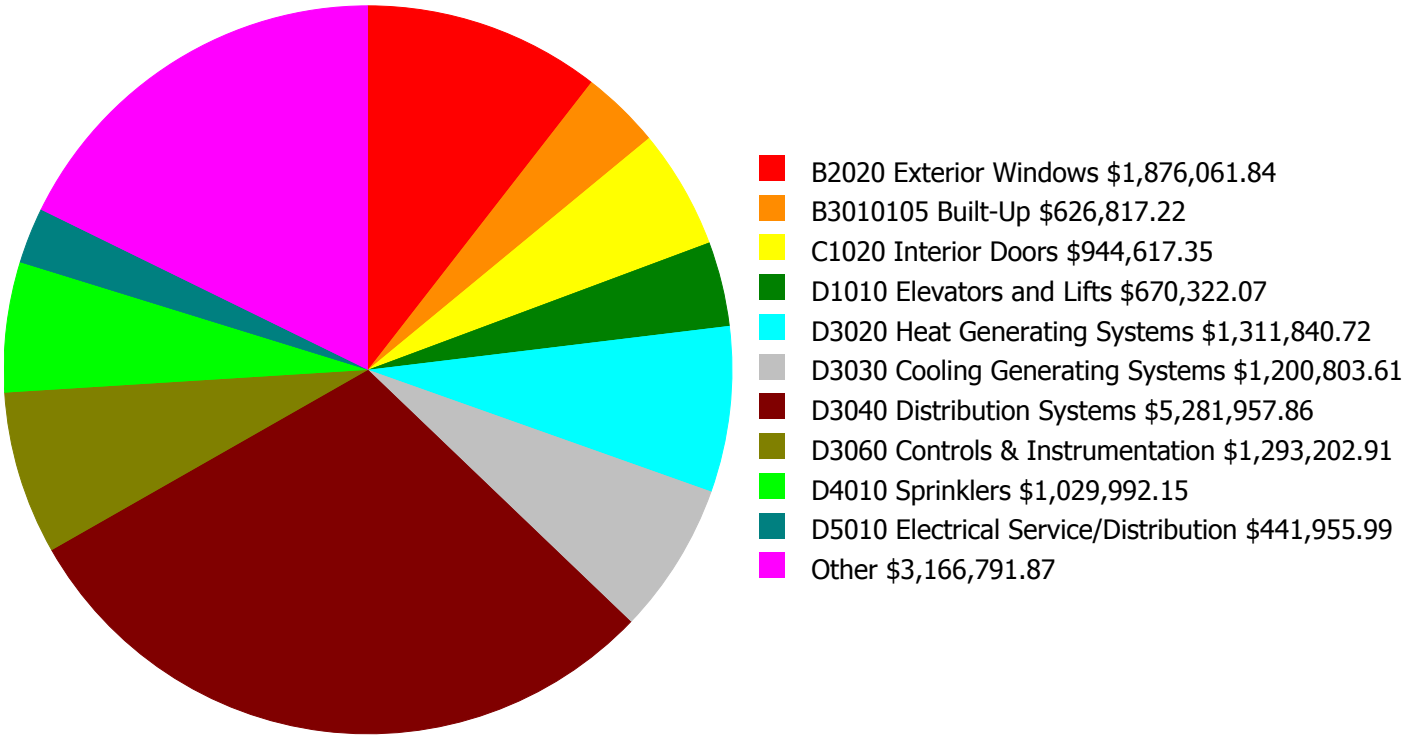
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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




| Year | Investment Amount Current FCI - 49.35% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $744,883.00 | 47.35 % | $1,489,766.00 | 45.35 % |
| 2017 | $12,863,233 | $767,229.00 | 78.88 % | $1,534,459.00 | 74.88 % |
| 2018 | $0 | $790,246.00 | 76.88 % | $1,580,493.00 | 70.88 % |
| 2019 | $1,161,149 | $813,954.00 | 77.73 % | $1,627,907.00 | 69.73 % |
| 2020 | $1,661,855 | $838,372.00 | 79.70 % | $1,676,745.00 | 69.70 % |
| 2021 | $295,874 | $863,523.00 | 78.38 % | $1,727,047.00 | 66.38 % |
| 2022 | $0 | $889,429.00 | 76.38 % | $1,778,858.00 | 62.38 % |
| 2023 | $3,489,047 | $916,112.00 | 82.00 % | $1,832,224.00 | 66.00 % |
| 2024 | $0 | $943,595.00 | 80.00 % | $1,887,191.00 | 62.00 % |
| 2025 | $1,035,318 | $971,903.00 | 80.13 % | $1,943,807.00 | 60.13 % |
| **Total:** | **$20,506,477** | **$8,539,246.00** | | **$17,078,497.00** | |

## Deficiency Summary by System

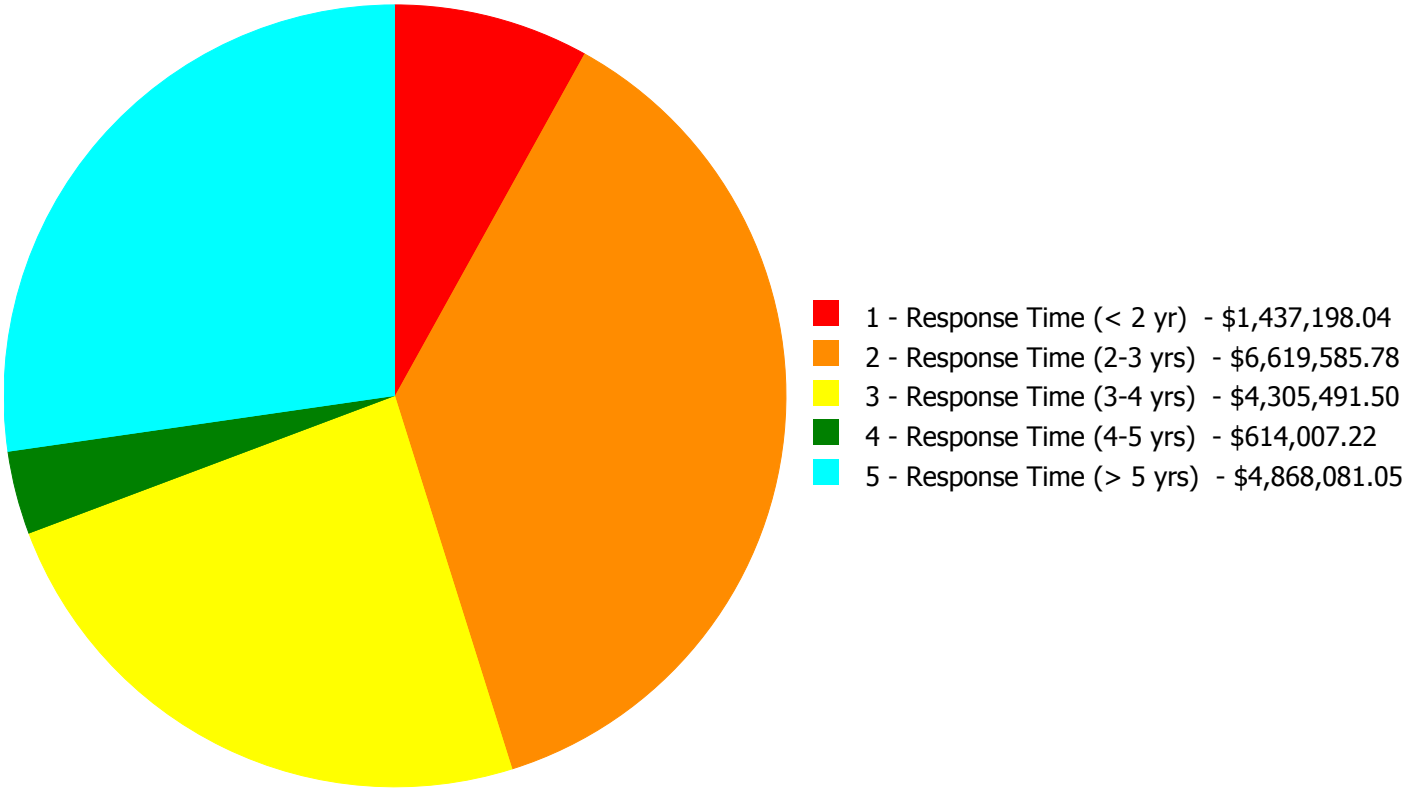
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $17,844,363.59**

