## 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.*

## Vare at Washington Elementary School

| | | | |
|---|---|---|---|
| Governance | DISTRICT | Report Type | Elementarymiddle |
| Address | 1198 S. 5Th St. | Enrollment | 366 |
| | Philadelphia, Pa 19147 | Grade Range | '00-08' |
| Phone/Fax | 215-952-8620 / 215-952-8508 | Admissions Category | Neighborhood |
| Website | Www.Philasd.Org/Schools/Avare | 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** | **35.84%** | **$12,783,619** | **$35,667,942** |
| Building | 34.92 % | $12,238,759 | $35,051,109 |
| Grounds | 88.33 % | $544,860 | $616,833 |

## Major Building Systems

| Building System | System FCI | Repair Costs | Replacement Cost |
|---|---|---|---|
| **Roof** (Shows physical condition of roof) | 00.00 % | $0 | $873,806 |
| **Exterior Walls** (Shows condition of the structural condition of the exterior facade) | 01.29 % | $32,460 | $2,509,880 |
| **Windows** (Shows functionality of exterior windows) | 88.59 % | $1,084,921 | $1,224,680 |
| **Exterior Doors** (Shows condition of exterior doors) | 129.31 % | $127,502 | $98,600 |
| **Interior Doors** (Classroom doors) | 14.92 % | $35,620 | $238,680 |
| **Interior Walls** (Paint and Finishes) | 04.05 % | $46,262 | $1,143,080 |
| **Plumbing Fixtures** | 07.00 % | $64,361 | $919,360 |
| **Boilers** | 00.00 % | $0 | $1,269,560 |
| **Chillers/Cooling Towers** | 49.20 % | $819,029 | $1,664,640 |
| **Radiators/Unit Ventilators/HVAC** | 115.10 % | $3,364,864 | $2,923,320 |
| **Heating/Cooling Controls** | 158.90 % | $1,458,745 | $918,000 |
| **Electrical Service and Distribution** | 107.63 % | $709,940 | $659,600 |
| **Lighting** | 29.70 % | $700,282 | $2,358,240 |
| **Communications and Security** (Cameras, Pa System and Fire Alarm) | 47.72 % | $421,527 | $883,320 |

*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

# S273001;Washington ES

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): | 95,500 |
| Year Built: | 1935 |
| Last Renovation: | |
| Replacement Value: | $35,667,942 |
| Repair Cost: | $12,783,618.87 |
| Total FCI: | 35.84 % |
| Total RSLI: | 62.17 % |

**Description:**

Facility Assessment
October 5th, 2015

***School District of Philadelphia***

***Washington Elementary School***

***1198 S. 5th Street***

***Philadelphia, PA 19147***

68,000 SF / 596 Students / LN 01

GENERAL

Mr. Tom Sharer, Facility Area Coordinator provided input to the Parsons Assessment team on current problems mainly in the mechanical systems Principal Zachary Duberstein provided additional information about building usage, and Mr. Malik Douglas Building Engineer accompanied us on our tour of the school and provided us with detailed information on the building systems and maintenance history.

The 4 story, 68,000 square foot building was originally constructed in 1935. The building has a one level basement.

**ARCHITECHURAL/STRUCTURAL SYSTEMS**

The building typically rests on concrete foundations and bearing walls that are not showing signs of settlement damage. The main structure consists typically of cast-in-place concrete columns, beams, and one way ribbed slab. The roof structure consists of concrete one-way slab supported by main structural frame. Roofing is built up application in fair condition with evidence of pooling in areas not sloped toward roof drains. The building envelope is masonry with face brick. Elevations are enhanced minimally with decorative concrete and stonework around entrances. In general, masonry is in fair to poor condition with multiple cracks and failing lentils around lower windows. The windows were replaced in early 1990s with extruded aluminum, double hung windows, Lexan Plexiglas with insect/security screens. All windows are generally in poor condition with heavy hazing and are not energy efficient. Exterior doors are typically hollow metal in poor condition and beyond service life. The building is not accessible per ADA requirements due to first floor- grade separation with no ramps or lifts.

Partition walls are plastered ceramic hollow blocks. Interior doors are generally rail and stile wood doors and frames with transoms in good condition. Doors leading to exit stairways are hollow metal frames with metal rail and stile doors with wire mesh glazing in fair condition. Interior doors do not have lever type handles. Fittings include: toilet accessories in fair condition; composite plastic and hollow metal toilet partitions, generally in fair to poor condition with some beyond service life; handrails and ornamental metals, generally in fair condition; and fixed metal wall lockers in fair condition. Toilet partitions and accessories are not ADA accessible. Interior identifying signage is typically directly painted on wall or door surfaces generally in good condition. Stair construction is generally concrete with terrazzo treads, risers, and nosing in good condition. Stair railings are cast iron balusters with wood handrail in fair condition.

The interior wall finishes are painted plaster or brick throughout with glazed brick wainscot in stairways, corridors, cafeteria, gym, and toilets in good condition and wood panel wainscot in auditorium in good condition. Main grand entrance has decorative marble and granite in good condition. Generally, paint is in good condition with a few small damages in various areas. Flooring types include hardwood in most classrooms, stage and auditorium in good condition; terrazzo tile in corridors, toilets, and stairways in good condition; vinyl tile in some classrooms, cafeteria, office areas, lounges, and gym in fair to poor condition with some new and some failing and beyond service life; carpet in portions of kindergarten rooms beyond service life; and concrete in basement service areas. Ceiling finishes include: suspended acoustic tile system in some classrooms, cafeteria, and offices in fair to poor condition with some beyond service life; painted plaster or structural concrete in toilets, auditorium, corridors, and gym in fair condition with damaged areas throughout. Multiple utility lines can be seen running through corridors and would benefit from an installed suspended acoustic tile ceiling system.

The building has no elevators.

Institutional and Commercial equipment includes: stage equipment and gym equipment in fair condition. Other equipment includes kitchen equipment (heat and serve only), generally in good condition.

Fixed furnishings include: fixed casework in classrooms, corridors and library, generally in fair to good condition; window shades/blinds in fair condition; and fixed auditorium seating in fair condition.

**MECHANICAL SYSTEMS**

Toilet room plumbing consists of wall hung porcelain lavatories, water closets, and urinals. The majority of fixtures are replacements installed over the life of the building. Flush valves are installed in pipe chases. Lavatories have separate hot and cold faucets with momentary action valves. Head Start children do not have the manual dexterity or physical strength to operate the faucets. The school cafeteria kitchen has a single basin, enamel on cast iron, floor standing, residential kitchen sink with integral drain board, ca. 1950 vintage. The sink is in good condition and sufficient for elementary school service, but the faucet leaks and should be replaced. There is a similar sink in the 3rd floor faculty lounge which apparently has drainage problems. Science room lab sinks have been renovated including acid resistant drains with neutralizers. There is 1 teacher sink and 2 wall sinks. There is no flow from the hot water valves, likely shut off due to leaks. Lab sink faucets should be repaired or replaced. Service sinks are enameled cast iron located in cleaning closets on each floor. Sinks are in fair condition, but their drain traps are too small and cause slow drainage. The traps should be replaced when the sanitary drain pipe in the building is repaired. The building originally had boys and girls shower rooms in the basement, but the plumbing has been partially demolished and the areas are now used for storage. The remaining plumbing should be removed when convenient. Drinking fountains in the hallways are porcelain, no accessible, and originally had 2 spouts. The third floor hallway is missing one fountain. The faculty lounge on the third floor has a floor standing sheet metal refrigerated fountain, but chiller does not work. Generally, all the fountains in the school should be replaced with accessible units with integral chillers.

Municipal water service enters the building from South 5th St. in a basement mechanical room via a 3 inch line with 3 inch water meter and bypass, then parallel 3 inch and 2 inch Y-strainers and reduced pressure backflow preventers, and finally a duplex pump pressure booster system without pressurized storage tank. The water service entry pipe and fittings is in fair condition with no cause for immediate concern. It should last 5 – 10 years more. A hydro-pneumatic storage tank should be installed for the booster system. Domestic water distribution pipe is mostly soldered copper, but some areas of threaded steel and copper pipe remain. Visible areas of pipe are corroded. The entire building should have domestic water distribution pipes replaced due to age. Hot water is provided by a Bradford White, 50 gallon, natural gas burning, water heater installed in 2013. It should provide reliable performance for 10 more years. There is a steam to water tube-and-shell heat exchanger that is used as a hot water storage tank now. The adjacent coal fired steam boiler has been abandoned in place. A circulation pump keeps the tank hot. Hot water was available at a third floor lavatory in less than 10 seconds. The storage tank is uninsulated and should have new insulation installed to conserve energy.

Sanitary drain piping is both hub and spigot cast iron and threaded galvanized steel. Several sink drains were observed to flow poorly. Some areas of cast iron pipe are very rusty. There were no visible recent repairs. The sanitary drain pipes should be inspected in greater detail and repaired or replaced as needed. There is a sewage ejector in a sump in the basement boiler room. It has 2 collection tanks and one tank is missing the level sensor. The sewage ejector system should be replaced during the drain pipe repairs. Sanitary drainage exits the building in the south side mechanical room in a 6 inch line next to the original air handler.

Rain water drain pipes are threaded galvanized steel and run inside the building. Rooftop drains are cast iron without overflows. Drain pipes are past their service life but there were no complains or visible areas of concern, so they should last 5 – 10 more years. There is standing water on the flood of the basement in the south west corner and water infiltration in the gym from under the outside stairs at the north end of the building.

The building has hydronic heating serving unit vents and convectors with one air handler for the auditorium.

Two Weil-McLain, cast iron sectional, model H-1288 W5, 2329 MBH (70 HP) net capacity, boilers provide steam for heating the building. They are equipped with Power Flame oil and natural gas burners manufactured in 1989. Gas service enters the building from S. 5th St. (in the same room as the water service) through a 4 inch line with gas meter

and booster. There are two fuel oil pumps in the coal room behind the boiler room and an 8,000 gallon tank buried in the yard north of the building. Feedwater comes from duplex pump tank with separate feed lines. There is a vacuum condensate system on top of the feedwater tank, and a chemical injection system is next to it. The boilers have 9 years expected service life remaining and the associated equipment should remain serviceable for that period as well.

The building has no central cooling generating equipment. There are 19 window unit air conditioners and 1 mini split system which provide about 40 tons of cooling capacity to offices, etc. A chiller system with 170 ton capacity should be installed to provide cooling to the entire building.

The original air handler for the auditorium is still installed in a basement mechanical room under the stage. It has two steam heating sections with cast iron coils, air washer, and 3 HP fan. Estimated capacity was 15,000 cfm. It is completely obsolete, and should be replaced with a modern unit including a cooling section. Classrooms and gyms still have the original unit ventilators which have greatly exceeded their lifespan, so they should be replaced also. Classrooms air exhausted through vents in the coat closets up to the attic plenum and then out through gravity vents on the roof. The kitchen has no exhaust, (not even windows which have been bricked over,) but it has no fuel burning appliances, only an electric convection oven. Steam distribution pipe is threaded steel. There were no complaints about pipe leaks or steam trap failures. However, give the unknown age of the steam and condensate pipes, they should be inspected and repaired as needed.

Finned tube convection units with sheet metal cabinets supplement unit vents in classrooms and are the only heat for other areas like hallways, toilet rooms, and offices. They are likely the original equipment and have exceeded their expected service life. Some convectors are damaged and corroded. They should all be replaced with new equipment.

Building HVAC controls were pneumatic, but became inoperable year ago. Classrooms and gyms have wall mounted thermostats to control unit vents. The controls are obsolete and should be replaced with a DDC to control new HVAC equipment. There are two air compressors in the building. A single pump with tank and cooler is installed and operational in the boiler room. There is also a duplex pump with tank stored in the coal room not installed.

The building has dry stand pipes: threaded galvanized steel. There are no sprinklers. A fire sprinkler system should be installed to increase occupant safety, including a fire pump if needed.

**ELECTRICAL SYSTEMS**

A pole mounted transformer on Federal Street and an underground secondary conductors serve this building. The electrical service entrance is located in the basement which houses the utility main disconnect switch and utility metering PECO 221MU 53509. Many other electrical distribution equipment are also housed in the basement, including the Fire Alarm Panel, phase convertor transformers, building main power distribution panelboard, and several safety switches. The rating of the existing electrical service is 120/240V, 400A (estimated) and is original installation and has exceeded its 30 year useful life. It has no extra capacity for expansion or new Heating, Ventilation, Air Conditioning (HVAC) system. The electrical service entrance should be upgraded, using the present utility pole, and adding a pad mounted transformer on Federal Street. The new service will be 480V/277V, 3 phase power, approximate 1000 Amperes and will be located in the vicinity of the existing electrical service. The electrical service will feed a 480V Motor Control Center (MCC) and HVAC equipment and a 480V 3 phase to 120V/208V 3 phase 300 KVA step-down transformer to feed receptacles, lighting and other smaller loads.

There are 120/240V panel-boards in each floor for lighting and receptacles. These panelboards and associated wiring have exceeded the end of their useful life and are undersized to absorb new loads. The entire distribution system needs to be replaced with new 208/120 volt, 3 phase panelboards and new wiring. The raceway is mainly conduits run above the ceiling.

