## 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.*

## Willard School

| | | | |
|---|---|---|---|
| Governance | DISTRICT | Report Type | Elementary |
| Address | 1930 E. Elkhart St. | Enrollment | 752 |
| | Philadelphia, Pa 19134 | Grade Range | '00-04' |
| Phone/Fax | 215-291-4714 / 215-291-4161 | Admissions Category | Neighborhood |
| Website | Www.Philasd.Org/Schools/Willard | 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** | **00.46%** | **$242,339** | **$52,429,167** |
| Building | 00.32 % | $160,786 | $50,256,330 |
| Grounds | 03.75 % | $81,553 | $2,172,837 |

## Major Building Systems

| Building System | System FCI | Repair Costs | Replacement Cost |
|---|---|---|---|
| **Roof** (Shows physical condition of roof) | 00.12 % | $3,202 | $2,759,389 |
| **Exterior Walls** (Shows condition of the structural condition of the exterior facade) | 00.00 % | $0 | $3,589,904 |
| **Windows** (Shows functionality of exterior windows) | 00.00 % | $0 | $1,751,671 |
| **Exterior Doors** (Shows condition of exterior doors) | 00.00 % | $0 | $141,028 |
| **Interior Doors** (Classroom doors) | 00.00 % | $0 | $341,386 |
| **Interior Walls** (Paint and Finishes) | 00.00 % | $0 | $1,634,957 |
| **Plumbing Fixtures** | 00.00 % | $0 | $1,314,969 |
| **Boilers** | 00.00 % | $0 | $1,815,863 |
| **Chillers/Cooling Towers** | 00.00 % | $0 | $2,380,949 |
| **Radiators/Unit Ventilators/HVAC** | 00.00 % | $0 | $4,181,250 |
| **Heating/Cooling Controls** | 00.00 % | $0 | $1,313,024 |
| **Electrical Service and Distribution** | 00.00 % | $0 | $943,432 |
| **Lighting** | 00.00 % | $0 | $3,373,011 |
| **Communications and Security** (Cameras, Pa System and Fire Alarm) | 12.47 % | $157,584 | $1,263,420 |

*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.*

## 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.*

## Willard Annex School

| | | | |
|---|---|---|---|
| Governance | DISTRICT | Report Type | Elementary |
| Address | 3072 Frankford Ave<br>Philadelphia, Pa 19134 | Enrollment<br>Grade Range | '00-04' |
| Phone/Fax | 215-291-4714 / 215-291-4161 | Admissions Category | Neighborhood |
| Website | Www.Philasd.Org/Schools/Willard | 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** | **26.06%** | **$1,501,276** | **$5,761,554** |
| Building | 25.53 % | $1,461,784 | $5,725,446 |
| Grounds | 109.37 % | $39,492 | $36,108 |

## Major Building Systems

| Building System | System FCI | Repair Costs | Replacement Cost |
|---|---|---|---|
| **Roof** (Shows physical condition of roof) | 00.00 % | $0 | $419,184 |
| **Exterior Walls** (Shows condition of the structural condition of the exterior facade) | 08.91 % | $26,465 | $296,902 |
| **Windows** (Shows functionality of exterior windows) | 00.00 % | $0 | $129,621 |
| **Exterior Doors** (Shows condition of exterior doors) | 00.00 % | $0 | $15,882 |
| **Interior Doors** (Classroom doors) | 00.00 % | $0 | $35,758 |
| **Interior Walls** (Paint and Finishes) | 00.00 % | $0 | $159,863 |
| **Plumbing Fixtures** | 00.00 % | $0 | $300,326 |
| **Boilers** | 00.00 % | $0 | $177,552 |
| **Chillers/Cooling Towers** | 00.00 % | $0 | $232,805 |
| **Radiators/Unit Ventilators/HVAC** | 213.23 % | $871,739 | $408,835 |
| **Heating/Cooling Controls** | 158.90 % | $204,009 | $128,385 |
| **Electrical Service and Distribution** | 00.00 % | $0 | $92,247 |
| **Lighting** | 00.00 % | $0 | $329,807 |
| **Communications and Security** (Cameras, Pa System and Fire Alarm) | 54.24 % | $67,007 | $123,535 |

*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

# S544001;Willard

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): | 97,261 |
| Year Built: | 2010 |
| Last Renovation: | |
| Replacement Value: | $52,429,167 |
| Repair Cost: | $242,339.34 |
| Total FCI: | 0.46 % |
| Total RSLI: | 85.11 % |

**Description:**

Facility Assessment
October, 2015

**School District of Philadelphia**
**Willard Elementary School**
**1930 E. Elkhart Street**
**Philadelphia, PA 19134**

97,261 SF / 775 Students / LN 05

The Willard Elementary School building is located at 1930 E. Elkhart Street in Philadelphia, PA. The 97,261 square foot building was constructed in 2010. The building has no basement. The west wing and portion or the central core are 2 stories, the remainder is 1 story.

Mr. Scott Ovington, Facility Area Coordinator provided input to the Parsons assessment team on current problems and planned renovation projects. Mr. James Welsh, Building Engineer, accompanied us on our tour of the school and provided us with detailed information on the building systems and recent maintenance history.

**STRUCTURAL/ EXTERIOR CLOSURE:**

The building typically rests on concrete spread and strip footings that are not showing signs of settlement or damage. The main structure is typically steel frame, columns and girders; floors are typically concrete slab over metal deck supported by bar joists. The superstructure is generally in very good condition.

The exterior walls typically comprise of stone cladding on the first floor and split face brick on the second floor; walls are insulated cavity type. Egress stairways and walls extending above main roof are clad with metal panels.

The roof structure is a metal deck supported by bar joists and wide flange framing and is typically flat with slopes to roof drains. The certain elements of the building such as Gym, Auditorium and second floor of the classroom wing are curved and supported by trusses and purlins.

Exterior windows are typically anodized aluminum curtain wall, double insulated units with tilt-in operating sections covered with integral security screens; Gym.

Exterior doors are typically aluminum, double insulated glazed and part of the curtain wall system; service doors are typically hollow metal in hollow metal frames, in very good condition.

Roofing typically consists of 2 types: muilt-up over rigid insulation, and prefinished metal, standing seam roofing over curved roofs. All roofing is generally in very good condition except a small leak developing along the metal roof lashing above 3 kindergarten classrooms on the first floor.

INTERIORS:

Partition wall types include painted CMU, ground face CMU, glazed aluminum store front and drywall, in very good condition. Portions of Gym walls are acoustic CMU; Walls in auditorium theatre are typically acoustic CMU and drywall with acoustic panels. The interior wall finishes are generally painted drywall in offices and CMU elsewhere.