## Deficiency Summary by Priority

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




**Budget Estimate Total: $17,844,363.59**

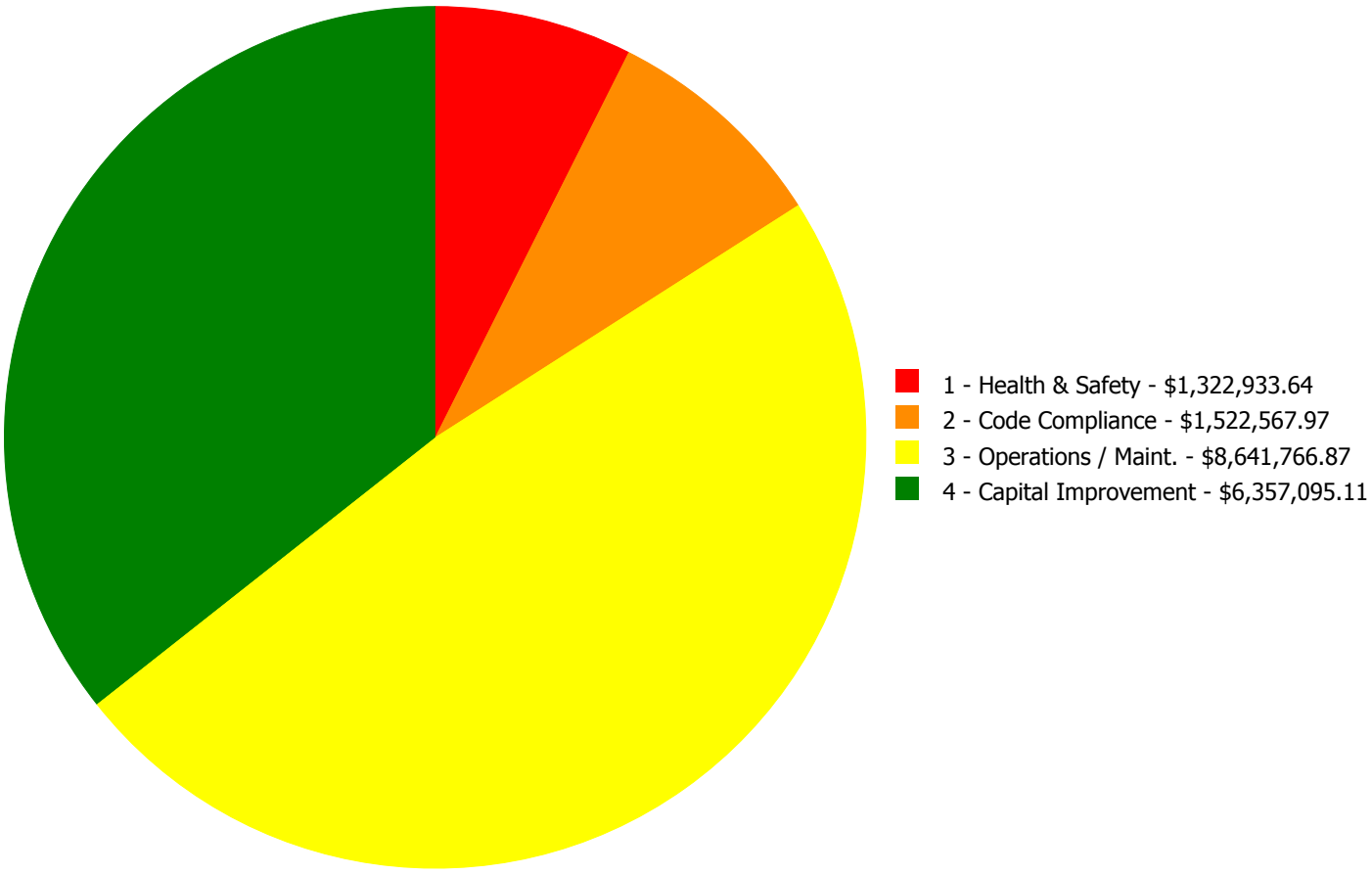
## Deficiency By Priority Investment Table

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 |
|---|---|---|---|---|---|---|---|
| B2010 | Exterior Walls | $0.00 | $191,210.01 | $0.00 | $134,780.40 | $0.00 | $325,990.41 |
| B2020 | Exterior Windows | $0.00 | $0.00 | $1,876,061.84 | $0.00 | $0.00 | $1,876,061.84 |
| B2030 | Exterior Doors | $0.00 | $69,872.79 | $0.00 | $0.00 | $0.00 | $69,872.79 |
| B3010105 | Built-Up | $0.00 | $626,817.22 | $0.00 | $0.00 | $0.00 | $626,817.22 |
| B3010140 | Shingle & Tile | $0.00 | $205,810.25 | $0.00 | $0.00 | $0.00 | $205,810.25 |
| C1010 | Partitions | $0.00 | $0.00 | $128,334.08 | $0.00 | $0.00 | $128,334.08 |
| C1020 | Interior Doors | $0.00 | $944,617.35 | $0.00 | $0.00 | $0.00 | $944,617.35 |
| C1030 | Fittings | $0.00 | $0.00 | $20,531.24 | $0.00 | $0.00 | $20,531.24 |
| C2010 | Stair Construction | $217,184.09 | $0.00 | $0.00 | $0.00 | $0.00 | $217,184.09 |
| C3010230 | Paint & Covering | $0.00 | $187,759.17 | $0.00 | $0.00 | $0.00 | $187,759.17 |
| C3020413 | Vinyl Flooring | $0.00 | $7,583.33 | $0.00 | $0.00 | $93,982.22 | $101,565.55 |
| C3020414 | Wood Flooring | $0.00 | $0.00 | $312,241.26 | $0.00 | $0.00 | $312,241.26 |
| C3020415 | Concrete Floor Finishes | $0.00 | $0.00 | $69,201.60 | $0.00 | $0.00 | $69,201.60 |
| C3030 | Ceiling Finishes | $0.00 | $0.00 | $38,296.22 | $0.00 | $0.00 | $38,296.22 |
| D1010 | Elevators and Lifts | $0.00 | $670,322.07 | $0.00 | $0.00 | $0.00 | $670,322.07 |
| D2010 | Plumbing Fixtures | $0.00 | $0.00 | $0.00 | $172,621.86 | $0.00 | $172,621.86 |
| D2030 | Sanitary Waste | $0.00 | $0.00 | $0.00 | $306,604.96 | $0.00 | $306,604.96 |
| D2040 | Rain Water Drainage | $0.00 | $52,339.33 | $0.00 | $0.00 | $0.00 | $52,339.33 |
| D3020 | Heat Generating Systems | $0.00 | $0.00 | $0.00 | $0.00 | $1,311,840.72 | $1,311,840.72 |
| D3030 | Cooling Generating Systems | $0.00 | $0.00 | $0.00 | $0.00 | $1,200,803.61 | $1,200,803.61 |
| D3040 | Distribution Systems | $0.00 | $3,482,873.16 | $567,622.35 | $0.00 | $1,231,462.35 | $5,281,957.86 |
| D3060 | Controls & Instrumentation | $0.00 | $0.00 | $1,293,202.91 | $0.00 | $0.00 | $1,293,202.91 |
| D4010 | Sprinklers | $0.00 | $0.00 | $0.00 | $0.00 | $1,029,992.15 | $1,029,992.15 |
| D5010 | Electrical Service/Distribution | $441,955.99 | $0.00 | $0.00 | $0.00 | $0.00 | $441,955.99 |
| D5020 | Lighting and Branch Wiring | $70,997.90 | $0.00 | $0.00 | $0.00 | $0.00 | $70,997.90 |
| D5030 | Communications and Security | $433,023.03 | $0.00 | $0.00 | $0.00 | $0.00 | $433,023.03 |
| D5090 | Other Electrical Systems | $274,037.03 | $0.00 | $0.00 | $0.00 | $0.00 | $274,037.03 |
| E2010 | Fixed Furnishings | $0.00 | $180,381.10 | $0.00 | $0.00 | $0.00 | $180,381.10 |
| | **Total:** | $1,437,198.04 | $6,619,585.78 | $4,305,491.50 | $614,007.22 | $4,868,081.05 | $17,844,363.59 |