There number of receptacles in 80% of the classrooms are inadequate. Teachers use extension cords. The teacher's whiteboard wall and the opposite of it need to be provided with double compartment surface raceways, the other two walls with minimum two duplex outlets each, when feasible.

Classrooms, corridors and cafeteria/gymnasium are illuminated with surface mounted fluorescent fixtures. The auditorium is illuminated with recessed, perimeter mounted fluorescent fixtures. Fluorescent fixtures in classrooms are provided with T12 lamps, in corridors and stairways with T-8 lamps. T-12 fluorescent lamps are becoming more expensive, consume more energy and are difficult to find therefore replace 70% of the fluorescent fixtures with T-12 lamps with pendant mounted up/down fixture with T-8 lamps

A tap ahead of the main disconnect switch serves the fire alarm control panel (FACP).The Fire Alarm system is manufactured by S.H. COUCH INC The system is approximately 30 years old. The present Fire Alarm system does not meet current code. Fire alarm system is tested every day in the morning. Provide a new addressable fire alarm system.

The present telephone system is adequate. During the assessment, randomly, we verified that each wall mounted handset is provided with dial tone.

An independent and separate PA system does not exist. School uses the telephone systems for public announcement. This system is working adequately for most part.

The clock system is composed of an old master control panel at the main office and inoperative clocks at the classrooms. Most of the clocks in the classrooms are battery operated stand-alone. Provide a synchronized clock system, wireless, battery operated.

There is not television system.

The security system consists of surveillance CCTV cameras. The third floor and the basement are provided with four surveillance CCTV cameras, each level has two cameras. The first floor and the auditorium are provided with a total of four surveillance CCTV cameras. The surveillance monitor is located in the Main office. Add CCTV cameras for a complete coverage of the school building interior

The emergency power system consists of a gas powered generator, manufactured by Onan, 15KW 120/240V. The present emergency power system serves the corridor lights, exit signs, boiler room, gymnasium/cafeteria and stairways. The gas powered generator, already exceeds its useful service life and should be replaced with 70KW outdoor diesel powered generator.

There is adequate UPS in the IT room.

The emergency lighting is obtained via selected lighting fixtures in corridors and stairs. Exit signs are located at each exit door and corridors and are connected to the school emergency system.

The school lightning protection system is accomplished with air terminals mounted on the chimney. A study needs to be conducted to verify if the air terminals provide the proper coverage.

The auditorium is provided with one row of pendant mounted theatrical lighting which are controlled from local panelboard. Modern school auditorium requires front, upstage, high side, back, theatrical lighting and to create different scenes theatrical lighting fixtures are controlled by a dimming system. Provide stage theatrical lighting and dimming control system.

The auditorium sound system is manufactured by AVT. System is approximately 10 years old and looks inoperative.

Provide the auditorium with new sound system.

**GROUNDS SYSTEMS**

The site surrounds the building on all four sides which is set back from the street. Play yard area on north and west sides are concrete paving in fair to poor condition with multiple cracks and areas of spalling. Grade level concrete at north entrance stoop has large crack allowing water intrusion into gymnasium office and basement ash room. No parking for staff vehicles on site. Chain link fence surrounding yard is in good condition. Metal fence surrounding site on south and east sides is rusted and failing. Landscaping is grass and medium trees along south and east sides in good condition.

Accessibility: the building does not have an accessible entrance, and accessible routes. None of the toilets are equipped with accessible fixtures, partitions and accessories, such as grab bars and accessible partitions. None of the doors in the building have ADA required door handles.

The school perimeter is poorly illuminated with wall mounted HID fixtures. Add outdoor wall mounted lighting fixtures to provide a safer and better illumination.

The outdoor security system is accomplished with five surveillance CCTV cameras around the building perimeter. Add surveillance CCTV cameras to provide a complete coverage of the building perimeter.

Outdoor loud speaker is not provided in front of the playground area. Provide an outdoor loud speaker facing the playground area

**RECOMMENDATIONS**

- Replace Plexiglas windows – hazed
- Replace exterior doors – rusted & failing
- Provide ADA lever handle lock/latchsets on interior doors
- Provide new toilet partitions and toilet accessories including grab bars for accessibility
- Replace VCT flooring – damaged & failing (30% of vinyl floor area)
- Replace carpet – beyond service life
- Repair and repaint interior ceiling (10% of painted ceiling surface)
- Install suspended acoustic tile ceiling system in corridors for appearance
- Install elevator for accessibility (location TBD)
- Provide ADA compliant ramp for at least one entrance (location TBD)
- Replace metal fence and gates – rusted and hazard to safety
- Replace head start, kitchen, and science room faucets due to leaks and other operational failures, 6 faucets
- Replace drinking fountains with accessible ones with chillers
- Install hydro-pneumatic storage tank for domestic water booster system
- Replace domestic water distribution pipe due to age
- Insulate domestic hot water storage tank to conserve energy
- Inspect and repair or replace sanitary drain pipe as needed due to age, operation, and appearance including sewage ejector replacement
- Install 170 ton chiller system to provide cooling for entire building
- Replace obsolete AHU serving auditorium
- Replace aged unit ventilators and convectors
- Inspect and repair steam and condensate pipes due to age
- Install DDC to replace obsolete pneumatic controls
- Install fire protection sprinkler system with fire pump if needed

- Provide new service 480V/277V, 3 phase power, approximate 1000 Amperes.
- Replace the entire distribution system with new panels and new wiring/conduits. Approximate (15) 208/120V.
- The teacher's whiteboard wall and the opposite of it need to be provided with double compartment surface raceways, the other two walls with minimum two duplex outlets each. Approximate 390 receptacles.
- Replace 70% of the fluorescent fixtures with pendant mounted up/down fixture with T-8 lamps. Approximate 629 fixtures.
- Provide a new addressable fire alarm system. Approximate 90 devices.
- Provide a clock system with wireless, battery operated clocks. Approximate 50 clocks.
- Add surveillance CCTV cameras for a complete coverage of the school building interior. Approximate 30
- Provide an outdoor diesel powered generator. Approximate 70KW
- Prepare a study to determine if the air terminals installed in the chimney provide the proper coverage to the school.
- Provide the auditorium with dimming and theatrical lighting.
- Provide the auditorium with a sound system.
- Add outdoor wall mounted lighting fixtures to provide a safer and better illumination. Approximate 16 HID fixtures
- Add surveillance CCTV cameras to provide a complete coverage of the building perimeter. Approximate 10
- Provide an outdoor loud speaker facing the playground area

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg Lot Tm: | Lot 3 / Tm 3 |
| Status: | Accepted by SDP | Team: | Tm 3 |
| Site ID: | S273001 | | |

## 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 | 20.00 % | 0.00 % | $0.00 |
| A20 - Basement Construction | 20.00 % | 0.00 % | $0.00 |
| B10 - Superstructure | 20.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 49.42 % | 32.48 % | $1,244,883.87 |
| B30 - Roofing | 30.00 % | 0.00 % | $0.00 |
| C10 - Interior Construction | 28.38 % | 3.13 % | $52,243.99 |
| C20 - Stairs | 20.00 % | 0.00 % | $0.00 |
| C30 - Interior Finishes | 76.48 % | 6.04 % | $262,122.03 |
| D10 - Conveying | 105.71 % | 265.91 % | $1,012,601.25 |
| D20 - Plumbing | 46.81 % | 55.08 % | $764,842.73 |
| D30 - HVAC | 94.35 % | 74.60 % | $5,642,637.35 |
| D40 - Fire Protection | 100.34 % | 177.49 % | $972,768.92 |
| D50 - Electrical | 110.11 % | 49.86 % | $1,993,063.70 |
| E10 - Equipment | 49.62 % | 27.12 % | $293,594.70 |
| E20 - Furnishings | 35.00 % | 0.00 % | $0.00 |
| G20 - Site Improvements | 105.49 % | 61.74 % | $274,021.84 |
| G40 - Site Electrical Utilities | 106.67 % | 156.58 % | $270,838.49 |
| **Totals:** | **62.17 %** | **35.84 %** | **$12,783,618.87** |

### 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) |
|---|---|---|---|---|---|---|---|
| B273001;Washington ES | 68,000 | 34.92 | $10,167.21 | $3,796,437.82 | $2,640,667.15 | $2,196,362.86 | $3,595,123.50 |
| G273001;Grounds | 27,500 | 88.33 | $25,981.81 | $56,243.11 | $376,174.38 | $86,461.03 | $0.00 |
| **Total:** | | **35.84** | **$36,149.02** | **$3,852,680.93** | **$3,016,841.53** | **$2,282,823.89** | **$3,595,123.50** |

### Deficiencies By Priority

- 1 - Response Time (< 2 yr) - $36,149.02
- 2 - Response Time (2-3 yrs) - $3,852,680.93
- 3 - Response Time (3-4 yrs) - $3,016,841.53
- 4 - Response Time (4-5 yrs) - $2,282,823.89
- 5 - Response Time (> 5 yrs) - $3,595,123.50

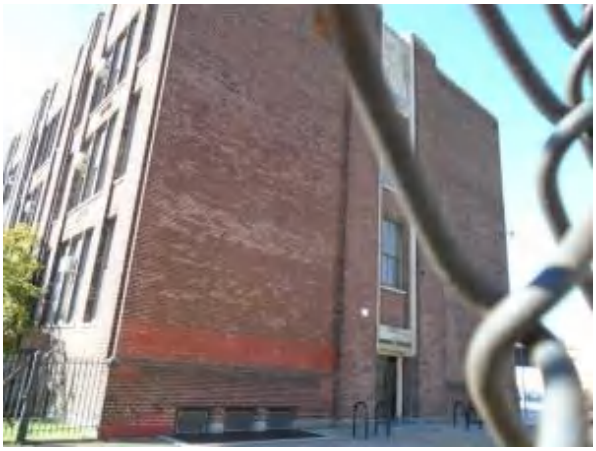
**Budget Estimate Total: $12,783,618.87**

## 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): | 68,000 |
| Year Built: | 1935 |
| Last Renovation: | |
| Replacement Value: | $35,051,109 |
| Repair Cost: | $12,238,758.54 |
| Total FCI: | 34.92 % |
| Total RSLI: | 61.40 % |



**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg ID: | B273001 |
| Sewage Ejector: | Yes | Status: | Accepted by SDP |
| Site ID: | S273001 | | |

## 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 | 20.00 % | 0.00 % | $0.00 |
| A20 - Basement Construction | 20.00 % | 0.00 % | $0.00 |
| B10 - Superstructure | 20.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 49.42 % | 32.48 % | $1,244,883.87 |
| B30 - Roofing | 30.00 % | 0.00 % | $0.00 |
| C10 - Interior Construction | 28.38 % | 3.13 % | $52,243.99 |
| C20 - Stairs | 20.00 % | 0.00 % | $0.00 |
| C30 - Interior Finishes | 76.48 % | 6.04 % | $262,122.03 |
| D10 - Conveying | 105.71 % | 265.91 % | $1,012,601.25 |
| D20 - Plumbing | 46.81 % | 55.08 % | $764,842.73 |
| D30 - HVAC | 94.35 % | 74.60 % | $5,642,637.35 |
| D40 - Fire Protection | 100.34 % | 177.49 % | $972,768.92 |
| D50 - Electrical | 110.11 % | 49.86 % | $1,993,063.70 |
| E10 - Equipment | 49.62 % | 27.12 % | $293,594.70 |
| E20 - Furnishings | 35.00 % | 0.00 % | $0.00 |
| **Totals:** | **61.40 %** | **34.92 %** | **$12,238,758.54** |

## 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. | 68,000 | 100 | 1935 | 2035 | | 20.00 % | 0.00 % | 20 | | | $1,251,200 |
| A1030 | Slab on Grade | $7.73 | S.F. | 68,000 | 100 | 1935 | 2035 | | 20.00 % | 0.00 % | 20 | | | $525,640 |
| A2010 | Basement Excavation | $6.55 | S.F. | 68,000 | 100 | 1935 | 2035 | | 20.00 % | 0.00 % | 20 | | | $445,400 |
| A2020 | Basement Walls | $12.70 | S.F. | 68,000 | 100 | 1935 | 2035 | | 20.00 % | 0.00 % | 20 | | | $863,600 |
| B1010 | Floor Construction | $75.10 | S.F. | 68,000 | 100 | 1935 | 2035 | | 20.00 % | 0.00 % | 20 | | | $5,106,800 |
| B1020 | Roof Construction | $13.88 | S.F. | 68,000 | 100 | 1935 | 2035 | | 20.00 % | 0.00 % | 20 | | | $943,840 |
| B2010 | Exterior Walls | $36.91 | S.F. | 68,000 | 100 | 1935 | 2035 | | 20.00 % | 1.29 % | 20 | | $32,460.39 | $2,509,880 |
| B2020 | Exterior Windows | $18.01 | S.F. | 68,000 | 40 | 1989 | 2029 | 2057 | 105.00 % | 88.59 % | 42 | | $1,084,920.99 | $1,224,680 |
| B2030 | Exterior Doors | $1.45 | S.F. | 68,000 | 25 | 1989 | 2014 | 2042 | 108.00 % | 129.31 % | 27 | | $127,502.49 | $98,600 |
| B3010105 | Built-Up | $37.76 | S.F. | 23,033 | 20 | 2001 | 2021 | | 30.00 % | 0.00 % | 6 | | | $869,726 |
| B3010120 | Single Ply Membrane | $38.73 | S.F. | | 20 | | | | 0.00 % | 0.00 % | | | | $0 |
| B3010130 | Preformed Metal Roofing | $54.22 | S.F. | | 30 | | | | 0.00 % | 0.00 % | | | | $0 |
| B3010140 | Shingle & Tile | $38.73 | S.F. | | 25 | | | | 0.00 % | 0.00 % | | | | $0 |
| B3020 | Roof Openings | $0.06 | S.F. | 68,000 | 20 | 2001 | 2021 | | 30.00 % | 0.00 % | 6 | | | $4,080 |
| C1010 | Partitions | $17.91 | S.F. | 68,000 | 100 | 1935 | 2035 | | 20.00 % | 0.00 % | 20 | | | $1,217,880 |
| C1020 | Interior Doors | $3.51 | S.F. | 68,000 | 40 | 1986 | 2026 | | 27.50 % | 14.92 % | 11 | | $35,620.45 | $238,680 |
| C1030 | Fittings | $3.12 | S.F. | 68,000 | 40 | 1986 | 2026 | 2046 | 77.50 % | 7.84 % | 31 | | $16,623.54 | $212,160 |
| C2010 | Stair Construction | $1.41 | S.F. | 68,000 | 100 | 1935 | 2035 | | 20.00 % | 0.00 % | 20 | | | $95,880 |