Most ceilings are 2x2 suspended acoustical panels; ceiling in Gym, and main stairway is exposed metal deck, painted. Ceiling in the auditorium theatre is exposed with suspended acoustical baffles. All ceilings are in very good condition.

Flooring in most areas is generally vinyl composition tile, in very good condition. Flooring in library and offices is carpet in very good condition. Gym has artificial wood flooring in very good condition. Flooring in toilets and kitchen area is typically ceramic tiles in good condition.

Interior doors are generally solid core wood doors in hollow metal frames, in good condition. Doors in store front partitions are typically solid core, glazed.

Stairs are generally painted steel with concrete filled metal pan treads with non-slip nosings.

Interior identifying devices are of modular type directly affixed to wall surfaces.

Toilet partitions are mostly phenolic resin panels, ADA compliant, in very good condition, Accessories are in very good condition.

Institutional equipment includes library equipment; stage equipment; A/V equipment; and laboratory equipment; gym equipment – basketball backstops, scoreboards, etc. Other equipment includes kitchen equipment. All equipment is in very good condition.

CONVEYING EQUIPMENT:

The building does have a 3500 lb hydraulic elevator, in good condition.

ACCESSIBILITY:

The building does have accessible entrance and accessible routes, including walkways not exceeding 5% slope, per requirement. Toilets are generally in compliance with ADA. Door handles are typically lever type. Elevator is ADA compliant.

GROUNDS (SITE):

There are two parking lots at the site, in good condition. Public parking for 48 vehicles has 3 accessible spaces; staff parking for 35 vehicles has no spaces designated as accessible. Compliant accessible signage is in good condition. Per ADA requirements 2 spaces are needed at staff parking.

Playground paving is generally asphalt a portion of which is covered with protective rubber mat. Walkways are concrete paved. Perimeter chain link fences are generally in good condition. Playground areas are enclosed with picket fences. The north and west portion of the site is landscaped with trees, shrubs and grass areas, generally in good condition, however a large grass area on the north side is deteriorated. The trees and shrubs are not fully mature.

PLUMBING:

Plumbing Fixtures - The original plumbing fixtures remain in service. Fixtures in the restrooms on each floor consist of wall mounted push button flush valve water closets, wall hung urinals and lavatories with both wheel handle and lever faucets. The restrooms on each floor are equipped with at least one handicap accessible stall. No major issues with the plumbing fixtures were reported. The units are in good condition and should provide reliable service for the next 25-30 years.

Drinking fountains in the corridors and at the restrooms consist of wall hung fixtures with integral refrigerated coolers. They are within their service life and are accessible type.

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

The Kitchen has one (1) sink; a three-compartment stainless steel sink with lever operated faucets. A grease trap is not installed. Chemicals are injected manually into the sanitizing basins.

Domestic Water Distribution - A 4" city water service enters the first floor Mechanical Room 168A on the North side of the building. Two (2) reduced pressure backflow preventers are installed in parallel. The domestic hot and cold water distribution piping is copper piping and sweat fittings. The maintenance staff reports no significant problems with scale build up in the domestic piping and the supply is adequate to the fixtures.

Two (2) A.O. Smith 100 gallon vertical domestic hot water heaters with circulating pump and Amtrol expansion tank provide domestic hot water for the building. The expansion tank is not used, according to the Building Engineer. Both units are original to the building, are gas fired, and are located in first floor Mechanical Room 168A room. The hot water heaters are equipped with T&P relief valves. The domestic hot water heaters are well within their service lives and reliable service should be provided for the next 5-8 years. A water softener is located in Mechanical Room 168A.

Sanitary Waste - The sanitary sewer piping is cast iron with no-hub fittings and is within its service life. The majority of sanitary piping is located under the building slab and within mechanical chases. The maintenance staff reported no problems with the sanitary waste piping systems and they are well within their service life.

A sewage ejector pit located in Mechanical Room 119 receives water from the surrounding area. It has dual submerged pumps that are original to the building and are within their service lives. The system appeared to be in good condition and the pit is sealed.

Rain Water Drainage - Rain water drains from the roof are routed through a combination of internal and external rain leaders. The internal roof drains are cast iron piping with no-hub fittings and are routed through mechanical chases in the building. Other roof drains lead to external rain leaders with PVC downspouts that run down the side of the building and connect to cast iron piping approximately twelve (12) feet above the ground. The system is original to the building and is within its service life. No issues were reported with the roof drains or rain leaders.

**MECHANICAL:**

Energy Supply - An 8" city gas service enters Mechanical Room 168A from the parking lot on the North East side of the building. The gas meter is 4" and located in the Mechanical Room 168A room.

The reserve oil supply is stored in a 10,000 gallon underground storage tank (UST) located in the parking lot on the North East side of the school. Duplex 1/2HP pumps located in Mechanical Room 168A circulate oil through the system. Oil is used as a backup fuel and the District receives credit from the gas utility as an interruptible service. USTs have an anticipated service life of 20 years.

Heat Generating Systems - Building heating hot water is generated by two (2) 75HP HB Smith model 28HE RTS high efficiency cast iron sectional boilers with gross output of 2,513MBH. Each boiler is equipped with a Power Flame burner designed to operate on

natural gas or fuel oil. Combustion air makeup is supplied by louvers equipped with motorized dampers. Burner oil pumps are loose and not driven by the fan motor. The gas train serving the boilers does appear to have code required venting of the regulators and dual solenoid valves with venting of the chamber between. No major issues with the boilers were reported by the Building Engineer. Cast iron boilers have an anticipated service life of 35years or more; these units have been in service 5 years. The District should provide reliable service for the next 25 to 30 years.

Cooling Generating Systems - Chilled water is generated by two (2) Carrier model 30HXC water-cooled twin rotary-screw chillers located in Mechanical Room 168A. Each chiller provides a nominal 210 tons of cooling, has three (3) compressors, and utilizes R-134a refrigerant. Heat from the chillers is rejected by two (2) roof mounted Evapco LSTB forced draft, counterflow cooling towers. Each chiller operates with an associated cooling tower. One (1) chiller is sufficient to hold the building on normal summer days; two (2) chillers are required on very hot days. Rotary screw compressor chillers have an anticipated service life of 20 years; these units have been in service 5 years. The District should provide reliable service for the next 12-15 years. Galvanized metal cooling towers have an anticipated service life of 18 years; these units have been in service 5 years. The District should provide reliable service for the next 10 -13 years. The Building Engineer reported no issues with either the chillers or cooling towers.