## Deficiency Summary by Category

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




**Budget Estimate Total: $17,844,363.59**

## 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: 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:** 350.00

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

**Estimate:** $163,831.77

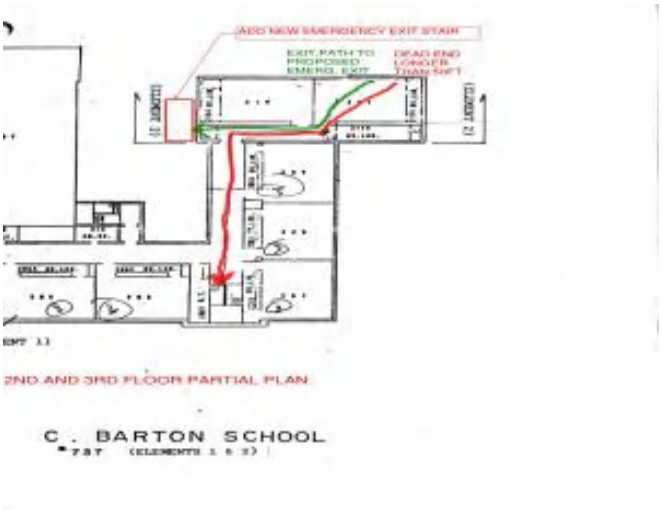
**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Remove and replace stairway handrails and guards with code compliant systems wall mounted pipe rails and center mounted rails with balustrades

---

**System: C2010 - Stair Construction**




**Location:** corridor

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

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

**Correction:** Repair exterior stairs

**Qty:** 80.00

**Unit of Measure:** Riser

**Estimate:** $32,832.20

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Provide new emergency exit stair for Element 2 from floors 3 and 2, exiting to grade.

---

**System: C2010 - Stair Construction**

**Location:** exterior stairs

**Distress:** Failing

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

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

**Correction:** Repair exterior stairs

**Qty:** 50.00

**Unit of Measure:** Riser

**Estimate:** $20,520.12

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Regrout all joints between limestone block tread/risers at exterior stairs

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

**Location:** Boiler Room

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

**Correction:** Add service entrance switchboard

**Qty:** 1.00

**Unit of Measure:** Ea.

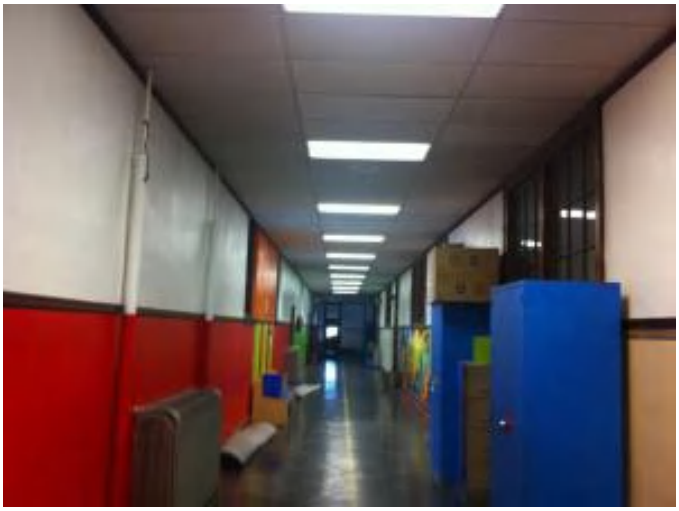
**Estimate:** $441,955.99

**Assessor Name:** System

**Date Created:** 09/17/2015

**Notes:** Upgrade the existing electrical service with a new 2000A service. Provide connection between existing switchboard with the new service switchboard.

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



**Location:** corridors and exitways

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

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

**Correction:** Add wiring device

**Qty:** 1.00

**Unit of Measure:** Ea.

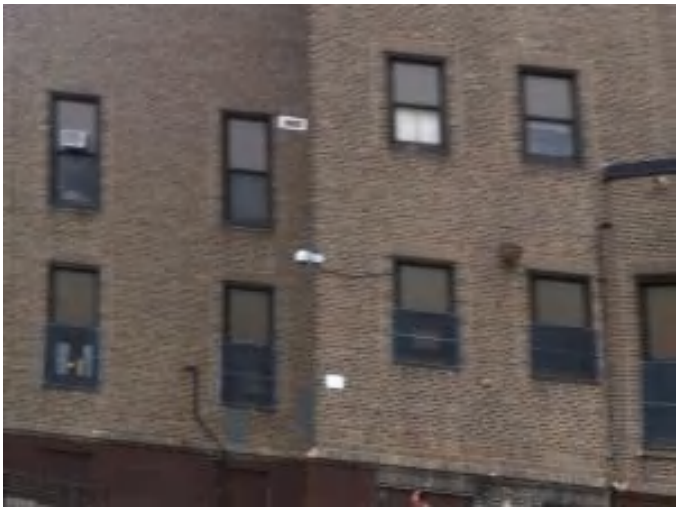
**Estimate:** $59,888.97

**Assessor Name:** System

**Date Created:** 07/29/2015

**Notes:** Provide emergency power to sufficient number of lighting fixtures in corridors, hallways, stairways and other egress ways to get minimum 1fc at egress ways per code.

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



**Location:** Exterior Building

**Distress:** Damaged

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

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

**Correction:** Replace lighting fixtures

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $11,108.93

**Assessor Name:** System

**Date Created:** 08/05/2015

**Notes:** Replace existing lighting fixtures that are not functioning. Estimated 30each

**System: D5030 - Communications and Security**

**Location:** Entire 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:** $433,023.03

**Assessor Name:** System

**Date Created:** 07/29/2015

**Notes:** Replace existing fire alarm system with a new automatic Fire Alarm System including control panel, initiated devices in corridors, air ducts, electrical and LAN rooms, library, and computer rooms. Provide notification devices in class rooms, offices, auditorium, corridors, other area recommended by codes.

**System: D5090 - Other Electrical Systems**

This deficiency has no image.

**Location:** Boiler Room

**Distress:** Beyond Service Life

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

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

**Correction:** Add Standby Generator System

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $245,510.84

**Assessor Name:** System

**Date Created:** 07/29/2015

**Notes:** Install a new emergency power system including 100KW diesel generator and respective transfer switch.

**System: D5090 - Other Electrical Systems**

**Location:** Roof

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

**Category:** 1 - Health & Safety

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

**Correction:** Repair Lightning Protection System

**Qty:** 1.00

**Unit of Measure:** Job

**Estimate:** $28,526.19

**Assessor Name:** System

**Date Created:** 08/05/2015

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

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

**System: B2010 - Exterior Walls**

**Location:** exterior walls

**Distress:** Failing

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

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

**Correction:** Remove and replacing failing steel lintels in brick wall construction

**Qty:** 400.00

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

**Estimate:** $191,210.01

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Remove and replace all lintels at basement windows and grade exit doorways

**System: B2030 - Exterior Doors**

**Location:** exterior doors

**Distress:** Damaged

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

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

**Correction:** Replace hardware with compliant hardware, paint and weatherstrip - per leaf

**Qty:** 20.00

**Unit of Measure:** Ea.

**Estimate:** $69,872.79

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Replace all non-operational exterior door hardware with ADA and code compliant exit hardware