# Site Assessment Report - B273001;Washington ES

| System Code | System Description | Unit Price $ | UoM | Qty | Life | Year Installed | Calc Next Renewal Year | Next Renewal Year | RSLI% | FCI% | RSL | eCR | Deficiency $ | Replacement Value $ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C3010230 | Paint & Covering | $13.44 | S.F. | 68,000 | 10 | 2013 | 2023 | | 80.00 % | 5.06 % | 8 | | $46,262.21 | $913,920 |
| C3010231 | Vinyl Wall Covering | $0.00 | S.F. | 68,000 | 15 | | | | 0.00 % | 0.00 % | | | | $0 |
| C3010232 | Wall Tile | $3.37 | S.F. | 68,000 | 30 | 1986 | 2016 | 2036 | 70.00 % | 0.00 % | 21 | | | $229,160 |
| C3020411 | Carpet | $7.30 | S.F. | 1,360 | 10 | 2001 | 2011 | 2027 | 120.00 % | 153.30 % | 12 | | $15,219.44 | $9,928 |
| C3020412 | Terrazzo & Tile | $75.52 | S.F. | 10,200 | 50 | 1937 | 1987 | 2037 | 44.00 % | 0.00 % | 22 | | | $770,304 |
| C3020413 | Vinyl Flooring | $9.68 | S.F. | 15,640 | 20 | 1986 | 2006 | 2037 | 110.00 % | 37.31 % | 22 | | $56,482.40 | $151,395 |
| C3020414 | Wood Flooring | $22.27 | S.F. | 37,400 | 25 | 2001 | 2026 | | 44.00 % | 0.00 % | 11 | | | $832,898 |
| C3020415 | Concrete Floor Finishes | $0.97 | S.F. | 3,400 | 50 | 1986 | 2036 | | 42.00 % | 0.00 % | 21 | | | $3,298 |
| C3030 | Ceiling Finishes | $20.97 | S.F. | 68,000 | 25 | 1986 | 2011 | 2042 | 108.00 % | 10.11 % | 27 | | $144,157.98 | $1,425,960 |
| D1010 | Elevators and Lifts | $5.60 | S.F. | 68,000 | 35 | | | 2052 | 105.71 % | 265.91 % | 37 | | $1,012,601.25 | $380,800 |
| D2010 | Plumbing Fixtures | $13.52 | S.F. | 68,000 | 35 | 1950 | 1985 | 2030 | 42.86 % | 7.00 % | 15 | | $64,361.07 | $919,360 |
| D2020 | Domestic Water Distribution | $1.68 | S.F. | 68,000 | 25 | 1937 | 1962 | 2025 | 40.00 % | 310.85 % | 10 | | $355,111.98 | $114,240 |
| D2030 | Sanitary Waste | $2.90 | S.F. | 68,000 | 25 | 1937 | 1962 | 2035 | 80.00 % | 175.14 % | 20 | | $345,369.68 | $197,200 |
| D2040 | Rain Water Drainage | $2.32 | S.F. | 68,000 | 30 | 1937 | 1967 | 2025 | 33.33 % | 0.00 % | 10 | | | $157,760 |
| D3020 | Heat Generating Systems | $18.67 | S.F. | 68,000 | 35 | 1989 | 2024 | | 25.71 % | 0.00 % | 9 | | | $1,269,560 |
| D3030 | Cooling Generating Systems | $24.48 | S.F. | 68,000 | 30 | | | 2047 | 106.67 % | 49.20 % | 32 | | $819,029.04 | $1,664,640 |
| D3040 | Distribution Systems | $42.99 | S.F. | 68,000 | 25 | 1937 | 1962 | 2042 | 108.00 % | 115.10 % | 27 | | $3,364,863.56 | $2,923,320 |
| D3050 | Terminal & Package Units | $11.60 | S.F. | 68,000 | 20 | 1937 | 1957 | 2037 | 110.00 % | 0.00 % | 22 | | | $788,800 |
| D3060 | Controls & Instrumentation | $13.50 | S.F. | 68,000 | 20 | 1937 | 1957 | 2037 | 110.00 % | 158.90 % | 22 | | $1,458,744.75 | $918,000 |
| D4010 | Sprinklers | $7.05 | S.F. | 68,000 | 35 | | | 2052 | 105.71 % | 202.91 % | 37 | | $972,768.92 | $479,400 |
| D4020 | Standpipes | $1.01 | S.F. | 68,000 | 35 | 1937 | 1972 | 2037 | 62.86 % | 0.00 % | 22 | | | $68,680 |
| D5010 | Electrical Service/Distribution | $9.70 | S.F. | 68,000 | 30 | 1937 | 1967 | 2047 | 106.67 % | 107.63 % | 32 | | $709,940.38 | $659,600 |
| D5020 | Lighting and Branch Wiring | $34.68 | S.F. | 68,000 | 20 | 1937 | 1957 | 2037 | 110.00 % | 29.70 % | 22 | | $700,282.33 | $2,358,240 |
| D5030 | Communications and Security | $12.99 | S.F. | 68,000 | 15 | 1937 | 1952 | 2032 | 113.33 % | 47.72 % | 17 | | $421,526.78 | $883,320 |
| D5090 | Other Electrical Systems | $1.41 | S.F. | 68,000 | 30 | 1937 | 1967 | 2047 | 106.67 % | 168.25 % | 32 | | $161,314.21 | $95,880 |
| E1020 | Institutional Equipment | $4.82 | S.F. | 68,000 | 35 | 1989 | 2024 | | 25.71 % | 89.58 % | 9 | | $293,594.70 | $327,760 |
| E1090 | Other Equipment | $11.10 | S.F. | 68,000 | 35 | 2001 | 2036 | | 60.00 % | 0.00 % | 21 | | | $754,800 |
| E2010 | Fixed Furnishings | $2.13 | S.F. | 68,000 | 40 | 1989 | 2029 | | 35.00 % | 0.00 % | 14 | | | $144,840 |
| | | | | | | | | **Total** | **61.40 %** | **34.92 %** | | | **$12,238,758.54** | **$35,051,109** |

## System Notes

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

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

**Note:** 80% - Paint & Covering
20% - Wall Tile (glazed brick)

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

**Note:** 2% - Carpet
15% - Terrazzo & Tile (terrazzo)
23% - Vinyl Flooring
55% - Wood Flooring
5% - Concrete Floor Finishes

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

**Note:** (10 75KVA and (1) 45KVA phase converters 240V-120/208V

## 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:** | **$12,238,759** | **$0** | **$0** | **$0** | **$0** | **$0** | **$1,147,708** | **$0** | **$1,273,499** | **$2,292,554** | **$402,100** | **$17,354,619** |
| *** 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** | $32,460 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$32,460** |
| **B2020 - Exterior Windows** | $1,084,921 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,084,921** |
| **B2030 - Exterior Doors** | $127,502 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$127,502** |
| **B30 - Roofing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010 - Roof Coverings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010105 - Built-Up** | $0 | $0 | $0 | $0 | $0 | $0 | $1,142,349 | $0 | $0 | $0 | $0 | **$1,142,349** |
| **B3010120 - Single Ply Membrane** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010130 - Preformed Metal Roofing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010140 - Shingle & Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3020 - Roof Openings** | $0 | $0 | $0 | $0 | $0 | $0 | $5,359 | $0 | $0 | $0 | $0 | **$5,359** |
| **C - Interiors** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C10 - Interior Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C1010 - Partitions** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

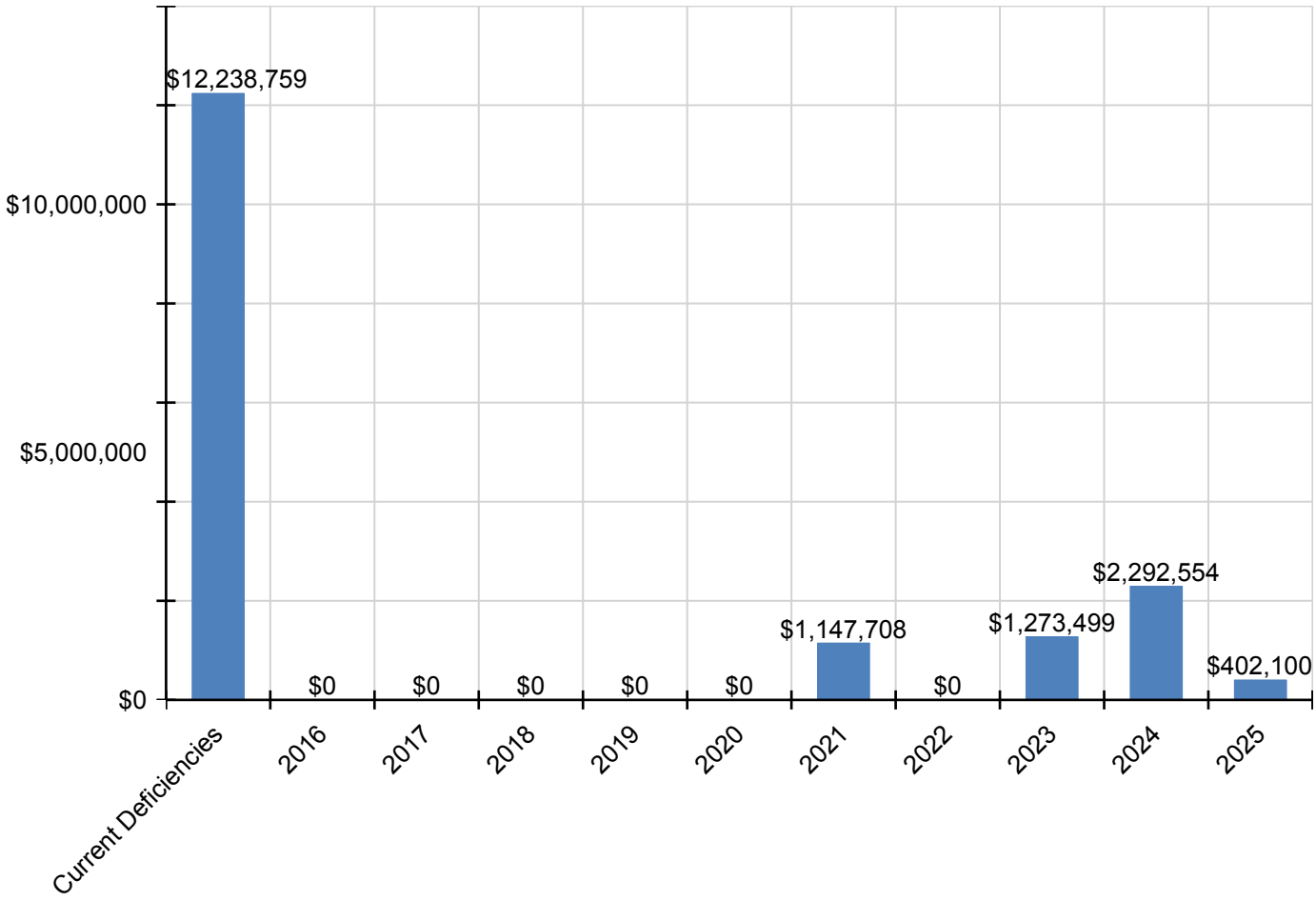
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **C1020 - Interior Doors** | $35,620 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$35,620** |
| **C1030 - Fittings** | $16,624 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$16,624** |
| **C20 - Stairs** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C2010 - Stair Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C30 - Interior Finishes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3010 - Wall Finishes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3010230 - Paint & Covering** | $46,262 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,273,499 | $0 | $0 | **$1,319,761** |
| **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** | $15,219 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$15,219** |
| **C3020412 - Terrazzo & Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020413 - Vinyl Flooring** | $56,482 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$56,482** |
| **C3020414 - Wood Flooring** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020415 - Concrete Floor Finishes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3030 - Ceiling Finishes** | $144,158 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$144,158** |
| **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** | $1,012,601 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,012,601** |
| **D20 - Plumbing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D2010 - Plumbing Fixtures** | $64,361 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$64,361** |
| **D2020 - Domestic Water Distribution** | $355,112 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $168,882 | **$523,994** |
| **D2030 - Sanitary Waste** | $345,370 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$345,370** |
| **D2040 - Rain Water Drainage** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $233,218 | **$233,218** |
| **D30 - HVAC** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3020 - Heat Generating Systems** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,822,137 | $0 | **$1,822,137** |
| **D3030 - Cooling Generating Systems** | $819,029 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$819,029** |
| **D3040 - Distribution Systems** | $3,364,864 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$3,364,864** |
| **D3050 - Terminal & Package Units** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3060 - Controls & Instrumentation** | $1,458,745 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,458,745** |
| **D40 - Fire Protection** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D4010 - Sprinklers** | $972,769 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$972,769** |
| **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** | $709,940 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$709,940** |
| **D5020 - Lighting and Branch Wiring** | $700,282 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$700,282** |
| **D5030 - Communications and Security** | $421,527 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$421,527** |
| **D5090 - Other Electrical Systems** | $161,314 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$161,314** |
| **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** | $293,595 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $470,418 | $0 | **$764,012** |
| **E1090 - Other Equipment** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E20 - Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E2010 - Fixed Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