Distribution Systems - A two-pipe, dual temperature distribution system supplies building heating or cooling water to the unit ventilators in classrooms and fan coil units in offices. Two (2) 10HP end-suction Bell and Gossett dual temperature supply pumps, P-7 and P-8, circulate building heating or cooling water to the unit ventilators. The pumps are in good condition and well within their service life.

A four-pipe distribution system supplies building heating and cooling water to the air handling units on the roof, in Mechanical Room 119, and Mechanical Room 219. Heating water is supplied to AHU-9 and AHU-10, which provide heating and ventilation only to the Gymnasium, by the hot water piping. Four (4) 7.5HP end-suction Bell and Gossett heating water supply pumps, P1, P2, P3, and P4, circulate building heating water. An expansion tank, air separator, and chemical treatment are installed on the heating water distribution system. Two (2) small in-line heating water supply pumps, P-5 and P-6, are on the supply side of the heating water. Four (4) 7.5HP end-suction Bell and Gossett chilled water return pumps, P-9, P-10, P-11, and P-12, circulate building chilled water. An air separator is installed on the chilled water return side. Two (2) 10HP end-suction Bell and Gossett chilled water supply pumps, P-13 and P-14, circulate building chilled water to the air handling units.

A two-pipe condenser water loop serves each respective chiller and cooling tower pair. There are four (4) 10HP end-suction Bell and Gossett condenser water supply pumps; P-15, P-16, P-17, and P-18. Pumps P-17 and P-18 serve chiller CH-1, pumps P-15 and P-16 serve chiller CH-2. Two (2) pumps serve each chiller/cooling tower combination with one (1) pump in operation and the other pump acting as a backup.

All pumps are original to the building, appear to be in good condition, and are within the anticipated service life of 25 years. All pumps, except P-5 and P-6, are equipped with VFDs for energy efficient operation. All main piping is black steel, covered with insulation, and appears to be in good condition. The condenser water piping is not covered with insulation and does not require it. Smaller branch piping is copper and covered in insulation. No problems with the distribution systems were reported.

Four (4) Annex Air, one (1) Racan Carrier, and five (5) Carrier air handling units (AHU) provide heating and cooling to specific spaces within the building. All AHUs are fed by a four pipe system for building hot and chilled water, except for AHU-9 and AHU-10 which provide heating only. A list of the air handling units and the spaces they serve is available in the eCOMET® file. AHU-1 is a Carrier model 39MN17 unit that serves the South corridor and is located in Mechanical Room 119. AHU-2 is a Carrier model 39MN08 unit that serves the Library and is located in Mechanical Room 219. AHU-3 is a Carrier model 39MN06 unit that serves the main office and is located in Mechanical Room 119. AHU-4 is an Annex Air model ERP unit that serves the Auditorium, has a 7.5HP supply fan, and is located on the roof. AHU-5 is a Carrier model 39MN17 unit that serves the Lobby and is located in Mechanical Room 119. AHU-6 is a Racan Carrier model A2D unit that serves the Cafeteria, has a 10HP supply fan, and is located on the roof. AHU-7 is an Annex Air model ERP unit that serves the North corridor, has a 7.5HP supply fan, and is located on the roof. AHU-8 is a Carrier model 39MN17 unit, serves the second floor corridor, and is located in Mechanical Room 219. AHU-9 and AHU-10 are Annex Air model ERP units that serve the Gymnasium, have a 7.5HP supply fan, are located on the roof, and provide heating and ventilation only. All units were operational during the site visit, are original to the building, and are well within their service life.

Unit ventilators provide heating and cooling for the classrooms. The unit ventilators are original to the building and are within their service life. Outdoor air for the building is provided by wall openings in the unit ventilators and by the air handling units. No major issues were reported with the unit ventilators. Fin tube radiators provide heating for hallways and stairwells. All radiators appeared to be in good condition. Fan coil units provide conditioned air to the various offices located throughout the building.

Terminal & Package Units - The building is exhausted by a total of seventeen (17) roof mounted exhaust fans. The lower roof has seven (7) exhaust fans, the upper roof has ten (10) exhaust fans. A list of the exhaust fans and the spaces they serve is available in the eCOMET® file. Two (2) power ventilators are also installed on the upper roof. The exhaust fans serve the various restrooms, IMF

room, mechanical room, and electrical rooms. The exhaust fans remove air from the ceiling plenum above the drop ceiling. The Building Engineer did not report any problems with the exhaust system. Roof mounted exhaust fans have an anticipated service life of twenty (20) years; these units have been in service 5 years; the District should provide reliable service for the next 12-15 years.

One (1) kitchen hood with a gas fired outdoor air make-up system is installed above the warming oven. The hood does not have integral fire suppression as only premade meals are served. The equipment is well within service life.

Controls & Instrumentation - A Niagara building management system (BMS) with DDC modules and communications network is installed in this building. The Building Engineer reported that the BMS, installed when the building was built, is operational. All major mechanical equipment (chillers, boilers, air handling units, pumps, fans, etc.) is able to be monitored and controlled by the system. Several valves are manual operation only, while most are able to be actuated by the controls system. This system is well within its service life and should provide reliable operation for the next 10-15 years.

Sprinklers - The building is equipped with a wet type sprinkler system. An 8" fire water line enters the building in Mechanical Room 168A along the same wall as the domestic water. The fire suppression system is the originally installed equipment and should not need replacement within the next 30 years.

The building is not equipped with fire stand pipes.

**ELECTRICAL:**

Site electrical service - The primary power is at 13.2KV from the street power poles which goes underground and feeds a 1000KVA indoor transformer (13.2KV – 480V/277V). The electrical service is fairly new (2010) and has many years of useful life left. The main switchgear is rated at 1600 Amp, 480 V, 3 phase, and is located in main electrical room. The PECO meter (PECO 01 411196349) is located inside the electrical room as well. The electrical service entrance and the main building electrical distribution systems are fairly new and in very good condition. The electrical service has capacity for future growth.

Distribution system - The electrical distribution is accomplished with 120V distribution switchboards. Switchboards feed the 120V panels throughout the building (two in each floor). These panels are in good condition and do not need to be replaced.

Receptacles - There is adequate receptacles in classrooms, computer rooms, libraries, and other areas.

Lighting - Interior building is illuminated by various types of fixtures. They include fluorescent lighting (T-5 & T-8 lamps) in majority of the areas, including; classrooms, corridor, offices and Kitchen. Surface or pendent mounted industrial fluorescent used in mechanical and electrical rooms. Gymnasium is illuminated by metal halide enclosed glass fixture. The entire building's interior lighting fixtures are in good condition and have many years of useful life left in them.