**System: B3010105 - Built-Up**

**Location:** roof

**Distress:** Beyond Service Life

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

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

**Correction:** Remove and Replace Built Up Roof

**Qty:** 18,500.00

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

**Estimate:** $626,817.22

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Remove and replace existing flat roof and insulation;

**System: B3010140 - Shingle & Tile**

**Location:** asphalt roof (auditorium)

**Distress:** Beyond Service Life

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

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

**Correction:** Remove and replace asphalt shingle roof - partial area

**Qty:** 6,000.00

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

**Estimate:** $205,810.25

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Remove and replace existing sloped asphalt shingle roof on auditorium

**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:** 100.00

**Unit of Measure:** Ea.

**Estimate:** $465,433.90

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Remove and replace all wood interior doors and frames in classrooms, etc. with code compliant fire rated doors (100)

**System: C1020 - Interior Doors**


**Location:** interior rooms

**Distress:** Damaged

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

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

**Correction:** Remove and replace hollow metal frames and doors

**Qty:** 60.00

**Unit of Measure:** Ea.

**Estimate:** $304,679.23

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Remove and replace all steel doors, frames, and hardware in mechanical rooms, basement, and stairways

**System: C1020 - Interior Doors**

**Location:** interior of rooms

**Distress:** Beyond Service Life

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

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

**Correction:** Refinish interior doors

**Qty:** 100.00

**Unit of Measure:** Ea.

**Estimate:** $82,818.30

**Assessor Name:** System

**Date Created:** 12/14/2015

**Notes:** Refinish all wood interior doors and frames in closets and interior of rooms (100)

**System: C1020 - Interior Doors**

**Location:** interior doors

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

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

**Correction:** Replace door knobs with compliant lever type

**Qty:** 140.00

**Unit of Measure:** Ea.

**Estimate:** $77,919.73

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Provide ADA compliant level locksets or latchsets on all other replace doors

**System: C1020 - Interior Doors**

**Location:** classroom and office doors

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

**Category:** 1 - Health & Safety

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

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

**Qty:** 60.00

**Unit of Measure:** Ea.

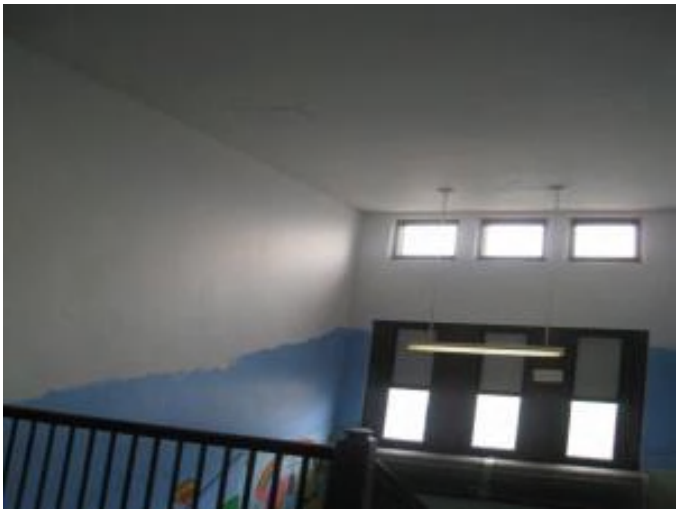
**Estimate:** $13,766.19

**Assessor Name:** System

**Date Created:** 07/30/2015

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

**System: C3010230 - Paint & Covering**



**Location:** interior walls

**Distress:** Appearance

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

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

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

**Qty:** 20,000.00

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

**Estimate:** $102,169.74

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Repair and repaint interior plaster walls where damaged

**System: C3010230 - Paint & Covering**

**Location:** boiler and 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:** 12,000.00

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

**Estimate:** $60,046.99

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Strip and repaint concrete foundation (basement) walls in mechanical rooms

**System: C3010230 - Paint & Covering**

**Location:** ceilings

**Distress:** Appearance

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

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

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

**Qty:** 5,000.00

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

**Estimate:** $25,542.44

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Repaint plaster ceilings where damaged in the building

**System: C3020413 - Vinyl Flooring**

**Location:** offices

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

**Category:** 1 - Health & Safety

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

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

**Qty:** 500.00

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

**Estimate:** $7,583.33

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Replace VAT floors using proper asbestos abatement procedures if determined asbestos is present

**System: D1010 - Elevators and Lifts**

This deficiency has no image.

**Location:** to be determined

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

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

**Correction:** Add interior elevator - 4 floors - adjust the electrical run lengths to hook up the elevator

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $670,322.07

**Assessor Name:** System

**Date Created:** 08/07/2015

**Notes:** add elevator to serve 4 floors (basement - 3rd floors)

**System: D2040 - Rain Water Drainage**

**Location:** roof

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

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

**Correction:** Create new overflow scupper through a parapet with up to 100' downspout

**Qty:** 5.00

**Unit of Measure:** Ea.

**Estimate:** $52,339.33

**Assessor Name:** System

**Date Created:** 10/23/2015

**Notes:** Add overflow scuppers to roof.

**System: D3040 - Distribution Systems**

**Location:** classrooms

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

**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:** 72,200.00

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

**Estimate:** $3,482,873.16

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** Install unit ventilators in all classrooms and IMC

**System: E2010 - Fixed Furnishings**

**Location:** auditorium

**Distress:** Beyond Service Life

**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:** 200.00

**Unit of Measure:** Ea.

**Estimate:** $180,381.10

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Repair and replace (if necessary) folding wood auditorium chair with new chairs

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

**System: B2020 - Exterior Windows**

**Location:** exterior walls

**Distress:** Beyond Service Life

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

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

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

**Qty:** 300.00

**Unit of Measure:** Ea.

**Estimate:** $1,876,061.84

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Replace all exterior windows with insulated single hung units

**System: C1010 - Partitions**

**Location:** classrooms

**Distress:** Beyond Service Life

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

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

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

**Qty:** 5,400.00

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

**Estimate:** $120,309.28

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Remove folding wood partitions; replace with gypsum board and metal stud walls

**System: C1010 - Partitions**

**Location:** corridors

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

**Category:** 1 - Health & Safety

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

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

**Qty:** 300.00

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

**Estimate:** $8,024.80

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Remove non-rated glass panels between classrooms and corridors; fill with fire rated gyp bd sys.

**System: C1030 - Fittings**

**Location:** toilet rooms

**Distress:** Beyond Service Life

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

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

**Correction:** Remove and replace toilet partitions

**Qty:** 8.00

**Unit of Measure:** Ea.

**Estimate:** $20,531.24

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Provide toilet room accessories and partitions (old bathrooms not yet renovated)

**System: C3020414 - Wood Flooring**

**Location:** classrooms, auditoriums
**Distress:** Appearance
**Category:** 3 - Operations / Maint.
**Priority:** 3 - Response Time (3-4 yrs)
**Correction:** Refinish wood floors
**Qty:** 29,000.00
**Unit of Measure:** S.F.
**Estimate:** $312,241.26
**Assessor Name:** System
**Date Created:** 07/30/2015

**Notes:** Strip, sand, repair and refinish all wood floors in classrooms and auditorium

**System: C3020415 - Concrete Floor Finishes**

**Location:** interiors - corridors
**Distress:** Appearance
**Category:** 3 - Operations / Maint.
**Priority:** 3 - Response Time (3-4 yrs)
**Correction:** Clean and reseal concrete floors
**Qty:** 10,000.00
**Unit of Measure:** S.F.
**Estimate:** $38,445.33
**Assessor Name:** System
**Date Created:** 07/30/2015

**Notes:** Clean and reseal concrete floors in hallways and stairways

**System: C3020415 - Concrete Floor Finishes**

**Location:** boiler room floor

**Distress:** Appearance

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

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

**Correction:** Clean and reseal concrete floors

**Qty:** 8,000.00

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

**Estimate:** $30,756.27

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Clean and repaint basement floor in mechanical rooms

**System: C3030 - Ceiling Finishes**

**Location:** boiler room

**Distress:** Appearance

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

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

**Correction:** Re-paint ceilings - SF of ceilings

**Qty:** 8,000.00

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

**Estimate:** $38,296.22

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Strip and repaint basement ceilings in mechanical rooms

**System: D3040 - Distribution Systems**

**Location:** Throughout 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:** 60,000.00

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

**Estimate:** $567,622.35

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** Hire a qualified contractor to inspect the steam and condensate piping to identify and replace damaged section and to determine the extent of potential failures.