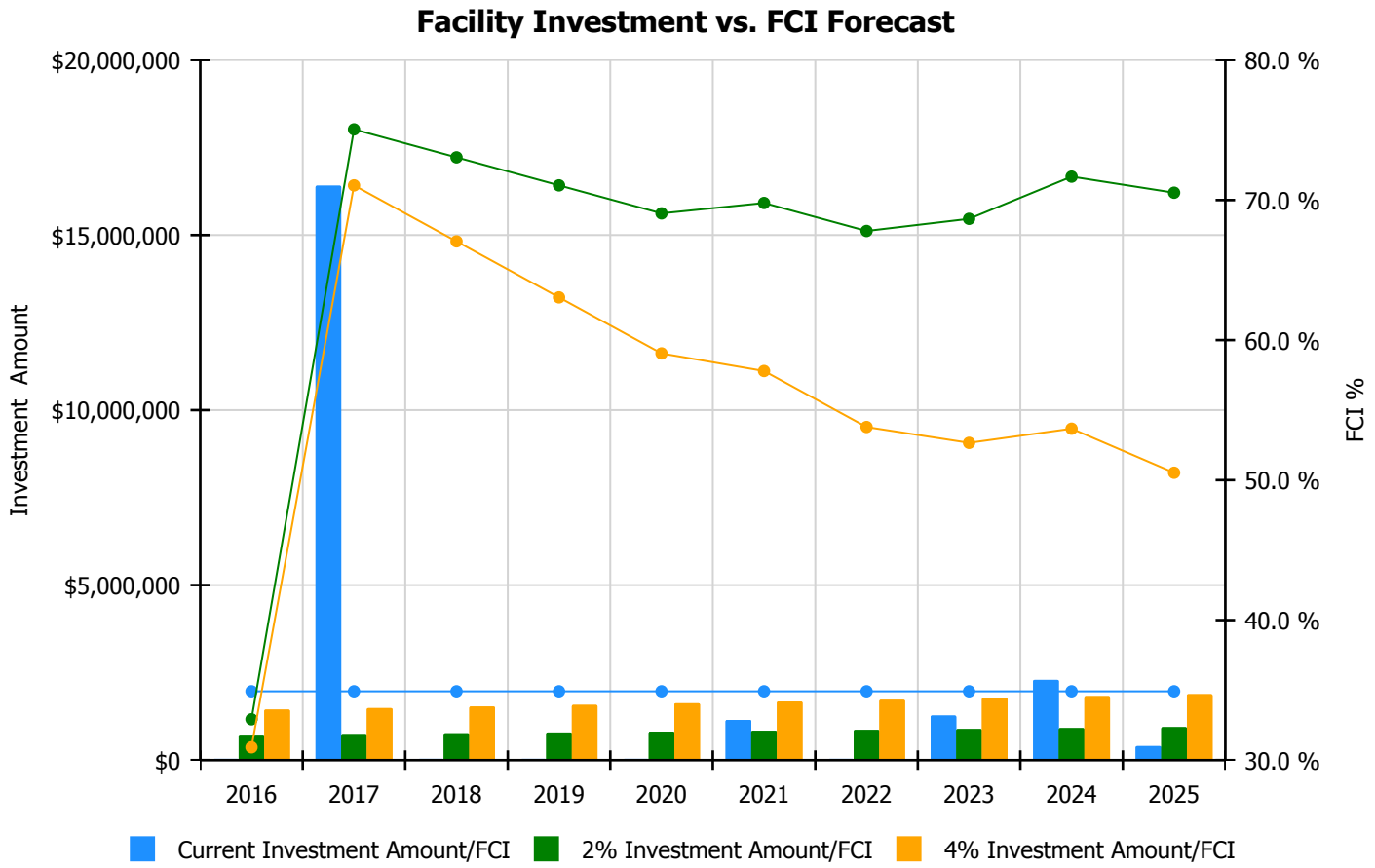
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



## 10 Year FCI Forecast by Investment Scenario

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

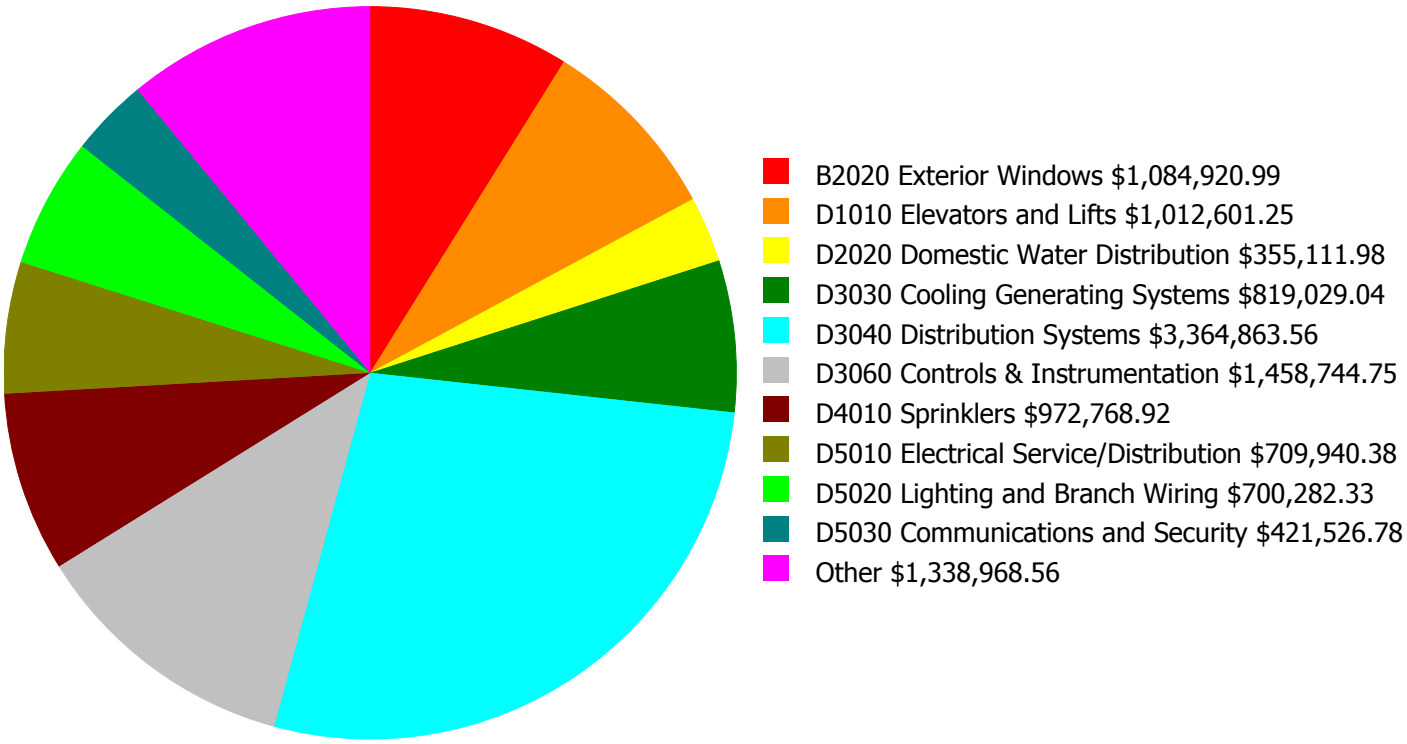
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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




| Year | Investment Amount Current FCI - 34.92% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $722,053.00 | 32.92 % | $1,444,106.00 | 30.92 % |
| 2017 | $16,410,871 | $743,714.00 | 75.05 % | $1,487,429.00 | 71.05 % |
| 2018 | $0 | $766,026.00 | 73.05 % | $1,532,052.00 | 67.05 % |
| 2019 | $0 | $789,007.00 | 71.05 % | $1,578,013.00 | 63.05 % |
| 2020 | $0 | $812,677.00 | 69.05 % | $1,625,354.00 | 59.05 % |
| 2021 | $1,147,708 | $837,057.00 | 69.79 % | $1,674,114.00 | 57.79 % |
| 2022 | $0 | $862,169.00 | 67.79 % | $1,724,338.00 | 53.79 % |
| 2023 | $1,273,499 | $888,034.00 | 68.66 % | $1,776,068.00 | 52.66 % |
| 2024 | $2,292,554 | $914,675.00 | 71.67 % | $1,829,350.00 | 53.67 % |
| 2025 | $402,100 | $942,115.00 | 70.53 % | $1,884,230.00 | 50.53 % |
| **Total:** | **$21,526,732** | **$8,277,527.00** | | **$16,555,054.00** | |

## Deficiency Summary by System

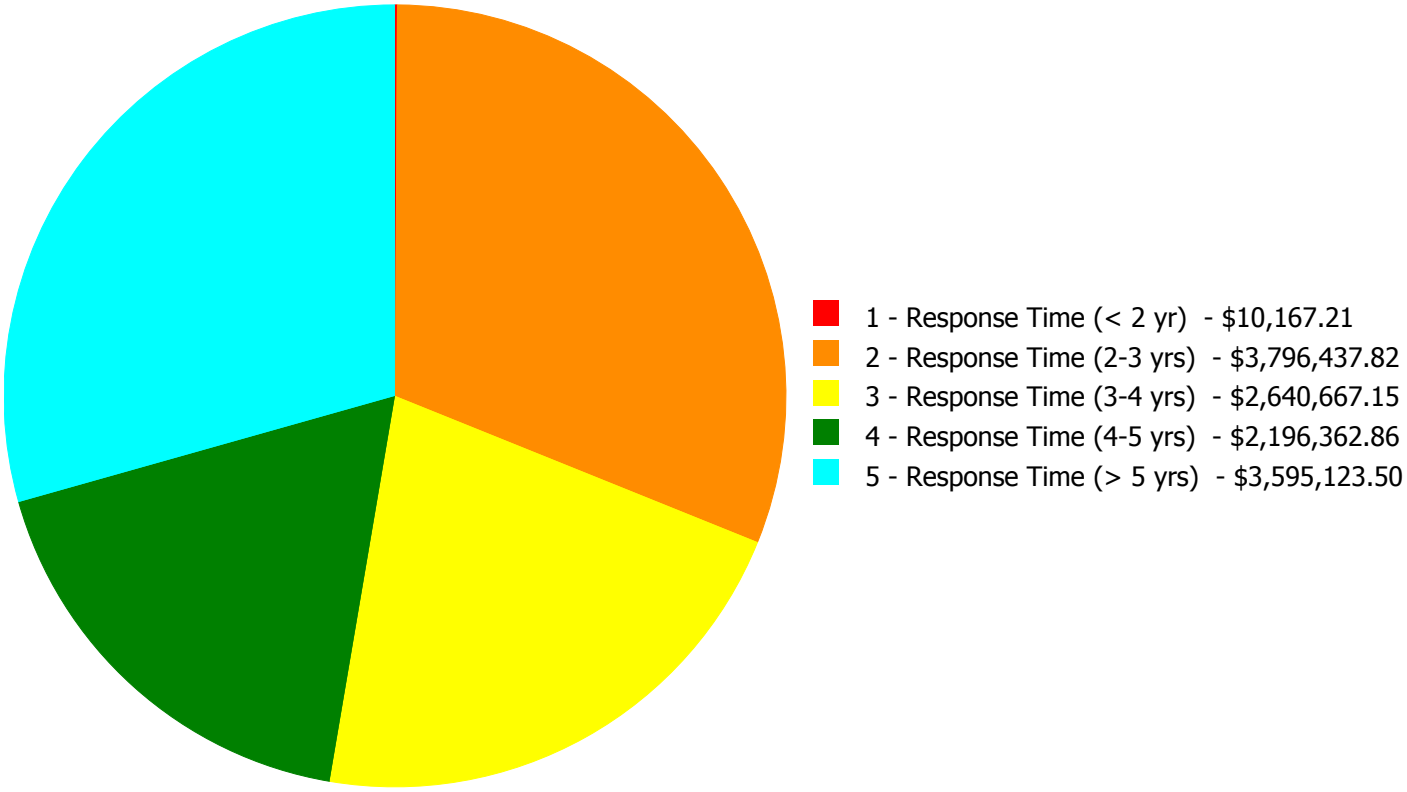
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $12,238,758.54**