Fire alarm - The present Fire Alarm system is automatic/addressable, and is in compliance with safety codes. There are manual pulls stations throughout the building. There are also sufficient number of horn/strobes installed in the classrooms, corridors, offices and other areas in the school.

Telephone/LAN - The school telephone and data systems are new and working adequately. A main distribution frame (MDF) along with a telephone PBX system is servicing the communication system of the building. School is also equipped with Wi-Fi system.

Public address - Separate PA system does not exist. School uses the telephone systems for public announcement. This system is working adequately. The present Intercom System is functioning fine. Each class room is provided by with intercom telephone service. The system is for paging and intercom communication between main office phone to classroom phones, classroom to main office, and classroom to classroom.

Clock and Program system - The present clock system is working adequately for most part, however, school prefers more clocks that are controlled by central master control panel.

Television System - Television system is not provided in the school. Most classes are provided with smart board having ability of connection to computer and internet.

Security Systems, access control, and video surveillance - The school is provided with adequate video surveillance system. There are sufficient number of cameras (about 64). They are installed at exit doors, corridors, exterior, and other critical areas. These cameras are controlled by a Closed Circuit Television system (CCTV).

Emergency Power System - School is provided with a 100 KW emergency generator to feed elevators, emergency lighting and other emergency loads from an Emergency Panel. Power is switched between Normal (Utility Power) and Emergency Power (Generator) via an Automatic Transfer Switch (ATS).

Emergency lighting system, including exit lighting - There are sufficient number of emergency lighting fixtures in corridors, and other exit ways. Exit signs and emergency fixtures are fairly new.

Lightning Protection System - There is adequate lightning protection system installed in the school. There are lightning rods installed on the roof. The rods are properly connected to the ground via stranded aluminum cables.

Grounding - The present grounding system is adequate. All the equipment in the school are properly bonded to the ground.

Site Lighting - Campus and parking area and building Perimeters are adequately lighted for safety of the people and security of property.

Site Paging - The present Site paging System is adequate. There are sufficient number of speakers located inside the building and on the building exterior walls.

Auditorium lighting and sound system - The auditorium general lighting is at proper illumination FC level. Stage lighting system and the sound systems are fairly new and functioning properly.

**RECOMMENDATIONS:**

- Repair flashing on standing seam metal roof above kindergarten classrooms
- Stripe 2 accessible parking spaces and aisle on staff parking; install signage
- Re-sod grass section on the north side of the building
- Install an upgraded Clock System with enough capacity to provide clocks for the entire building

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg Lot Tm: | Lot 3 / Tm 4 |
| Status: | Accepted by SDP | Team: | Tm 4 |
| Site ID: | S544001 | | |

## 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.

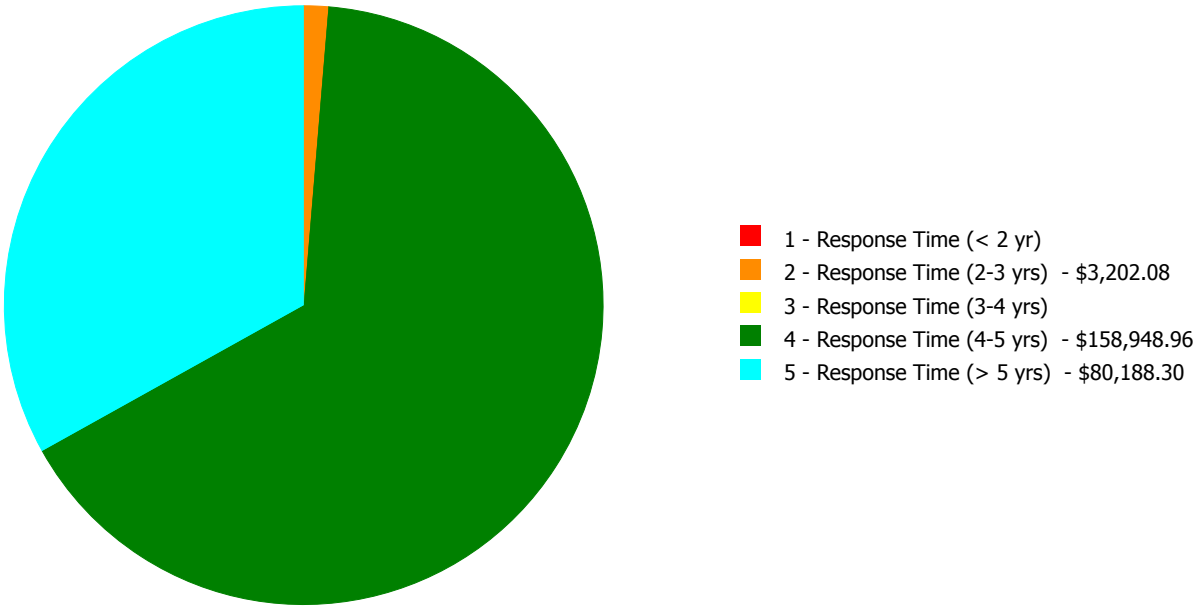
### Current Investment Requirement and Condition by Uniformat Classification

| UNIFORMAT Classification | RSLI% | FCI % | Current Repair |
|---|---|---|---|
| A10 - Foundations | 95.00 % | 0.00 % | $0.00 |
| A20 - Basement Construction | 95.00 % | 0.00 % | $0.00 |
| B10 - Superstructure | 95.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 92.22 % | 0.00 % | $0.00 |
| B30 - Roofing | 80.22 % | 0.12 % | $3,202.08 |
| C10 - Interior Construction | 92.97 % | 0.00 % | $0.00 |
| C20 - Stairs | 95.00 % | 0.00 % | $0.00 |
| C30 - Interior Finishes | 73.67 % | 0.00 % | $0.00 |
| D10 - Conveying | 85.71 % | 0.00 % | $0.00 |
| D20 - Plumbing | 84.16 % | 0.00 % | $0.00 |
| D30 - HVAC | 80.56 % | 0.00 % | $0.00 |
| D40 - Fire Protection | 85.71 % | 0.00 % | $0.00 |
| D50 - Electrical | 74.73 % | 2.76 % | $157,584.31 |
| E10 - Equipment | 85.71 % | 0.00 % | $0.00 |
| E20 - Furnishings | 87.50 % | 0.00 % | $0.00 |
| G20 - Site Improvements | 81.60 % | 5.12 % | $81,552.95 |
| G40 - Site Electrical Utilities | 83.33 % | 0.00 % | $0.00 |
| **Totals:** | **85.11 %** | **0.46 %** | **$242,339.34** |