**System: D3060 - Controls & Instrumentation**

**Location:** entire building

**Distress:** Obsolete

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

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

**Correction:** Replace pneumatic controls with DDC (150KSF)

**Qty:** 72,200.00

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

**Estimate:** $1,293,202.91

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** Install a new DDC system to the main building

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

**System: B2010 - Exterior Walls**

**Location:** exterior walls

**Distress:** Appearance

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

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

**Correction:** Remove graffiti - power wash and paint

**Qty:** 20,000.00

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

**Estimate:** $134,780.40

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Powerwash front and sides of building

**System: D2010 - Plumbing Fixtures**

**Location:** corridors

**Distress:** Beyond Service Life

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

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

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

**Qty:** 11.00

**Unit of Measure:** Ea.

**Estimate:** $172,621.86

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** Replace of all drinking fountains in the Main building

**System: D2030 - Sanitary Waste**

This deficiency has no image.

**Location:** entire building

**Distress:** Beyond Service Life

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

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

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

**Qty:** 72,200.00

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

**Estimate:** $306,604.96

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** Inspect sanitary system throughout the main building

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

**System: C3020413 - Vinyl Flooring**

**Location:** gymnasium, classrooms

**Distress:** Beyond Service Life

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

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

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

**Qty:** 11,000.00

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

**Estimate:** $93,982.22

**Assessor Name:** System

**Date Created:** 07/30/2015

**Notes:** Remove and replace all 12”x12” VCT floors in classrooms and gym

**System: D3020 - Heat Generating Systems**

**Location:** boiler room

**Distress:** Beyond Service Life

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

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

**Correction:** Replace boiler, cast iron sectional (150 HP)

**Qty:** 2.00

**Unit of Measure:** Ea.

**Estimate:** $1,050,121.66

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** The steam boilers appear to be at the end of their serviceable life and should be replaced within the next 5 years with hot water boilers..

**System: D3020 - Heat Generating Systems**

**Location:** outside building, location to be determined

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

**Category:** 1 - Health & Safety

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

**Correction:** Provide fuel oil tank, above ground concrete encased (8,000 gal)

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $235,040.98

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** Replace concrete fuel tank

**System: D3020 - Heat Generating Systems**

**Location:** boiler 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:** 08/04/2015

**Notes:** Replace duplex fuel oil pumps and skid

**System: D3030 - Cooling Generating Systems**

**Location:** entire building

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

**Correction:** Install chilled water system with distribution piping and pumps. (+150KSF)

**Qty:** 72,200.00

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

**Estimate:** $1,200,803.61

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** Install chiller and chilled water distribution system

**System: D3040 - Distribution Systems**

**Location:** auditorium

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

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

**Qty:** 400.00

**Unit of Measure:** Seat

**Estimate:** $570,170.82

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** Install AHU to condition the auditorium

**System: D3040 - Distribution Systems**

**Location:** cafeteria

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

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

**Qty:** 755.00

**Unit of Measure:** Pr.

**Estimate:** $352,990.49

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** Install AHU to condition the cafeteria

**System: D3040 - Distribution Systems**

**Location:** gym

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

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

**Qty:** 6,000.00

**Unit of Measure:** Ea.

**Estimate:** $308,301.04

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** Install AHU to condition the gymnasium

**System: D4010 - Sprinklers**

**Location:** entire building

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

**Category:** 1 - Health & Safety

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

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

**Qty:** 72,000.00

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

**Estimate:** $1,029,992.15

**Assessor Name:** System

**Date Created:** 08/04/2015

**Notes:** Install a new sprinkler system

## Equipment Inventory

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

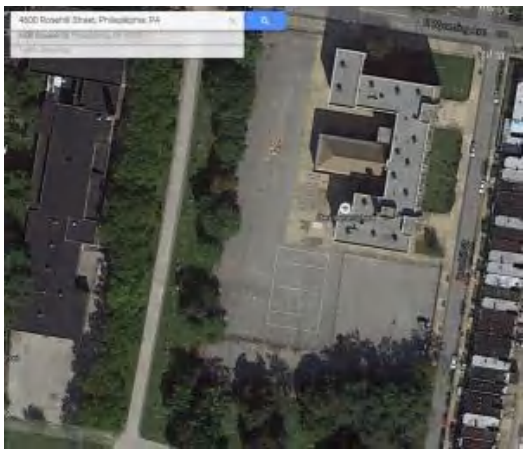
| Subsystem | Inventory | Qty | UoM | Location | Manufacturer | Model Number | Serial Number | Barcode | Life | Install Date | Next Renewal | Raw Cost | Inventory Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D3020 Heat Generating Systems | Boiler, gas/oil combination, cast iron, steam, gross output, 5230 MBH, includes burners, controls and insulated jacket, packaged | 1.00 | Ea. | boiler room | Weil McLain | 94 | 107089B | | 35 | 1972 | 2007 | $122,870.00 | $135,157.00 |
| D3020 Heat Generating Systems | Boiler, gas/oil combination, cast iron, steam, gross output, 5230 MBH, includes burners, controls and insulated jacket, packaged | 1.00 | Ea. | boiler room | Weil McLain | 94 | 107090B | | 35 | 1972 | 2007 | $122,870.00 | $135,157.00 |
| D5010 Electrical Service/Distribution | Switchgear installation, incl switchboard, panels & circuit breaker, 120/208 V, 1600 A | 1.00 | Ea. | service enterance in electrical closet at multipurpose room and distribution switchboard in boiler room | | | | | 20 | 1995 | 2020 | $40,458.15 | $44,503.97 |
| | | | | | | | | | | | | **Total:** | **$314,817.97** |

## 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): | 120,200 |
| Year Built: | 1925 |
| Last Renovation: | |
| Replacement Value: | $2,405,978 |
| Repair Cost: | $448,773.29 |
| Total FCI: | 18.65 % |
| Total RSLI: | 37.71 % |



**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Bldg ID: | S720001 | Site ID: | S720001 |

## 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 | 39.69 % | 23.83 % | $448,773.29 |
| G40 - Site Electrical Utilities | 30.59 % | 0.00 % | $0.00 |
| **Totals:** | **37.71 %** | **18.65 %** | **$448,773.29** |

## Condition Detail

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

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

## System Listing

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

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

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

| System Code | System Description | Unit Price $ | UoM | Qty | Life | Year Installed | Calc Next Renewal Year | Next Renewal Year | RSLI% | FCI% | RSL | eCR | Deficiency $ | Replacement Value $ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G2010 | Roadways | $11.52 | S.F. | 0 | 30 | 1980 | 2010 | 2027 | 40.00 % | 0.00 % | 12 | | | $0 |
| G2020 | Parking Lots | $7.65 | S.F. | 20,000 | 30 | 1980 | 2010 | 2020 | 16.67 % | 99.60 % | 5 | | $152,382.57 | $153,000 |
| G2030 | Pedestrian Paving | $11.52 | S.F. | 102,000 | 40 | 1980 | 2020 | 2027 | 30.00 % | 10.89 % | 12 | | $128,012.04 | $1,175,040 |
| G2040 | Site Development | $4.36 | S.F. | 120,200 | 25 | 1980 | 2005 | 2027 | 48.00 % | 32.13 % | 12 | | $168,378.68 | $524,072 |
| G2050 | Landscaping & Irrigation | $3.78 | S.F. | 8,200 | 15 | 1980 | 1995 | 2072 | 380.00 % | 0.00 % | 57 | | | $30,996 |
| G4020 | Site Lighting | $3.58 | S.F. | 120,200 | 30 | 1980 | 2010 | 2024 | 30.00 % | 0.00 % | 9 | | | $430,316 |
| G4030 | Site Communications & Security | $0.77 | S.F. | 120,200 | 30 | 1980 | 2010 | 2025 | 33.33 % | 0.00 % | 10 | | | $92,554 |
| | | | | | | | | **Total** | **37.71 %** | **18.65 %** | | | **$448,773.29** | **$2,405,978** |