## 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: $12,238,758.54**

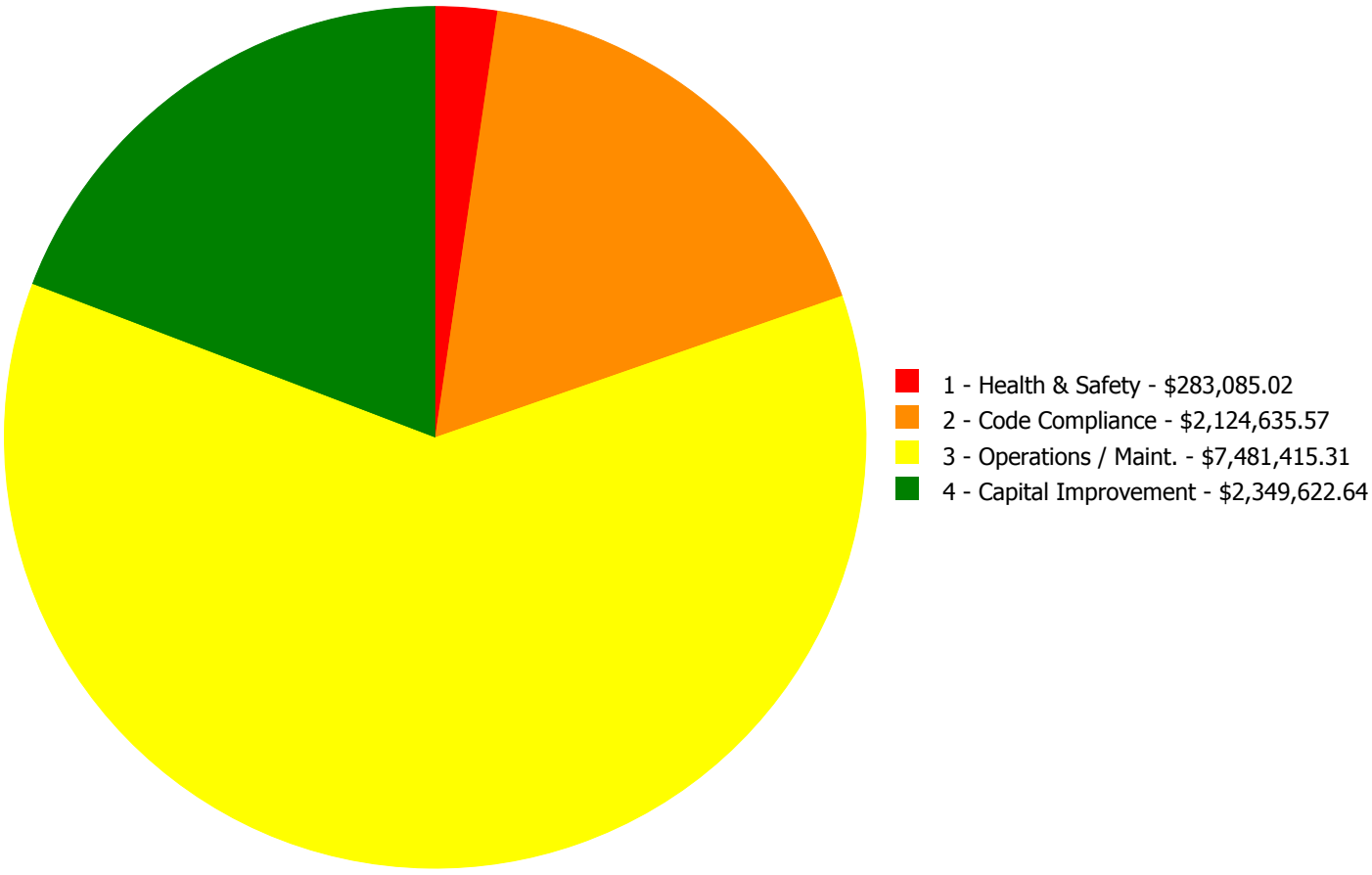
## Deficiency By Priority Investment Table

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 | $32,460.39 | $0.00 | $0.00 | $0.00 | $32,460.39 |
| B2020 | Exterior Windows | $0.00 | $0.00 | $0.00 | $1,084,920.99 | $0.00 | $1,084,920.99 |
| B2030 | Exterior Doors | $0.00 | $0.00 | $127,502.49 | $0.00 | $0.00 | $127,502.49 |
| C1020 | Interior Doors | $0.00 | $0.00 | $35,620.45 | $0.00 | $0.00 | $35,620.45 |
| C1030 | Fittings | $0.00 | $16,623.54 | $0.00 | $0.00 | $0.00 | $16,623.54 |
| C3010230 | Paint & Covering | $0.00 | $46,262.21 | $0.00 | $0.00 | $0.00 | $46,262.21 |
| C3020411 | Carpet | $0.00 | $0.00 | $15,219.44 | $0.00 | $0.00 | $15,219.44 |
| C3020413 | Vinyl Flooring | $0.00 | $0.00 | $56,482.40 | $0.00 | $0.00 | $56,482.40 |
| C3030 | Ceiling Finishes | $0.00 | $144,157.98 | $0.00 | $0.00 | $0.00 | $144,157.98 |
| D1010 | Elevators and Lifts | $0.00 | $1,012,601.25 | $0.00 | $0.00 | $0.00 | $1,012,601.25 |
| D2010 | Plumbing Fixtures | $0.00 | $64,361.07 | $0.00 | $0.00 | $0.00 | $64,361.07 |
| D2020 | Domestic Water Distribution | $10,167.21 | $363.98 | $0.00 | $0.00 | $344,580.79 | $355,111.98 |
| D2030 | Sanitary Waste | $0.00 | $0.00 | $345,369.68 | $0.00 | $0.00 | $345,369.68 |
| D3030 | Cooling Generating Systems | $0.00 | $0.00 | $0.00 | $0.00 | $819,029.04 | $819,029.04 |
| D3040 | Distribution Systems | $0.00 | $2,479,607.40 | $885,256.16 | $0.00 | $0.00 | $3,364,863.56 |
| D3060 | Controls & Instrumentation | $0.00 | $0.00 | $0.00 | $0.00 | $1,458,744.75 | $1,458,744.75 |
| D4010 | Sprinklers | $0.00 | $0.00 | $0.00 | $0.00 | $972,768.92 | $972,768.92 |
| D5010 | Electrical Service/Distribution | $0.00 | $0.00 | $709,940.38 | $0.00 | $0.00 | $709,940.38 |
| D5020 | Lighting and Branch Wiring | $0.00 | $0.00 | $141,546.72 | $558,735.61 | $0.00 | $700,282.33 |
| D5030 | Communications and Security | $0.00 | $0.00 | $162,415.22 | $259,111.56 | $0.00 | $421,526.78 |
| D5090 | Other Electrical Systems | $0.00 | $0.00 | $161,314.21 | $0.00 | $0.00 | $161,314.21 |
| E1020 | Institutional Equipment | $0.00 | $0.00 | $0.00 | $293,594.70 | $0.00 | $293,594.70 |
| | **Total:** | $10,167.21 | $3,796,437.82 | $2,640,667.15 | $2,196,362.86 | $3,595,123.50 | $12,238,758.54 |

## 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: $12,238,758.54**

## 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: D2020 - Domestic Water Distribution**

**Location:** Mechanical room

**Distress:** Energy Efficiency

**Category:** 4 - Capital Improvement

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

**Correction:** Provide expansion tank for water heater.

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $10,167.21

**Assessor Name:** System

**Date Created:** 01/21/2016

**Notes:** Install hydro-pneumatic storage tank for domestic water booster system

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

**System: B2010 - Exterior Walls**

**Location:** Lower windows

**Distress:** Building Envelope Integrity

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

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

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

**Qty:** 50.00

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

**Estimate:** $32,460.39

**Assessor Name:** System

**Date Created:** 11/13/2015

**Notes:** Replace and repair failing window lintels and surrounding masonry

**System: C1030 - Fittings**

**Location:** Toilets

**Distress:** Accessibility

**Category:** 2 - Code Compliance

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

**Correction:** Remove and replace damaged toilet paritions - handicap units

**Qty:** 17.00

**Unit of Measure:** Ea.

**Estimate:** $16,623.54

**Assessor Name:** System

**Date Created:** 11/13/2015

**Notes:** Provide new toilet partitions and toilet accessories including grab bars for accessibility

**System: C3010230 - Paint & Covering**

**Location:** Various

**Distress:** Damaged

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

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

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

**Qty:** 5,400.00

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

**Estimate:** $46,262.21

**Assessor Name:** System

**Date Created:** 11/13/2015

**Notes:** Repair and repaint interior walls (5% of painted wall surface)

**System: C3030 - Ceiling Finishes**

**Location:** Corridors

**Distress:** Appearance

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

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

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

**Qty:** 10,000.00

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

**Estimate:** $99,536.10

**Assessor Name:** System

**Date Created:** 11/13/2015

**Notes:** Install suspended acoustic tile ceiling system in corridors for appearance

**System: C3030 - Ceiling Finishes**


**Location:** Various

**Distress:** Damaged

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

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

**Correction:** Repair and resurface plaster ceilings - 2 coats plaster

**Qty:** 3,400.00

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

**Estimate:** $44,621.88

**Assessor Name:** System

**Date Created:** 11/13/2015

**Notes:** Repair and repaint interior ceiling (10% of painted ceiling surface)

**System: D1010 - Elevators and Lifts**

**Location:** TBD

**Distress:** Accessibility

**Category:** 2 - Code Compliance

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

**Correction:** Add external 4 stop elevator - adjust the electrical run lengths to hook up the elevator

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $1,012,601.25

**Assessor Name:** System

**Date Created:** 11/13/2015

**Notes:** Install elevator for accessibility (location TBD)

**System: D2010 - Plumbing Fixtures**

**Location:** Corridors

**Distress:** Accessibility

**Category:** 2 - Code Compliance

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

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

**Qty:** 4.00

**Unit of Measure:** Ea.

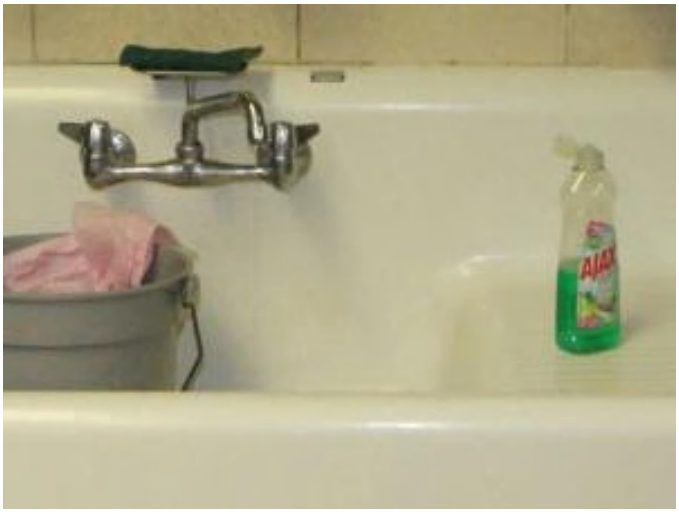
**Estimate:** $62,771.59

**Assessor Name:** System

**Date Created:** 01/19/2016

**Notes:** Replace drinking fountains with accessible ones with chillers

**System: D2010 - Plumbing Fixtures**




**Location:** Kitchen, classrooms

**Distress:** Failing

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

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

**Correction:** Replace lavatory faucet

**Qty:** 6.00

**Unit of Measure:** Ea.

**Estimate:** $1,589.48

**Assessor Name:** System

**Date Created:** 01/21/2016

**Notes:** Replace head start, kitchen, and science room faucets due to leaks and other operational failures

**System: D2020 - Domestic Water Distribution**

**Location:** Boiler room

**Distress:** Energy Efficiency

**Category:** 4 - Capital Improvement

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

**Correction:** Replace pipe and fittings

**Qty:** 1.00

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

**Estimate:** $363.98

**Assessor Name:** System

**Date Created:** 01/21/2016

**Notes:** Insulate domestic hot water storage tank to conserve energy

**System: D3040 - Distribution Systems**

**Location:** Classrooms, gym

**Distress:** Beyond Service Life

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

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

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

**Qty:** 50.00

**Unit of Measure:** Ea.

**Estimate:** $2,479,607.40

**Assessor Name:** System

**Date Created:** 01/22/2016

**Notes:** Replace aged unit ventilators and convectors

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

**System: B2030 - Exterior Doors**

**Location:** Ext. doors
**Distress:** Failing
**Category:** 3 - Operations / Maint.
**Priority:** 3 - Response Time (3-4 yrs)
**Correction:** Remove and replace exterior doors - per leaf
**Qty:** 14.00
**Unit of Measure:** Ea.
**Estimate:** $127,502.49
**Assessor Name:** System
**Date Created:** 11/13/2015