### 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) |
|---|---|---|---|---|---|---|---|
| B544001;Willard | 97,261 | 0.32 | $0.00 | $3,202.08 | $0.00 | $157,584.31 | $0.00 |
| G544001;Grounds | 133,500 | 3.75 | $0.00 | $0.00 | $0.00 | $1,364.65 | $80,188.30 |
| **Total:** | | **0.46** | **$0.00** | **$3,202.08** | **$0.00** | **$158,948.96** | **$80,188.30** |

### Deficiencies By Priority




**Budget Estimate Total: $242,339.34**

## 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): | 97,261 |
| Year Built: | 2010 |
| Last Renovation: | |
| Replacement Value: | $50,256,330 |
| Repair Cost: | $160,786.39 |
| Total FCI: | 0.32 % |
| Total RSLI: | 85.25 % |

**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg ID: | B544001 |
| Sewage Ejector: | Yes | Status: | Accepted by SDP |
| Site ID: | S544001 | | |

## 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 | 95.00 % | 0.00 % | $0.00 |
| A20 - Basement Construction | 95.00 % | 0.00 % | $0.00 |
| B10 - Superstructure | 95.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 92.22 % | 0.00 % | $0.00 |
| B30 - Roofing | 80.22 % | 0.12 % | $3,202.08 |
| C10 - Interior Construction | 92.97 % | 0.00 % | $0.00 |
| C20 - Stairs | 95.00 % | 0.00 % | $0.00 |
| C30 - Interior Finishes | 73.67 % | 0.00 % | $0.00 |
| D10 - Conveying | 85.71 % | 0.00 % | $0.00 |
| D20 - Plumbing | 84.16 % | 0.00 % | $0.00 |
| D30 - HVAC | 80.56 % | 0.00 % | $0.00 |
| D40 - Fire Protection | 85.71 % | 0.00 % | $0.00 |
| D50 - Electrical | 74.73 % | 2.76 % | $157,584.31 |
| E10 - Equipment | 85.71 % | 0.00 % | $0.00 |
| E20 - Furnishings | 87.50 % | 0.00 % | $0.00 |
| **Totals:** | **85.25 %** | **0.32 %** | **$160,786.39** |

## 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. | 97,261 | 100 | 2010 | 2110 | | 95.00 % | 0.00 % | 95 | | | $1,789,602 |
| A1030 | Slab on Grade | $7.73 | S.F. | 97,261 | 100 | 2010 | 2110 | | 95.00 % | 0.00 % | 95 | | | $751,828 |
| A2010 | Basement Excavation | $6.55 | S.F. | 97,261 | 100 | 2010 | 2110 | | 95.00 % | 0.00 % | 95 | | | $637,060 |
| A2020 | Basement Walls | $12.70 | S.F. | 97,261 | 100 | 2010 | 2110 | | 95.00 % | 0.00 % | 95 | | | $1,235,215 |
| B1010 | Floor Construction | $75.10 | S.F. | 97,261 | 100 | 2010 | 2110 | | 95.00 % | 0.00 % | 95 | | | $7,304,301 |
| B1020 | Roof Construction | $13.88 | S.F. | 97,261 | 100 | 2010 | 2110 | | 95.00 % | 0.00 % | 95 | | | $1,349,983 |
| B2010 | Exterior Walls | $36.91 | S.F. | 97,261 | 100 | 2010 | 2110 | | 95.00 % | 0.00 % | 95 | | | $3,589,904 |
| B2020 | Exterior Windows | $18.01 | S.F. | 97,261 | 40 | 2010 | 2050 | | 87.50 % | 0.00 % | 35 | | | $1,751,671 |
| B2030 | Exterior Doors | $1.45 | S.F. | 97,261 | 25 | 2010 | 2035 | | 80.00 % | 0.00 % | 20 | | | $141,028 |
| B3010105 | Built-Up | $37.76 | S.F. | 27,160 | 20 | 2010 | 2030 | | 75.00 % | 0.00 % | 15 | | | $1,025,562 |
| B3010120 | Single Ply Membrane | $38.73 | S.F. | | 20 | | | | 0.00 % | 0.00 % | | | | $0 |
| B3010130 | Preformed Metal Roofing | $54.22 | S.F. | 31,870 | 30 | 2010 | 2040 | | 83.33 % | 0.19 % | 25 | | $3,202.08 | $1,727,991 |
| B3010140 | Shingle & Tile | $38.73 | S.F. | | 25 | 2010 | 2035 | | 80.00 % | 0.00 % | 20 | | | $0 |
| B3020 | Roof Openings | $0.06 | S.F. | 97,261 | 20 | 2010 | 2030 | | 75.00 % | 0.00 % | 15 | | | $5,836 |
| C1010 | Partitions | $17.91 | S.F. | 97,261 | 100 | 2010 | 2110 | | 95.00 % | 0.00 % | 95 | | | $1,741,945 |
| C1020 | Interior Doors | $3.51 | S.F. | 97,261 | 40 | 2010 | 2050 | | 87.50 % | 0.00 % | 35 | | | $341,386 |
| C1030 | Fittings | $3.12 | S.F. | 97,261 | 40 | 2010 | 2050 | | 87.50 % | 0.00 % | 35 | | | $303,454 |
| C2010 | Stair Construction | $1.41 | S.F. | 97,261 | 100 | 2010 | 2110 | | 95.00 % | 0.00 % | 95 | | | $137,138 |