## 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.

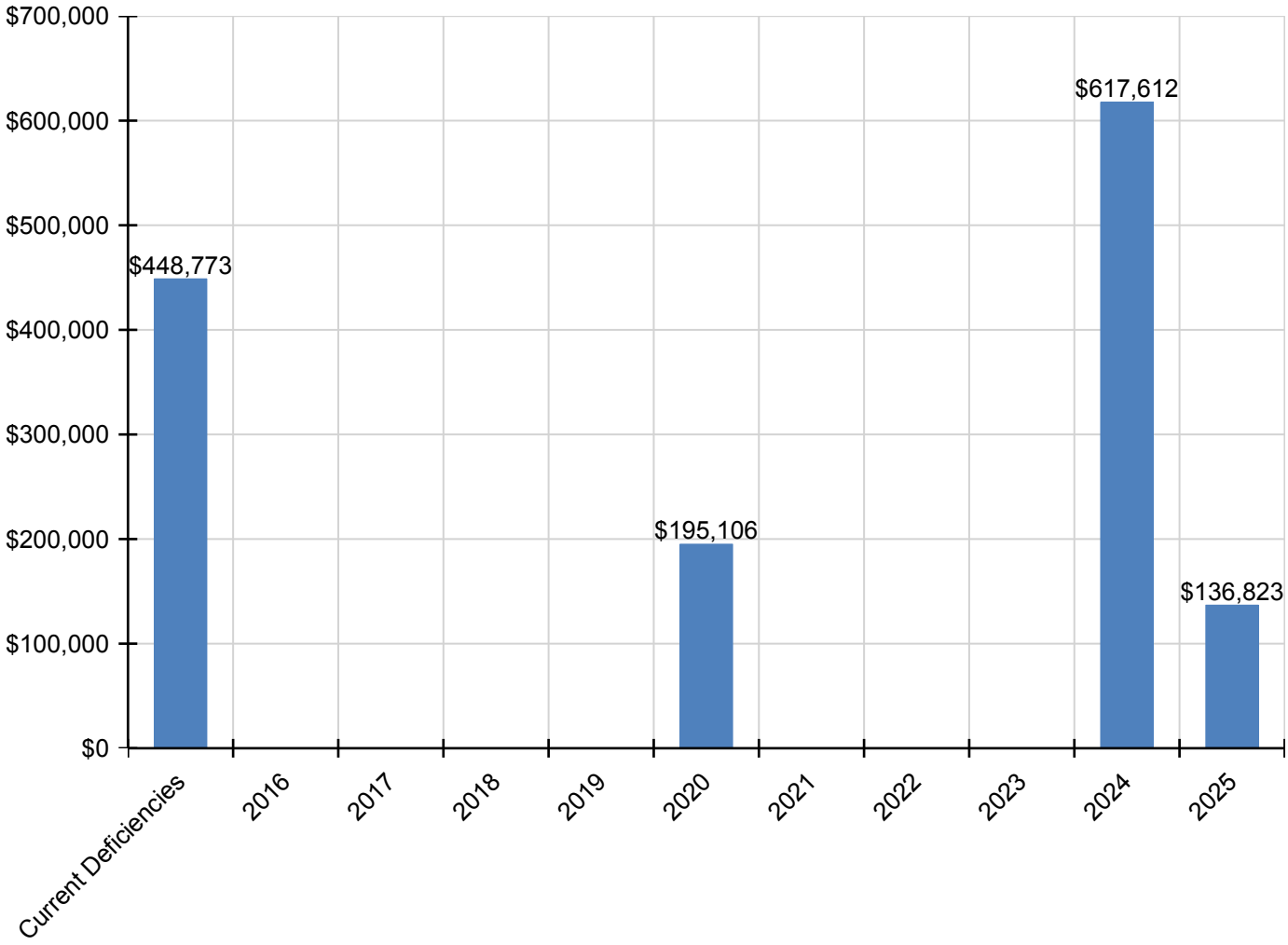
*Inflation Rate: 3%*

| System | Current Deficiencies | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total:** | **$448,773** | **$0** | **$0** | **$0** | **$0** | **$195,106** | **$0** | **$0** | **$0** | **$617,612** | **$136,823** | **$1,398,314** |
| **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** | $152,383 | $0 | $0 | $0 | $0 | $195,106 | $0 | $0 | $0 | $0 | $0 | **$347,488** |
| **G2030 - Pedestrian Paving** | $128,012 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$128,012** |
| **G2040 - Site Development** | $168,379 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$168,379** |
| **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 | $617,612 | $0 | **$617,612** |
| **G4030 - Site Communications & Security** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $136,823 | **$136,823** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