**Notes:** Replace exterior doors – rusted failing

**System: C1020 - Interior Doors**

**Location:** Throughout
**Distress:** Accessibility
**Category:** 2 - Code Compliance
**Priority:** 3 - Response Time (3-4 yrs)
**Correction:** Replace door knobs with compliant lever type
**Qty:** 64.00
**Unit of Measure:** Ea.
**Estimate:** $35,620.45
**Assessor Name:** System
**Date Created:** 11/13/2015

**Notes:** Provide ADA lever handle lock/latchsets on interior doors

**System: C3020411 - Carpet**

**Location:** Kindergarten

**Distress:** Beyond Service Life

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

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

**Correction:** Remove and replace carpet

**Qty:** 1,360.00

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

**Estimate:** $15,219.44

**Assessor Name:** System

**Date Created:** 11/13/2015

**Notes:** Replace carpet – beyond service life

**System: C3020413 - Vinyl Flooring**

**Location:** Various

**Distress:** Beyond Service Life

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

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

**Correction:** Remove and replace VCT

**Qty:** 4,700.00

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

**Estimate:** $56,482.40

**Assessor Name:** System

**Date Created:** 11/13/2015

**Notes:** Replace VCT flooring – damaged failing (30% of vinyl floor area)

**System: D2030 - Sanitary Waste**

**Location:** Entire building

**Distress:** Failing

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

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

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

**Qty:** 68,000.00

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

**Estimate:** $345,369.68

**Assessor Name:** System

**Date Created:** 01/21/2016

**Notes:** Inspect and repair or replace sanitary drain pipe as needed due to age, operation, and appearance including sewage ejector replacement

**System: D3040 - Distribution Systems**

**Location:** Entire 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:** 68,000.00

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

**Estimate:** $643,305.24

**Assessor Name:** System

**Date Created:** 01/22/2016

**Notes:** Inspect and repair steam and condensate pipes due to age

**System: D3040 - Distribution Systems**

**Location:** Mechanical room

**Distress:** Obsolete

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

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

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

**Qty:** 800.00

**Unit of Measure:** Seat

**Estimate:** $241,950.92

**Assessor Name:** System

**Date Created:** 01/22/2016

**Notes:** Replace obsolete AHU serving auditorium

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

**Location:** Entire Building

**Distress:** Beyond Service Life

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

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

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

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $369,048.20

**Assessor Name:** System

**Date Created:** 12/22/2015

**Notes:** Replace the entire distribution system with new panels and new wiring/conduits. Approximate (15) 208/120V.

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

**Location:** Basement

**Distress:** Obsolete

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

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

**Correction:** Replace Switchboard

**Qty:** 1.00

**Unit of Measure:** Ea.

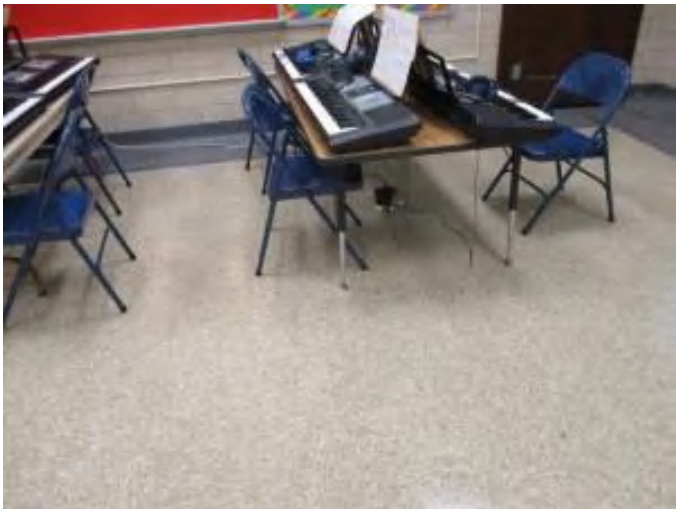
**Estimate:** $340,892.18

**Assessor Name:** System

**Date Created:** 12/22/2015

**Notes:** Provide new service 480V/277V, 3 phase power, approximate 1000 Amperes.

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



**Location:** Entire Building

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

**Correction:** Add wiring device

**Qty:** 390.00

**Unit of Measure:** Ea.

**Estimate:** $141,546.72

**Assessor Name:** System

**Date Created:** 12/22/2015

**Notes:** The teacher's whiteboard wall and the opposite of it need to be provided with double compartment surface raceways, the other two walls with minimum two duplex outlets each. Approximate 390 receptacles

**System: D5030 - Communications and Security**

**Location:** Entire Building
**Distress:** Health Hazard / Risk
**Category:** 1 - Health & Safety
**Priority:** 3 - Response Time (3-4 yrs)
**Correction:** Replace fire alarm system
**Qty:** 1.00
**Unit of Measure:** S.F.
**Estimate:** $162,415.22
**Assessor Name:** System
**Date Created:** 12/22/2015

**Notes:** Provide a new addressable fire alarm system. Approximate 90 devices.

**System: D5090 - Other Electrical Systems**

**Location:** Outdoor
**Distress:** Beyond Service Life
**Category:** 3 - Operations / Maint.
**Priority:** 3 - Response Time (3-4 yrs)
**Correction:** Add Standby Generator System
**Qty:** 1.00
**Unit of Measure:** Ea.
**Estimate:** $137,064.39
**Assessor Name:** System
**Date Created:** 12/29/2015

**Notes:** Provide an outdoor diesel powered generator. Approximate 70KW

**System: D5090 - Other Electrical Systems**

**Location:** Roof

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

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

**Correction:** Repair Lightning Protection System

**Qty:** 1.00

**Unit of Measure:** Job

**Estimate:** $24,249.82

**Assessor Name:** System

**Date Created:** 12/29/2015

**Notes:** Prepare a study to determine if the air terminals installed in the chimney provide the proper coverage to the school.

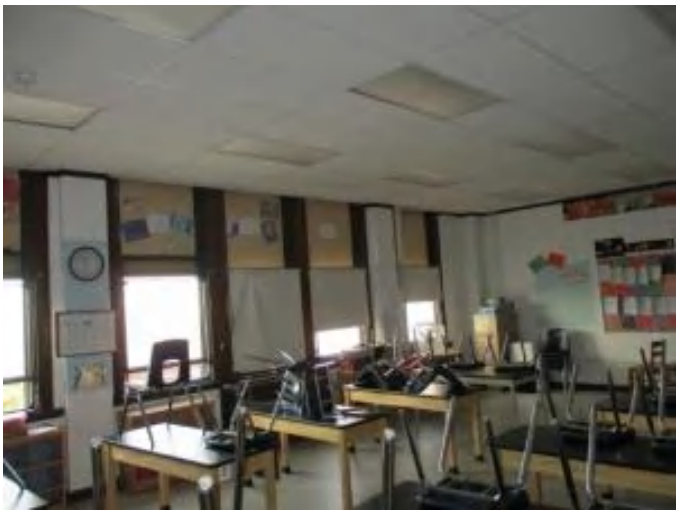
## Priority 4 - Response Time (4-5 yrs):

**System: B2020 - Exterior Windows**

**Location:** Ext. windows
**Distress:** Energy Efficiency
**Category:** 4 - Capital Improvement
**Priority:** 4 - Response Time (4-5 yrs)
**Correction:** Remove and replace double slider windows
**Qty:** 215.00
**Unit of Measure:** Ea.
**Estimate:** $1,084,920.99
**Assessor Name:** System
**Date Created:** 11/13/2015

**Notes:** Replace Plexiglas windows – hazed

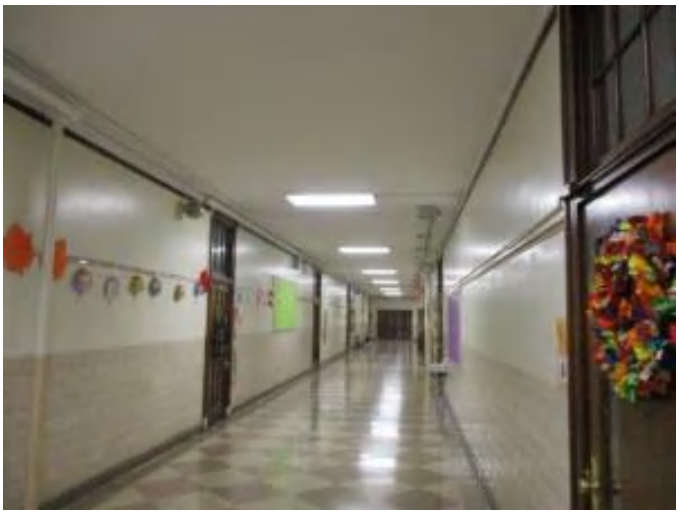
**System: D5020 - Lighting and Branch Wiring**



**Location:** Entire Building
**Distress:** Obsolete
**Category:** 3 - Operations / Maint.
**Priority:** 4 - Response Time (4-5 yrs)
**Correction:** Add Lighting Fixtures
**Qty:** 629.00
**Unit of Measure:** Ea.
**Estimate:** $558,735.61
**Assessor Name:** System
**Date Created:** 12/22/2015

**Notes:** Replace 70% of the fluorescent fixtures with pendant mounted up/down fixture with T-8 lamps. Approximate 629 fixtures.

**System: D5030 - Communications and Security**



**Location:** Entire Building
**Distress:** Security Issue
**Category:** 1 - Health & Safety
**Priority:** 4 - Response Time (4-5 yrs)
**Correction:** Add/Replace Video Surveillance System
**Qty:** 1.00
**Unit of Measure:** Ea.
**Estimate:** $120,669.80
**Assessor Name:** System
**Date Created:** 12/28/2015

**Notes:** Add surveillance CCTV cameras for a complete coverage of the school building interior. Approximate 30

**System: D5030 - Communications and Security**

**Location:** Entire Building
**Distress:** Obsolete
**Category:** 3 - Operations / Maint.
**Priority:** 4 - Response Time (4-5 yrs)
**Correction:** Add/Replace Clock System or Components
**Qty:** 50.00
**Unit of Measure:** Ea.
**Estimate:** $112,560.22
**Assessor Name:** System
**Date Created:** 12/28/2015

**Notes:** Provide a clock system with wireless, battery operated clocks. Approximate 50 clocks.

**System: D5030 - Communications and Security**

**Location:** Auditorium
**Distress:** Damaged
**Category:** 3 - Operations / Maint.
**Priority:** 4 - Response Time (4-5 yrs)
**Correction:** Add/Replace Sound System
**Qty:** 1.00
**Unit of Measure:** LS
**Estimate:** $25,881.54
**Assessor Name:** System
**Date Created:** 12/29/2015

**Notes:** Provide the auditorium with a sound system.

**System: E1020 - Institutional Equipment**


**Location:** Auditorium
**Distress:** Inadequate
**Category:** 4 - Capital Improvement
**Priority:** 4 - Response Time (4-5 yrs)
**Correction:** Add/Replace Stage Theatrical Lighting System
**Qty:** 1.00
**Unit of Measure:** Ea.
**Estimate:** $293,594.70
**Assessor Name:** System
**Date Created:** 12/29/2015

**Notes:** Provide the auditorium with dimming and theatrical lighting.

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

**System: D2020 - Domestic Water Distribution**

**Location:** Entire building
**Distress:** Beyond Service Life
**Category:** 3 - Operations / Maint.
**Priority:** 5 - Response Time (> 5 yrs)
**Correction:** Replace domestic water piping (75 KSF)
**Qty:** 68,000.00
**Unit of Measure:** S.F.
**Estimate:** $344,580.79
**Assessor Name:** System
**Date Created:** 01/21/2016

**Notes:** Replace domestic water distribution pipe due to age

**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. (+75KSF)
**Qty:** 51,000.00
**Unit of Measure:** S.F.
**Estimate:** $819,029.04
**Assessor Name:** System
**Date Created:** 01/22/2016

**Notes:** Install 170 ton chiller system to provide cooling for entire building

**System: D3060 - Controls & Instrumentation**

**Location:** Entire building

**Distress:** Obsolete

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

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

**Correction:** Replace pneumatic controls with DDC (75KSF)

**Qty:** 68,000.00

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

**Estimate:** $1,458,744.75

**Assessor Name:** System

**Date Created:** 01/22/2016

**Notes:** Install DDC to replace obsolete pneumatic controls

**System: D4010 - Sprinklers**

**Location:** Entire building

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

**Category:** 2 - Code Compliance

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

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

**Qty:** 68,000.00

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

**Estimate:** $972,768.92

**Assessor Name:** System

**Date Created:** 01/21/2016

**Notes:** Install fire protection sprinkler system with fire pump if needed

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D2020 Domestic Water Distribution | Pump, pressure booster system, 3 HP pump, includes diaphragm tank, control and pressure switch | 1.00 | Ea. | Mechanical room | | | | | 25 | 1995 | 2020 | $9,861.00 | $10,847.10 |
| D3020 Heat Generating Systems | Boiler, gas/oil combination, cast iron, steam, gross output, 2040 MBH, includes burners, controls and insulated jacket, packaged | 2.00 | Ea. | Boiler room | | | | | 35 | 1989 | 2024 | $43,116.20 | $94,855.64 |
| D5010 Electrical Service/Distribution | Panelboards, 3 pole 3 wire, main lugs, 240 V, 400 amp, no main breaker | 1.00 | Ea. | Basement Electrical Room | | | | | 30 | 1937 | 2047 | $2,297.70 | $2,527.47 |
| | | | | | | | | | | | | **Total:** | **$108,230.21** |