# Site Assessment Report - B544001;Willard

| System Code | System Description | Unit Price $ | UoM | Qty | Life | Year Installed | Calc Next Renewal Year | Next Renewal Year | RSLI% | FCI% | RSL | eCR | Deficiency $ | Replacement Value $ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C3010230 | Paint & Covering | $13.21 | S.F. | 97,261 | 10 | 2010 | 2020 | | 50.00 % | 0.00 % | 5 | | | $1,284,818 |
| C3010231 | Vinyl Wall Covering | $0.97 | S.F. | 97,261 | 15 | 2010 | 2025 | | 66.67 % | 0.00 % | 10 | | | $94,343 |
| C3010232 | Wall Tile | $2.63 | S.F. | 97,261 | 30 | 2010 | 2040 | | 83.33 % | 0.00 % | 25 | | | $255,796 |
| C3020411 | Carpet | $7.30 | S.F. | 2,400 | 10 | 2010 | 2020 | | 50.00 % | 0.00 % | 5 | | | $17,520 |
| C3020412 | Terrazzo & Tile | $75.52 | S.F. | 11,750 | 50 | 2010 | 2060 | | 90.00 % | 0.00 % | 45 | | | $887,360 |
| C3020413 | Vinyl Flooring | $9.68 | S.F. | 50,840 | 20 | 2010 | 2030 | | 75.00 % | 0.00 % | 15 | | | $492,131 |
| C3020414 | Wood Flooring | $22.27 | S.F. | 6,000 | 25 | 2010 | 2035 | | 80.00 % | 0.00 % | 20 | | | $133,620 |
| C3020415 | Concrete Floor Finishes | $0.97 | S.F. | 6,800 | 50 | 2010 | 2060 | | 90.00 % | 0.00 % | 45 | | | $6,596 |
| C3030 | Ceiling Finishes | $20.97 | S.F. | 97,261 | 25 | 2010 | 2035 | | 80.00 % | 0.00 % | 20 | | | $2,039,563 |
| D1010 | Elevators and Lifts | $1.53 | S.F. | 97,261 | 35 | 2010 | 2045 | | 85.71 % | 0.00 % | 30 | | | $148,809 |
| D2010 | Plumbing Fixtures | $13.52 | S.F. | 97,261 | 35 | 2010 | 2045 | | 85.71 % | 0.00 % | 30 | | | $1,314,969 |
| D2020 | Domestic Water Distribution | $1.68 | S.F. | 97,261 | 25 | 2010 | 2035 | | 80.00 % | 0.00 % | 20 | | | $163,398 |
| D2030 | Sanitary Waste | $2.90 | S.F. | 97,261 | 25 | 2010 | 2035 | | 80.00 % | 0.00 % | 20 | | | $282,057 |
| D2040 | Rain Water Drainage | $2.32 | S.F. | 97,261 | 30 | 2010 | 2040 | | 83.33 % | 0.00 % | 25 | | | $225,646 |
| D3020 | Heat Generating Systems | $18.67 | S.F. | 97,261 | 35 | 2010 | 2045 | | 85.71 % | 0.00 % | 30 | | | $1,815,863 |
| D3030 | Cooling Generating Systems | $24.48 | S.F. | 97,261 | 30 | 2010 | 2040 | | 83.33 % | 0.00 % | 25 | | | $2,380,949 |
| D3040 | Distribution Systems | $42.99 | S.F. | 97,261 | 25 | 2010 | 2035 | | 80.00 % | 0.00 % | 20 | | | $4,181,250 |
| D3050 | Terminal & Package Units | $11.60 | S.F. | 97,261 | 20 | 2010 | 2030 | | 75.00 % | 0.00 % | 15 | | | $1,128,228 |
| D3060 | Controls & Instrumentation | $13.50 | S.F. | 97,261 | 20 | 2010 | 2030 | | 75.00 % | 0.00 % | 15 | | | $1,313,024 |
| D4010 | Sprinklers | $7.05 | S.F. | 97,261 | 35 | 2010 | 2045 | | 85.71 % | 0.00 % | 30 | | | $685,690 |
| D4020 | Standpipes | $1.01 | S.F. | 97,261 | 35 | 2010 | 2045 | | 85.71 % | 0.00 % | 30 | | | $98,234 |
| D5010 | Electrical Service/Distribution | $9.70 | S.F. | 97,261 | 30 | 2010 | 2040 | | 83.33 % | 0.00 % | 25 | | | $943,432 |
| D5020 | Lighting and Branch Wiring | $34.68 | S.F. | 97,261 | 20 | 2010 | 2030 | | 75.00 % | 0.00 % | 15 | | | $3,373,011 |
| D5030 | Communications and Security | $12.99 | S.F. | 97,261 | 15 | 2010 | 2025 | 2025 | 66.67 % | 12.47 % | 10 | | $157,584.31 | $1,263,420 |
| D5090 | Other Electrical Systems | $1.41 | S.F. | 97,261 | 30 | 2010 | 2040 | | 83.33 % | 0.00 % | 25 | | | $137,138 |
| E1020 | Institutional Equipment | $4.82 | S.F. | 97,261 | 35 | 2010 | 2045 | | 85.71 % | 0.00 % | 30 | | | $468,798 |
| E1090 | Other Equipment | $11.10 | S.F. | 97,261 | 35 | 2010 | 2045 | | 85.71 % | 0.00 % | 30 | | | $1,079,597 |
| E2010 | Fixed Furnishings | $2.13 | S.F. | 97,261 | 40 | 2010 | 2050 | | 87.50 % | 0.00 % | 35 | | | $207,166 |
| | | | | | | | | **Total** | **85.25 %** | **0.32 %** | | | **$160,786.39** | **$50,256,330** |

## System Notes

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

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

**Note:** Paint 95%
Acoustic panels 5%

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

**Note:** VCT 65%
Ceramic tile 4%
Terrazzo 11%
Wood (artificial) 8%
Carpet 3%
Concrete 9%

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

**Note:** ACT 60%
Drywall 10%
Exposed/painted 30%

## Renewal Schedule

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

*Inflation Rate: 3%*

| System | Current Deficiencies | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total:** | **$160,786** | **$0** | **$0** | **$0** | **$0** | **$1,660,744** | **$0** | **$0** | **$0** | **$0** | **$2,007,192** | **$3,828,721** |
| *** 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** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B2020 - Exterior Windows** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B2030 - Exterior Doors** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B30 - Roofing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010 - Roof Coverings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010105 - Built-Up** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010120 - Single Ply Membrane** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010130 - Preformed Metal Roofing** | $3,202 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$3,202** |
| **B3010140 - Shingle & Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3020 - Roof Openings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C - Interiors** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C10 - Interior Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C1010 - Partitions** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