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

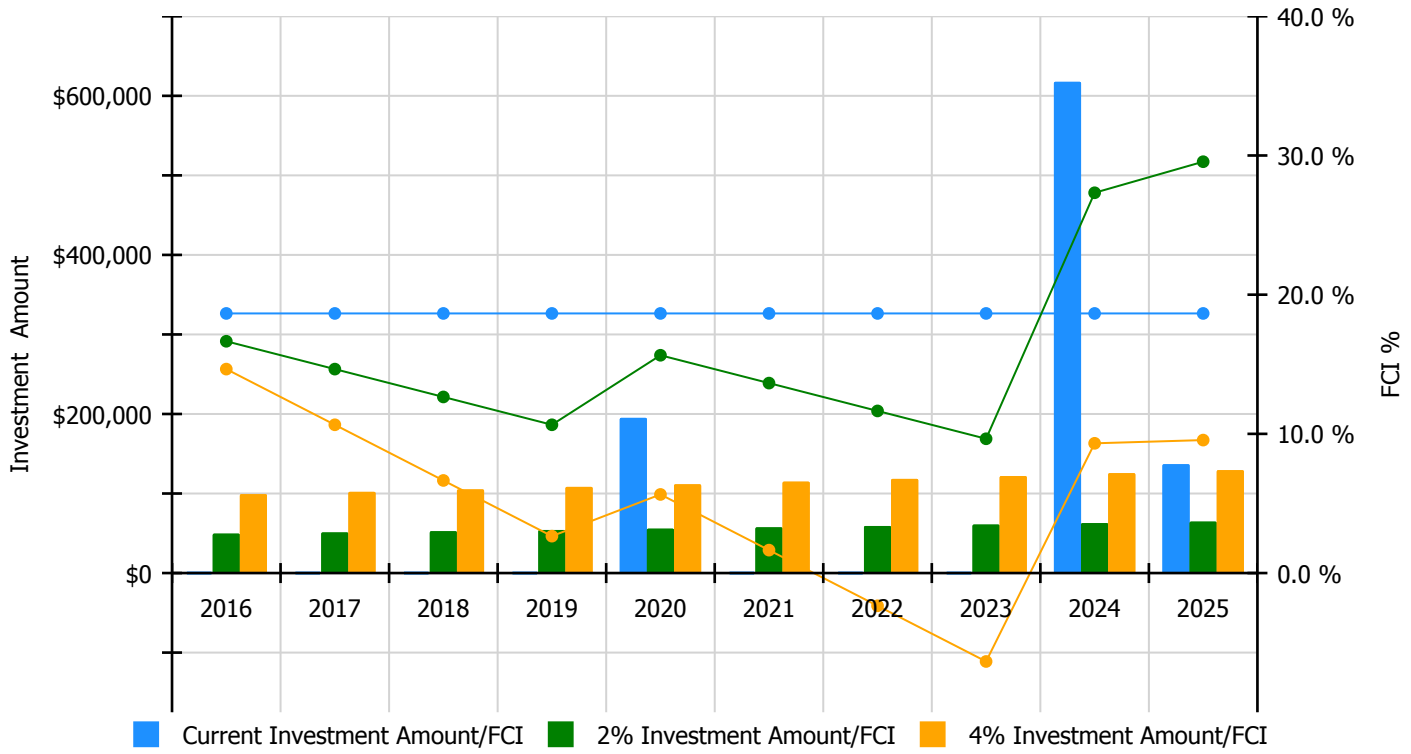


## 10 Year FCI Forecast by Investment Scenario

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

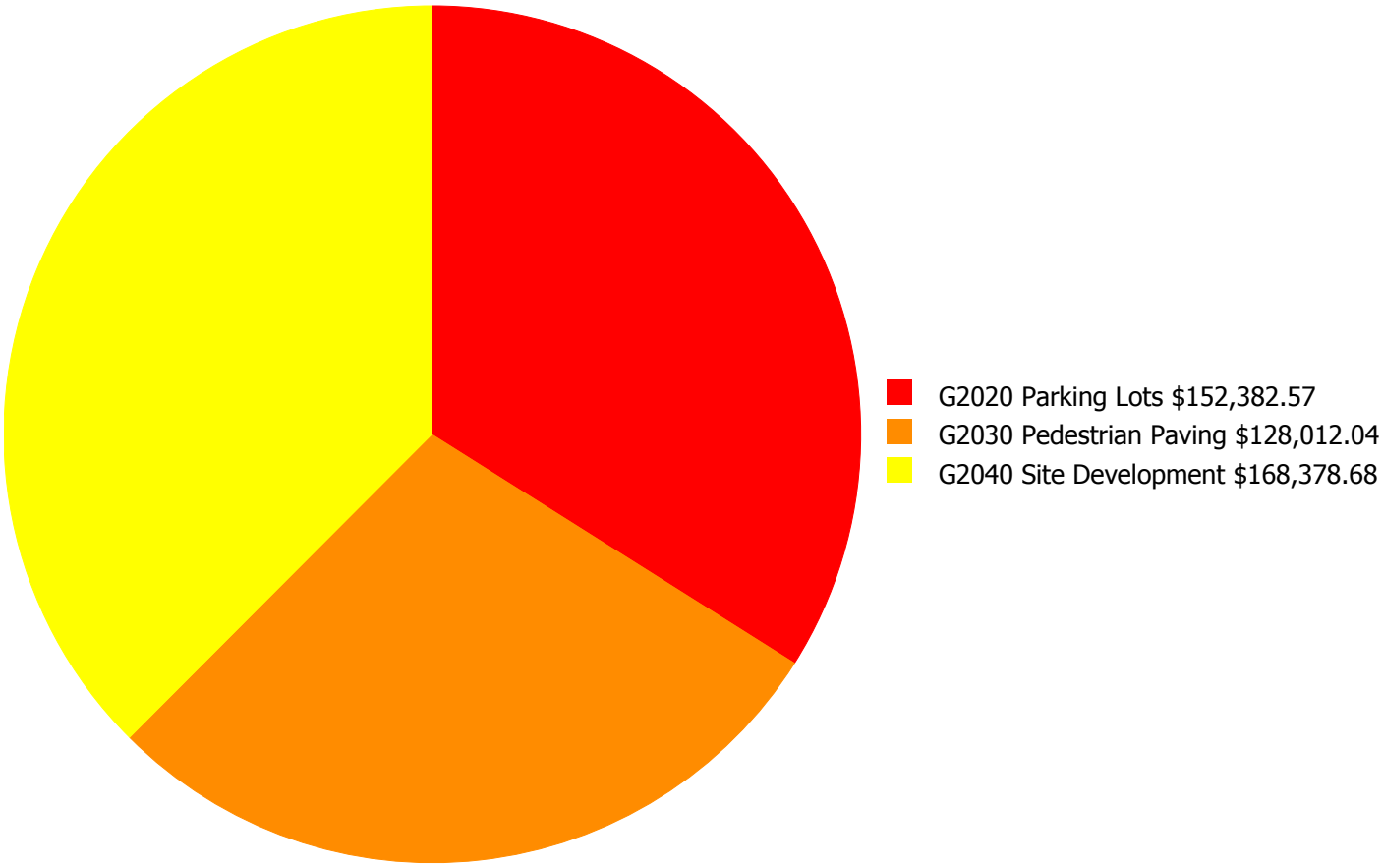
### Facility Investment vs. FCI Forecast




| Year | Investment Amount Current FCI - 18.65% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $49,563.00 | 16.65 % | $99,126.00 | 14.65 % |
| 2017 | $0 | $51,050.00 | 14.65 % | $102,100.00 | 10.65 % |
| 2018 | $0 | $52,582.00 | 12.65 % | $105,163.00 | 6.65 % |
| 2019 | $0 | $54,159.00 | 10.65 % | $108,318.00 | 2.65 % |
| 2020 | $195,106 | $55,784.00 | 15.65 % | $111,568.00 | 5.65 % |
| 2021 | $0 | $57,457.00 | 13.65 % | $114,915.00 | 1.65 % |
| 2022 | $0 | $59,181.00 | 11.65 % | $118,362.00 | -2.35 % |
| 2023 | $0 | $60,956.00 | 9.65 % | $121,913.00 | -6.35 % |
| 2024 | $617,612 | $62,785.00 | 27.32 % | $125,570.00 | 9.32 % |
| 2025 | $136,823 | $64,669.00 | 29.55 % | $129,337.00 | 9.55 % |
| **Total:** | **$949,540** | **$568,186.00** | | **$1,136,372.00** | |

## Deficiency Summary by System

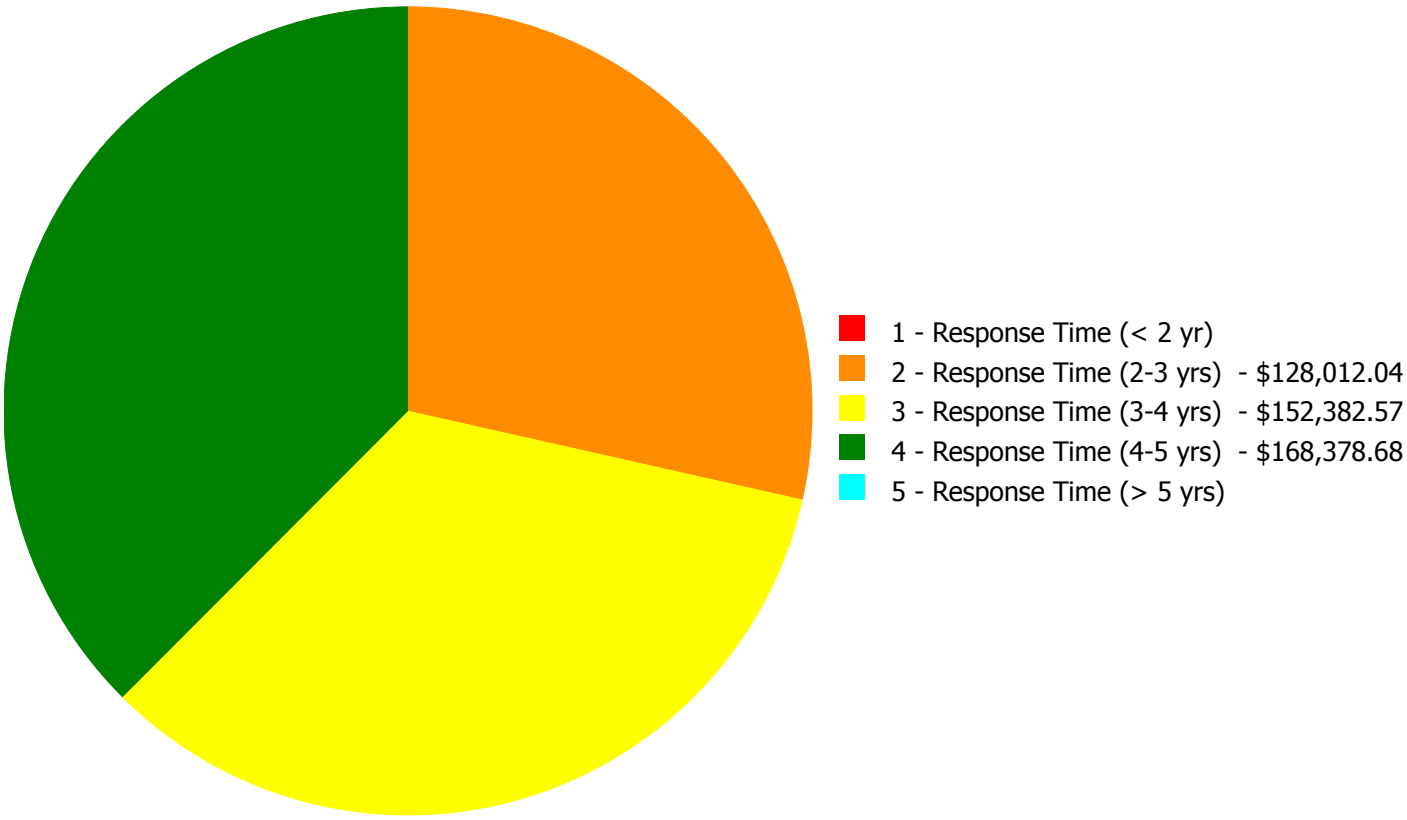
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $448,773.29**