## 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): | 27,500 |
| Year Built: | 1937 |
| Last Renovation: | |
| Replacement Value: | $616,833 |
| Repair Cost: | $544,860.33 |
| Total FCI: | 88.33 % |
| Total RSLI: | 105.82 % |

**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Bldg ID: | S273001 | Site ID: | S273001 |

## 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 | 105.49 % | 61.74 % | $274,021.84 |
| G40 - Site Electrical Utilities | 106.67 % | 156.58 % | $270,838.49 |
| **Totals:** | **105.82 %** | **88.33 %** | **$544,860.33** |

## Condition Detail

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

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

## System Listing

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

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

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

| System Code | System Description | Unit Price $ | UoM | Qty | Life | Year Installed | Calc Next Renewal Year | Next Renewal Year | RSLI% | FCI% | RSL | eCR | Deficiency $ | Replacement Value $ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G2010 | Roadways | $11.52 | S.F. | | 30 | | | | 0.00 % | 0.00 % | | | | $0 |
| G2020 | Parking Lots | $8.50 | S.F. | | 30 | | | | 0.00 % | 0.00 % | | | | $0 |
| G2030 | Pedestrian Paving | $12.30 | S.F. | 25,700 | 40 | 1937 | 1977 | 2057 | 105.00 % | 69.81 % | 42 | | $220,685.94 | $316,110 |
| G2040 | Site Development | $4.36 | S.F. | 27,500 | 25 | 1937 | 1962 | 2042 | 108.00 % | 44.48 % | 27 | | $53,335.90 | $119,900 |
| G2050 | Landscaping & Irrigation | $4.36 | S.F. | 1,800 | 15 | 1937 | 1952 | 2028 | 86.67 % | 0.00 % | 13 | | | $7,848 |
| G4020 | Site Lighting | $4.84 | S.F. | 27,500 | 30 | 1937 | 1967 | 2047 | 106.67 % | 61.89 % | 32 | | $82,377.78 | $133,100 |
| G4030 | Site Communications & Security | $1.45 | S.F. | 27,500 | 30 | 1937 | 1967 | 2047 | 106.67 % | 472.63 % | 32 | | $188,460.71 | $39,875 |
| | | | | | | | | **Total** | **105.82 %** | **88.33 %** | | | **$544,860.33** | **$616,833** |

## 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.

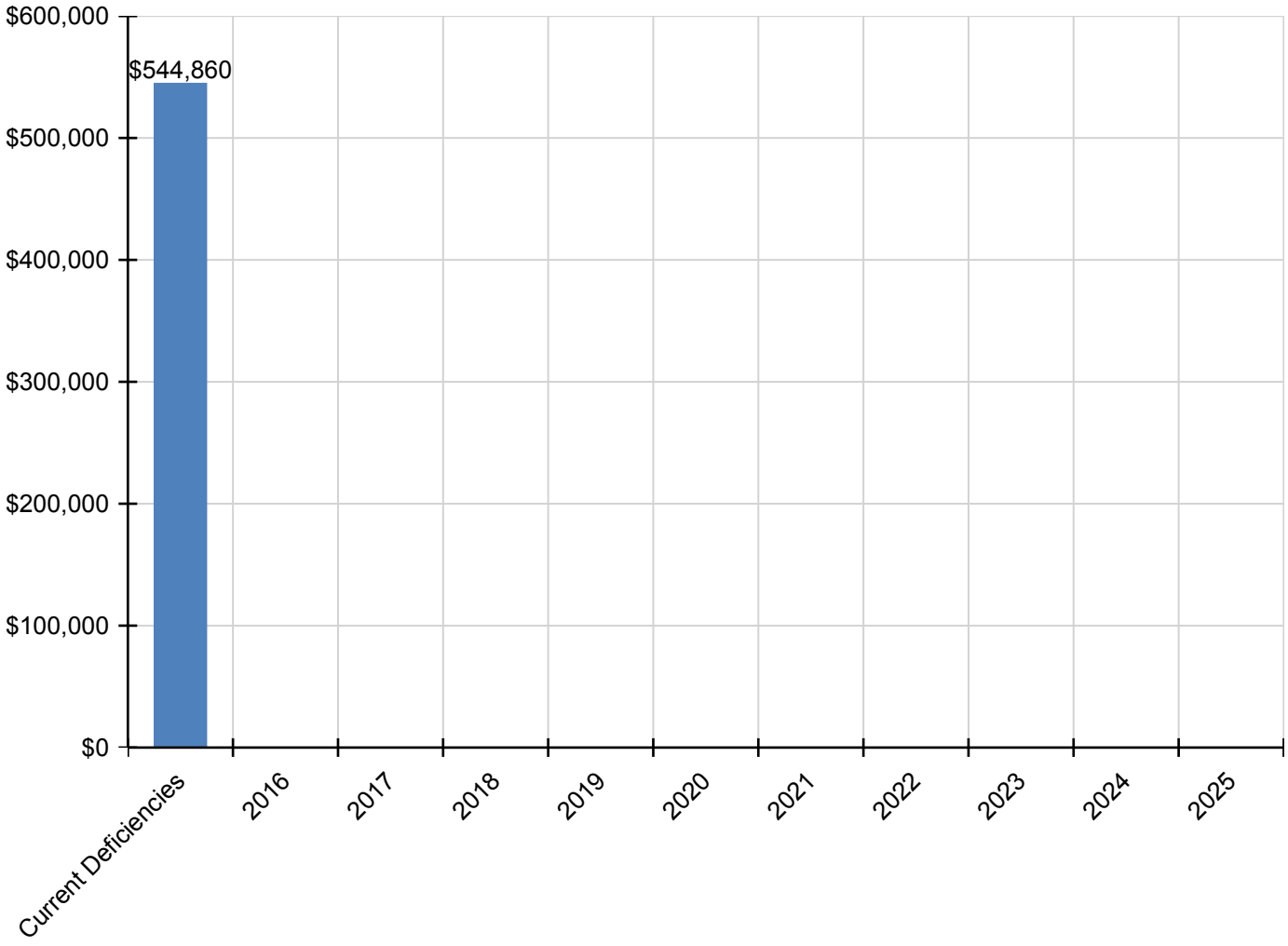
*Inflation Rate: 3%*

| System | Current Deficiencies | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total:** | **$544,860** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$544,860** |
| **G - Building Sitework** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G20 - Site Improvements** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G2010 - Roadways** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G2020 - Parking Lots** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G2030 - Pedestrian Paving** | $220,686 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$220,686** |
| **G2040 - Site Development** | $53,336 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$53,336** |
| **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** | $82,378 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$82,378** |
| **G4030 - Site Communications & Security** | $188,461 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$188,461** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

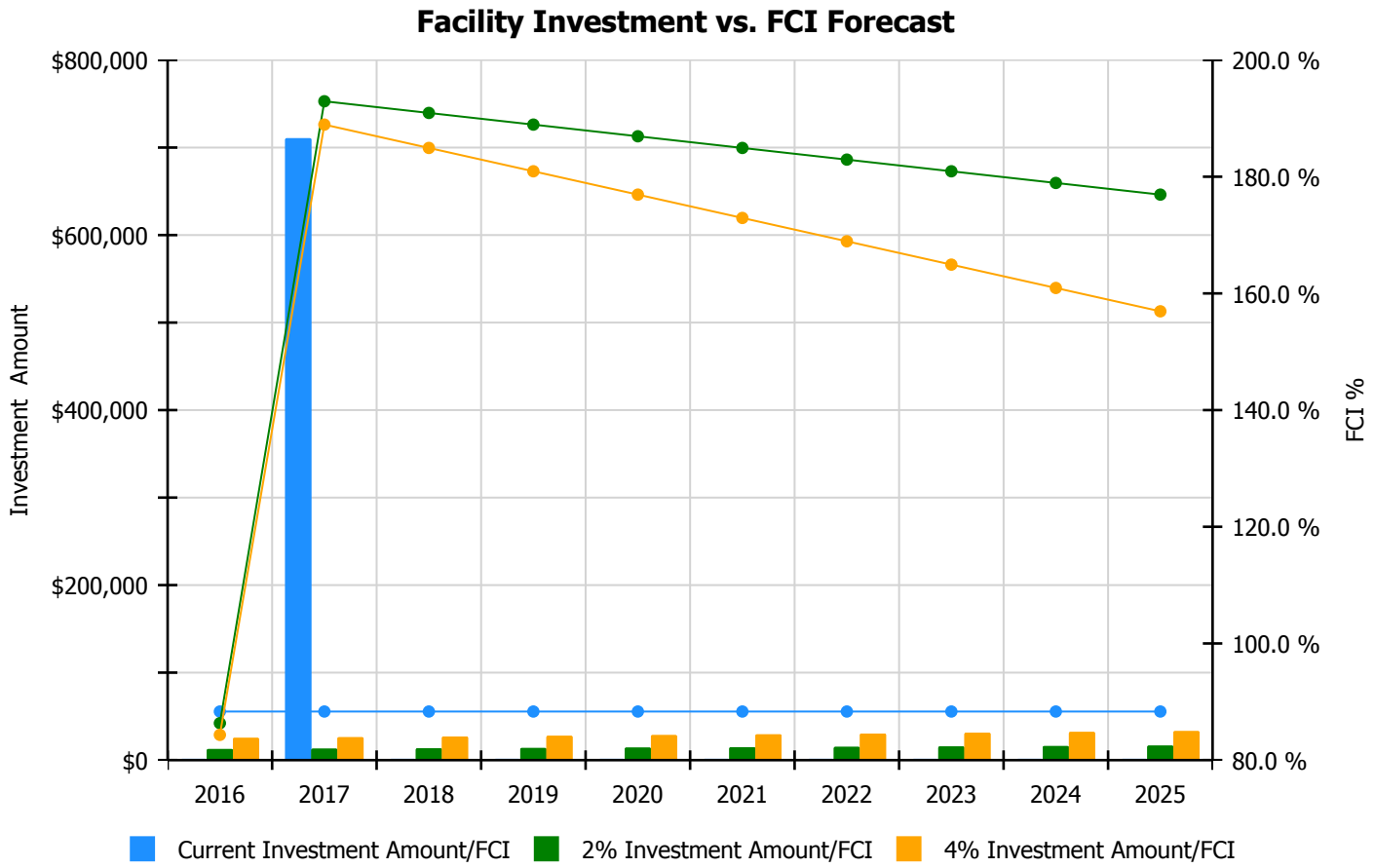
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



## 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:

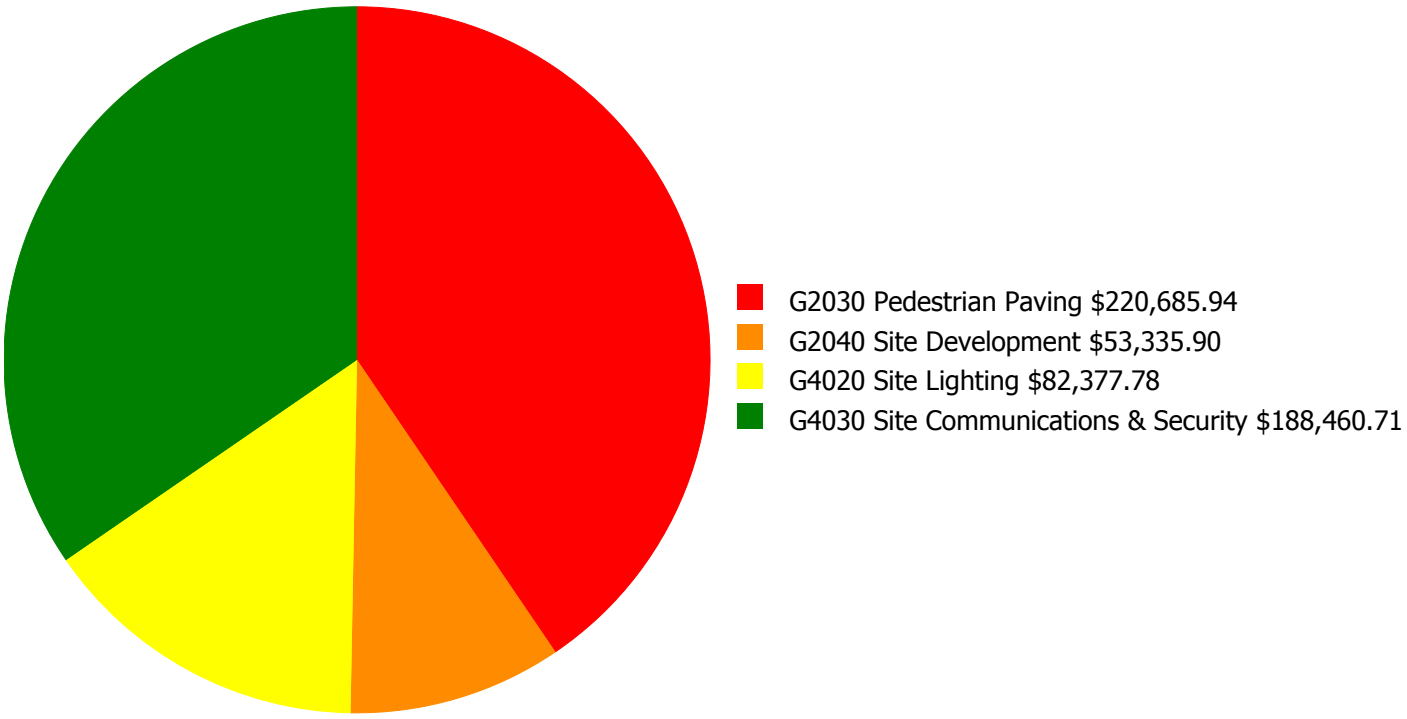
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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




| Year | Investment Amount Current FCI - 88.33% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $12,707.00 | 86.33 % | $25,414.00 | 84.33 % |
| 2017 | $710,680 | $13,088.00 | 192.93 % | $26,176.00 | 188.93 % |
| 2018 | $0 | $13,481.00 | 190.93 % | $26,961.00 | 184.93 % |
| 2019 | $0 | $13,885.00 | 188.93 % | $27,770.00 | 180.93 % |
| 2020 | $0 | $14,302.00 | 186.93 % | $28,603.00 | 176.93 % |
| 2021 | $0 | $14,731.00 | 184.93 % | $29,461.00 | 172.93 % |
| 2022 | $0 | $15,173.00 | 182.93 % | $30,345.00 | 168.93 % |
| 2023 | $0 | $15,628.00 | 180.93 % | $31,255.00 | 164.93 % |
| 2024 | $0 | $16,097.00 | 178.93 % | $32,193.00 | 160.93 % |
| 2025 | $0 | $16,579.00 | 176.93 % | $33,159.00 | 156.93 % |
| **Total:** | **$710,680** | **$145,671.00** | | **$291,337.00** | |