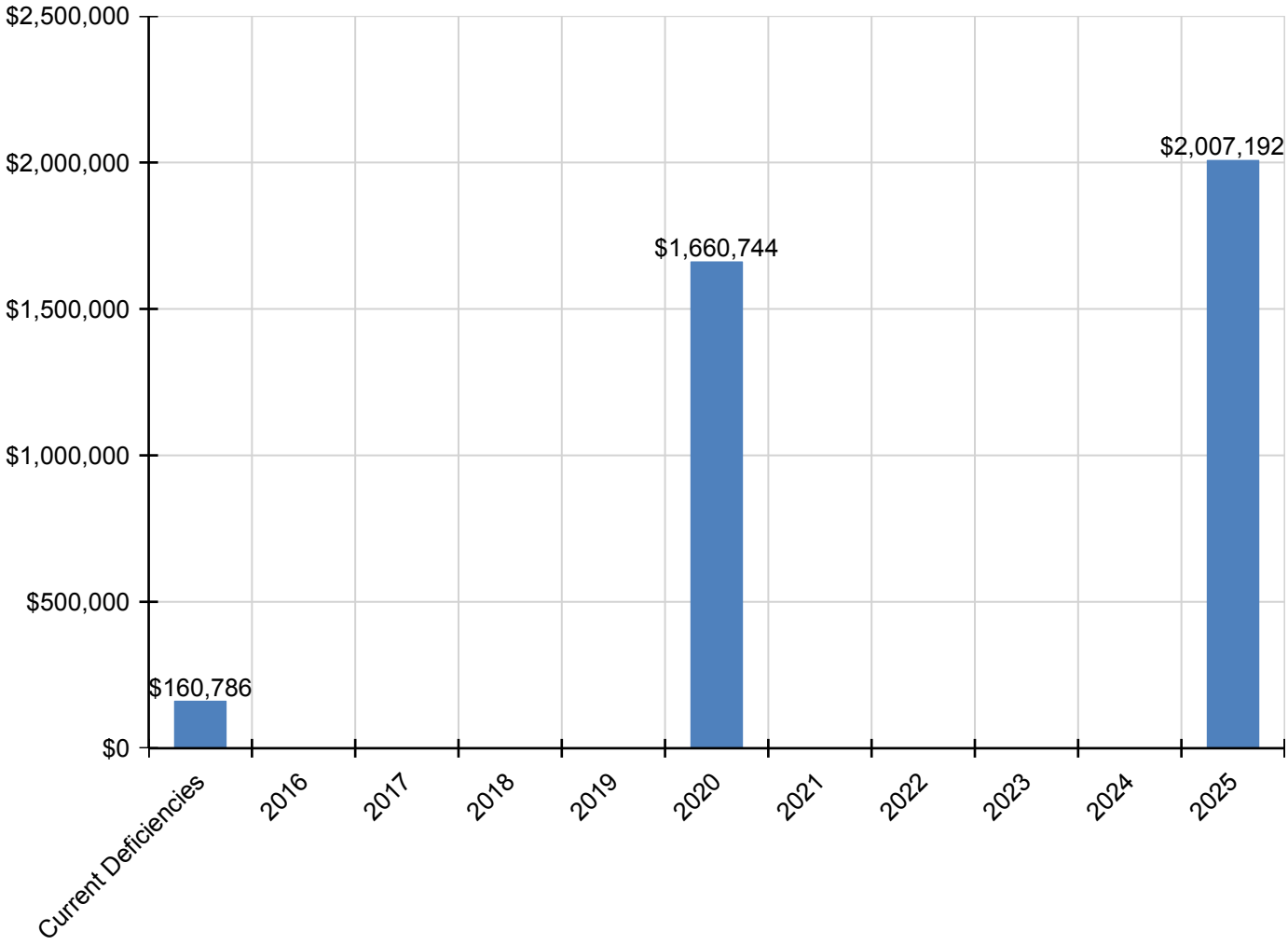
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **C1020 - Interior Doors** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C1030 - Fittings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C20 - Stairs** | $0 | $0 | $0 | $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** | $0 | $0 | $0 | $0 | $0 | $1,638,402 | $0 | $0 | $0 | $0 | $0 | **$1,638,402** |
| **C3010231 - Vinyl Wall Covering** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $139,468 | **$139,468** |
| **C3010232 - Wall Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020 - Floor Finishes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020411 - Carpet** | $0 | $0 | $0 | $0 | $0 | $22,342 | $0 | $0 | $0 | $0 | $0 | **$22,342** |
| **C3020412 - Terrazzo & Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020413 - Vinyl Flooring** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **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** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D - Services** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D10 - Conveying** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D1010 - Elevators and Lifts** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D20 - Plumbing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D2010 - Plumbing Fixtures** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D2020 - Domestic Water Distribution** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D2030 - Sanitary Waste** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D2040 - Rain Water Drainage** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D30 - HVAC** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3020 - Heat Generating Systems** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3030 - Cooling Generating Systems** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3040 - Distribution Systems** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3050 - Terminal & Package Units** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3060 - Controls & Instrumentation** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D40 - Fire Protection** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D4010 - Sprinklers** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D4020 - Standpipes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **D50 - Electrical** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D5010 - Electrical Service/Distribution** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D5020 - Lighting and Branch Wiring** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D5030 - Communications and Security** | $157,584 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,867,724 | **$2,025,308** |
| **D5090 - Other Electrical Systems** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E - Equipment & Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E10 - Equipment** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E1020 - Institutional Equipment** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E1090 - Other Equipment** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E20 - Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E2010 - Fixed Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

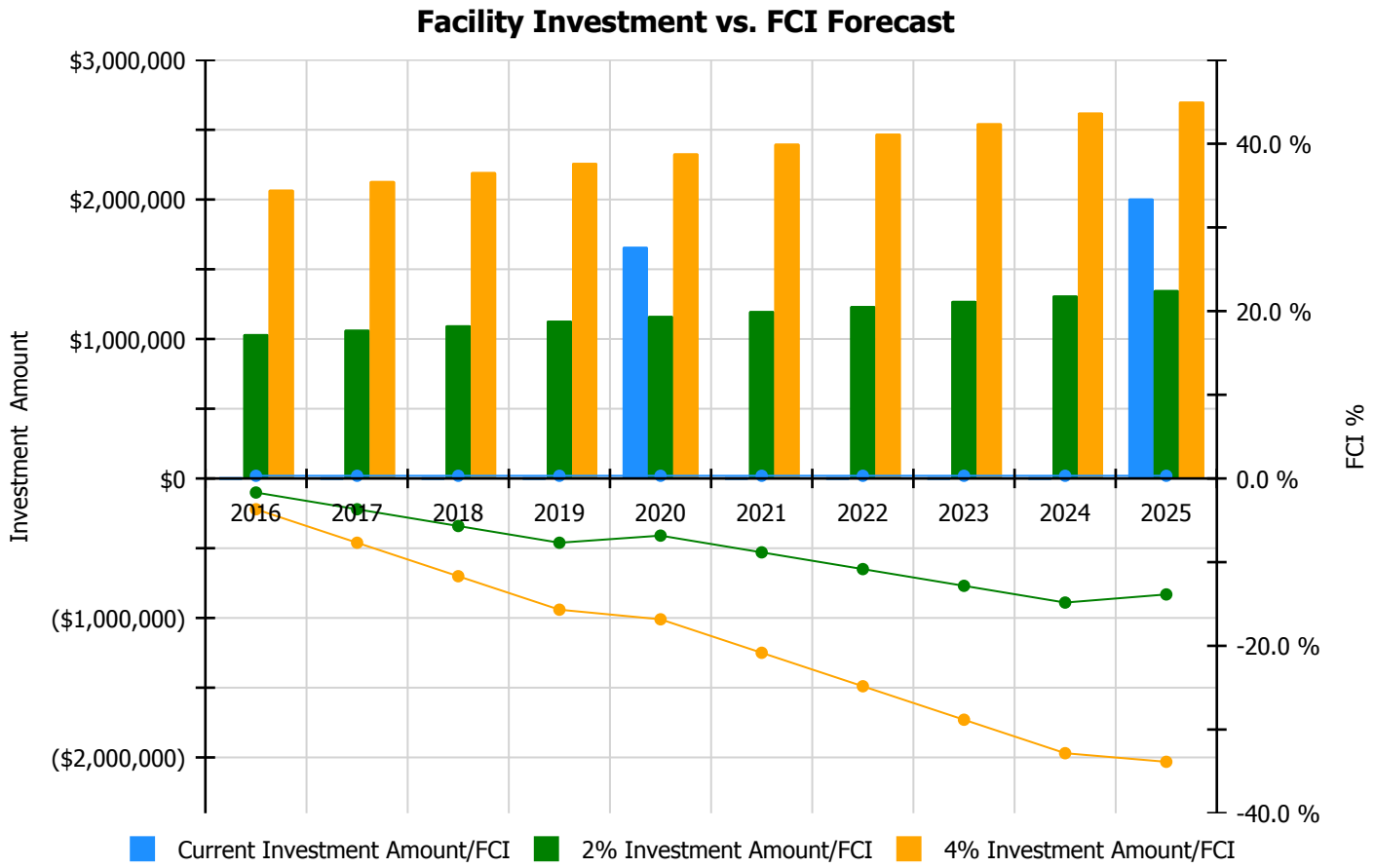
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