## Deficiency Summary by Priority

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




**Budget Estimate Total: $448,773.29**

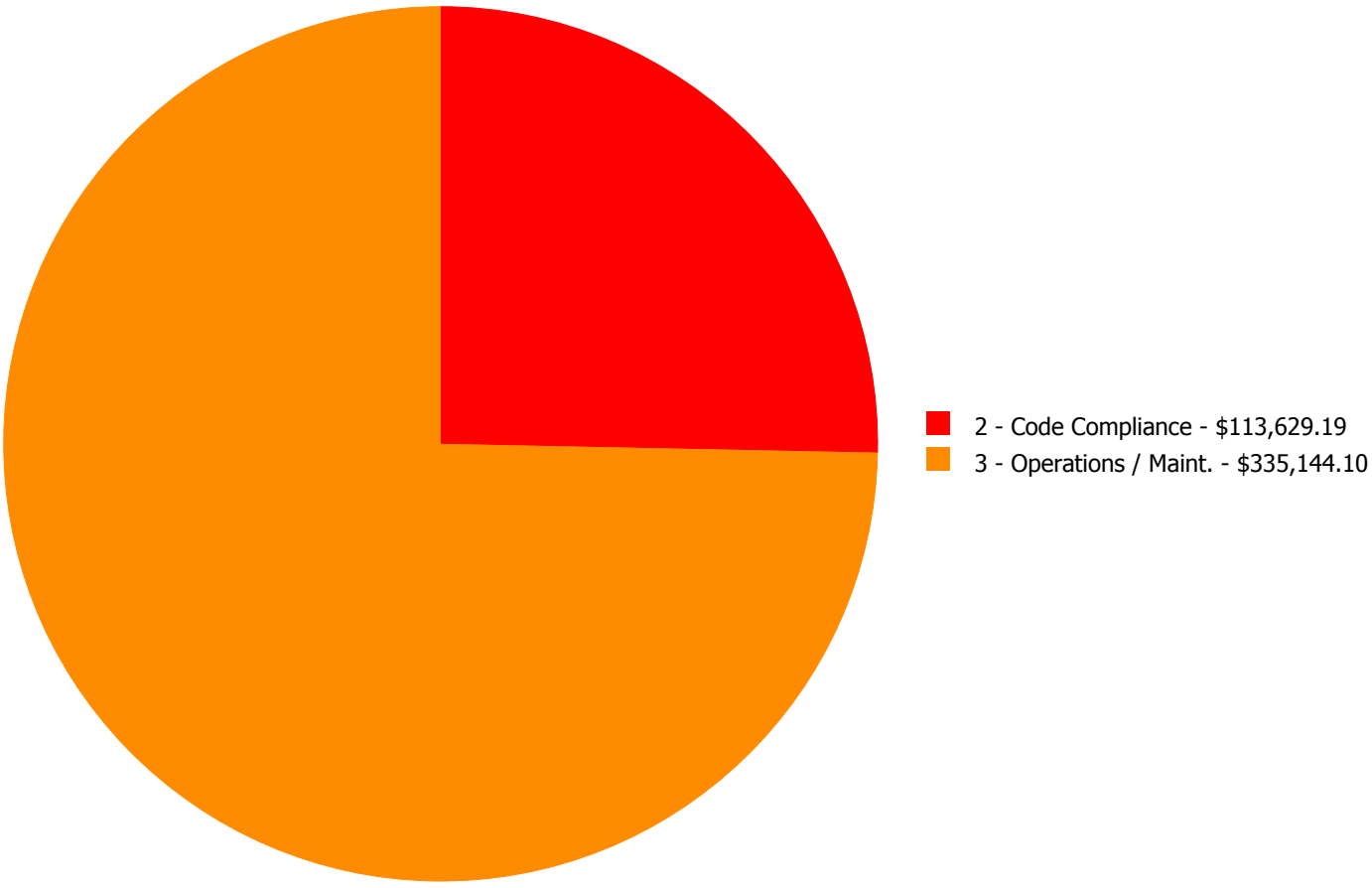
## Deficiency By Priority Investment Table

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

| System Code | System Description | 1 - Response Time (< 2 yr) | 2 - Response Time (2-3 yrs) | 3 - Response Time (3-4 yrs) | 4 - Response Time (4-5 yrs) | 5 - Response Time (> 5 yrs) | Total |
|---|---|---|---|---|---|---|---|
| G2020 | Parking Lots | $0.00 | $0.00 | $152,382.57 | $0.00 | $0.00 | $152,382.57 |
| G2030 | Pedestrian Paving | $0.00 | $128,012.04 | $0.00 | $0.00 | $0.00 | $128,012.04 |
| G2040 | Site Development | $0.00 | $0.00 | $0.00 | $168,378.68 | $0.00 | $168,378.68 |
| | **Total:** | $0.00 | $128,012.04 | $152,382.57 | $168,378.68 | $0.00 | $448,773.29 |

## Deficiency Summary by Category

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




**Budget Estimate Total: $448,773.29**

## Deficiency Details by Priority

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

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

**System: G2030 - Pedestrian Paving**

This deficiency has no image.

**Location:** exterior - location to be determined

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

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

**Correction:** Install an exterior ADA ramp - based on 5' wide by the linear foot - up to 84" rise - per LF of ramp - figure 1 LF of ramp per inch of rise

**Qty:** 48.00

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

**Estimate:** $113,629.19

**Assessor Name:** Craig Anding

**Date Created:** 08/07/2015

**Notes:** add handicap accessible ramp into building

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**System: G2030 - Pedestrian Paving**

**Location:** concrete play area

**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:** 07/30/2015

**Notes:** Repave concrete panels in playground area and entrance area

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

**System: G2020 - Parking Lots**

**Location:** parking lot

**Distress:** Beyond Service Life

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

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

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

**Qty:** 40,000.00

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

**Estimate:** $152,382.57

**Assessor Name:** Craig Anding

**Date Created:** 07/30/2015

**Notes:** Repave asphalt parking student staging/play area – only area utilized by staff

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

**System: G2040 - Site Development**

**Location:** edge of property

**Distress:** Beyond Service Life

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

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

**Correction:** Remove and replace metal picket fence - input number of gates

**Qty:** 1,000.00

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

**Estimate:** $168,378.68

**Assessor Name:** Craig Anding

**Date Created:** 07/30/2015

**Notes:** Replace damaged areas of wrought iron fencing

## 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 |