## Deficiency Summary by System

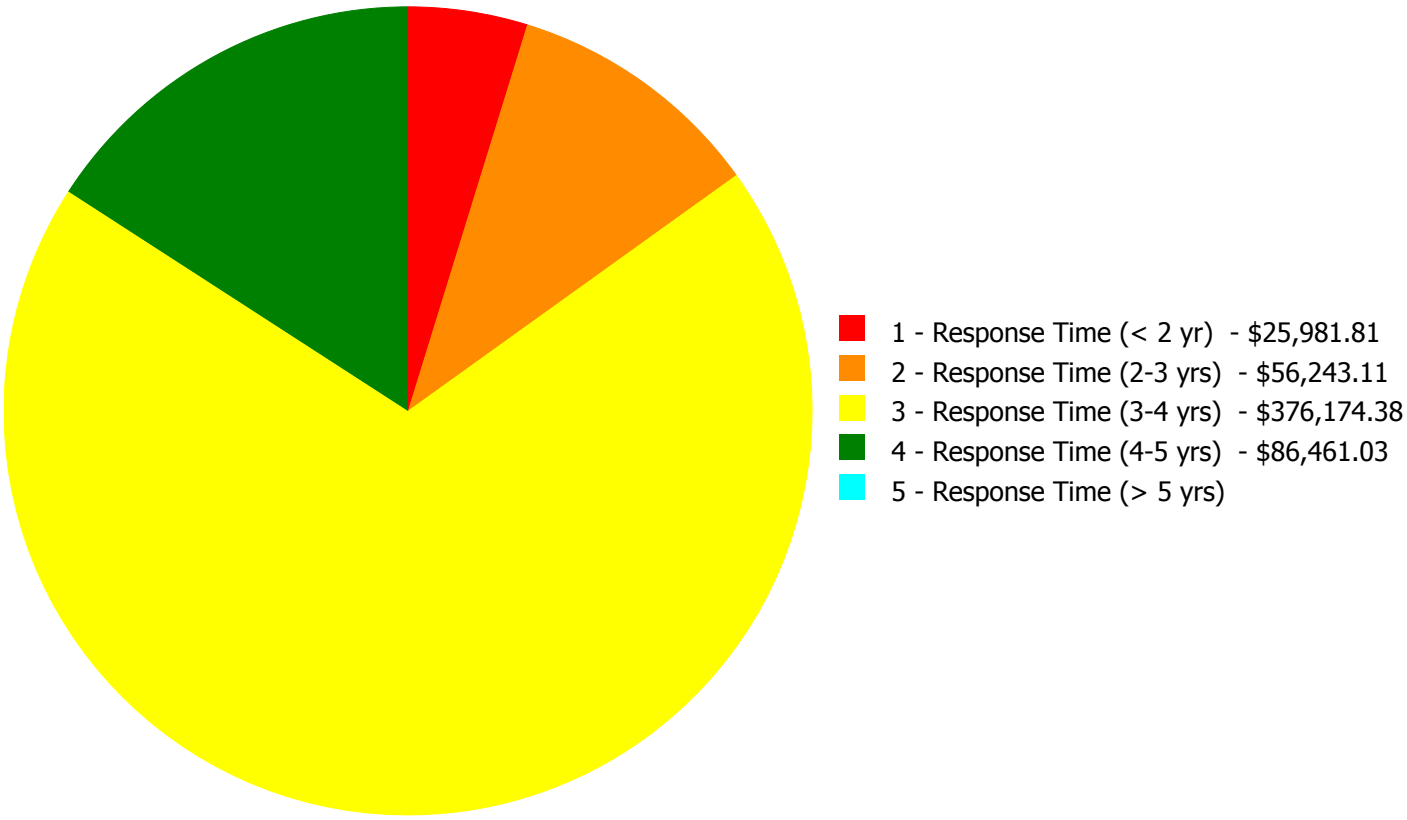
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $544,860.33**

## 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: $544,860.33**

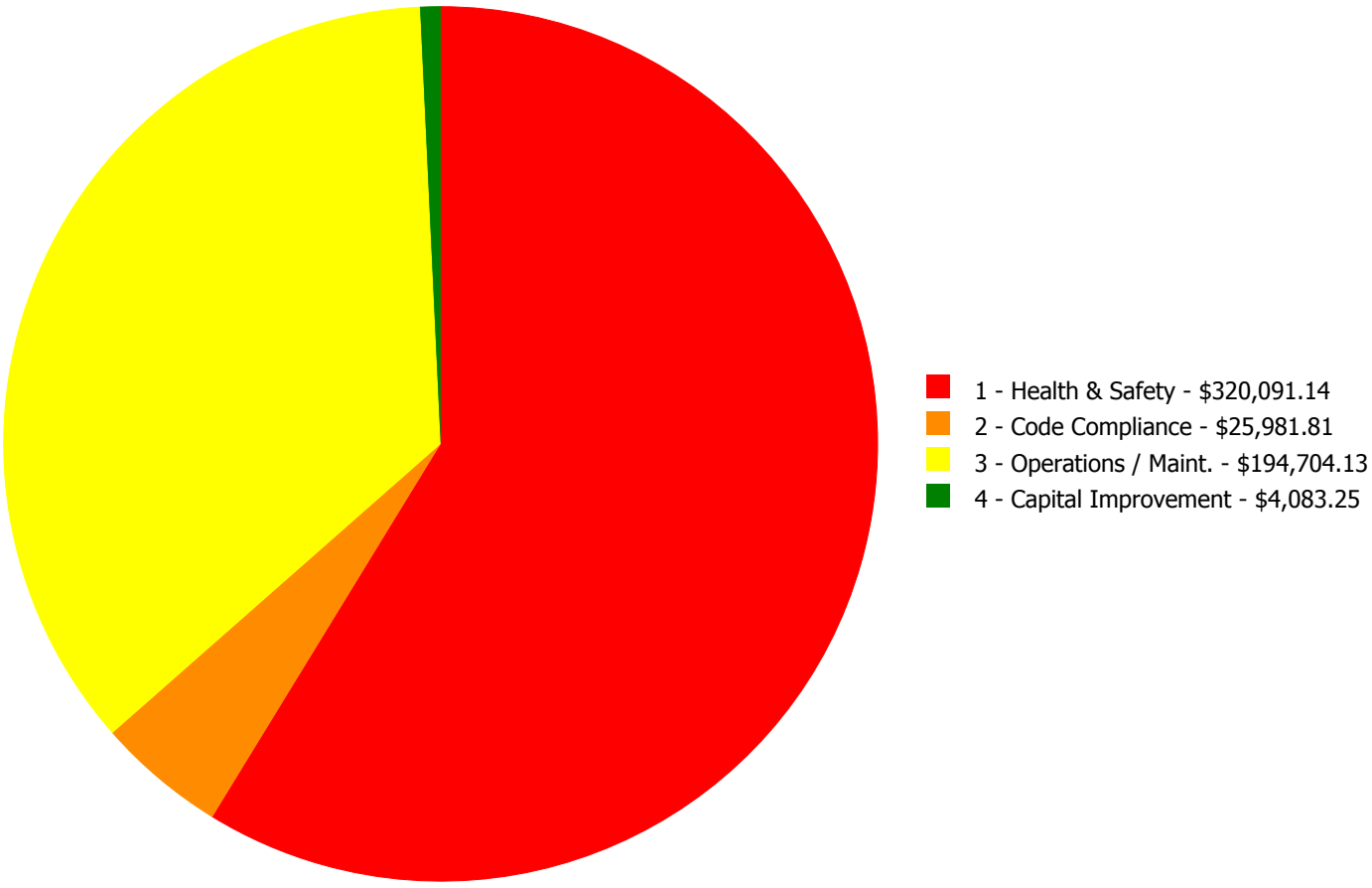
## Deficiency By Priority Investment Table

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

| System Code | System Description | 1 - Response Time (< 2 yr) | 2 - Response Time (2-3 yrs) | 3 - Response Time (3-4 yrs) | 4 - Response Time (4-5 yrs) | 5 - Response Time (> 5 yrs) | Total |
|---|---|---|---|---|---|---|---|
| G2030 | Pedestrian Paving | $25,981.81 | $2,907.21 | $191,796.92 | $0.00 | $0.00 | $220,685.94 |
| G2040 | Site Development | $0.00 | $53,335.90 | $0.00 | $0.00 | $0.00 | $53,335.90 |
| G4020 | Site Lighting | $0.00 | $0.00 | $0.00 | $82,377.78 | $0.00 | $82,377.78 |
| G4030 | Site Communications & Security | $0.00 | $0.00 | $184,377.46 | $4,083.25 | $0.00 | $188,460.71 |
| | **Total:** | $25,981.81 | $56,243.11 | $376,174.38 | $86,461.03 | $0.00 | $544,860.33 |

## 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: $544,860.33**

## Deficiency Details by Priority

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

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

**System: G2030 - Pedestrian Paving**

**Location:** Entrance

**Distress:** Accessibility

**Category:** 2 - Code Compliance

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

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

**Qty:** 20.00

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

**Estimate:** $25,981.81

**Assessor Name:** Craig Anding

**Date Created:** 11/13/2015

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

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

**System: G2030 - Pedestrian Paving**

**Location:** North entrance

**Distress:** Building Envelope Integrity

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

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

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

**Qty:** 20.00

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

**Estimate:** $2,907.21

**Assessor Name:** Craig Anding

**Date Created:** 01/22/2016

**Notes:** Repair and seal large crack at north entrance stairs

**System: G2040 - Site Development**

**Location:** Site

**Distress:** Health Hazard / Risk

**Category:** 1 - Health & Safety

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

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

**Qty:** 300.00

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

**Estimate:** $53,335.90

**Assessor Name:** Craig Anding

**Date Created:** 11/13/2015

**Notes:** Replace metal fence and gates – rusted and hazard to safety

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

**System: G2030 - Pedestrian Paving**

**Location:** Playard

**Distress:** Damaged

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

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

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

**Qty:** 7,300.00

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

**Estimate:** $191,796.92

**Assessor Name:** Craig Anding

**Date Created:** 11/13/2015

**Notes:** Repair damaged concrete play yard sections – (40% of play yard area)

---

**System: G4030 - Site Communications & Security**

**Location:** Building Perimeter

**Distress:** Security Issue

**Category:** 1 - Health & Safety

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

**Correction:** Add Video Surveillance System

**Qty:** 10.00

**Unit of Measure:** Ea.

**Estimate:** $184,377.46

**Assessor Name:** Craig Anding

**Date Created:** 12/29/2015

**Notes:** Add surveillance CCTV cameras to provide a complete coverage of the building perimeter. Approximate 10

---

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

**System: G4020 - Site Lighting**

**Location:** Building Perimeter
**Distress:** Security Issue
**Category:** 1 - Health & Safety
**Priority:** 4 - Response Time (4-5 yrs)
**Correction:** Add site lighting fixtures
**Qty:** 16.00
**Unit of Measure:** Ea.
**Estimate:** $82,377.78
**Assessor Name:** Craig Anding
**Date Created:** 12/29/2015

**Notes:** Add outdoor wall mounted lighting fixtures to provide a safer and better illumination. Approximate 16 HID fixtures

**System: G4030 - Site Communications & Security**

**Location:** Building Perimeter
**Distress:** Inadequate
**Category:** 4 - Capital Improvement
**Priority:** 4 - Response Time (4-5 yrs)
**Correction:** Add Site Paging System
**Qty:** 1.00
**Unit of Measure:** Ea.
**Estimate:** $4,083.25
**Assessor Name:** Craig Anding
**Date Created:** 12/29/2015

**Notes:** Provide an outdoor loud speaker facing the playground area

## 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 |