## 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:

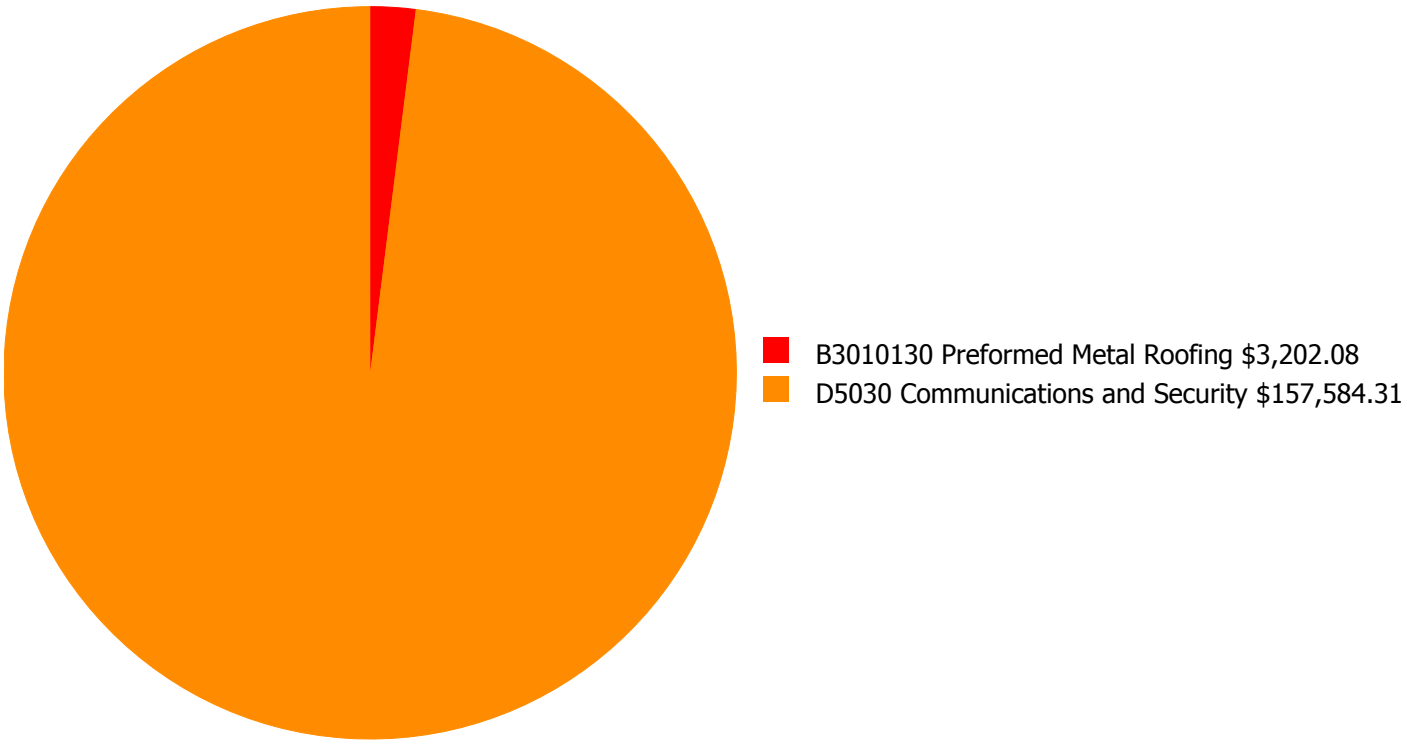
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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




| Year | Investment Amount Current FCI - 0.32% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $1,035,280.00 | -1.68 % | $2,070,561.00 | -3.68 % |
| 2017 | $0 | $1,066,339.00 | -3.68 % | $2,132,678.00 | -7.68 % |
| 2018 | $0 | $1,098,329.00 | -5.68 % | $2,196,658.00 | -11.68 % |
| 2019 | $0 | $1,131,279.00 | -7.68 % | $2,262,558.00 | -15.68 % |
| 2020 | $1,660,744 | $1,165,217.00 | -6.83 % | $2,330,434.00 | -16.83 % |
| 2021 | $0 | $1,200,174.00 | -8.83 % | $2,400,347.00 | -20.83 % |
| 2022 | $0 | $1,236,179.00 | -10.83 % | $2,472,358.00 | -24.83 % |
| 2023 | $0 | $1,273,264.00 | -12.83 % | $2,546,529.00 | -28.83 % |
| 2024 | $0 | $1,311,462.00 | -14.83 % | $2,622,924.00 | -32.83 % |
| 2025 | $2,007,192 | $1,350,806.00 | -13.86 % | $2,701,612.00 | -33.86 % |
| **Total:** | **$3,667,935** | **$11,868,329.00** | | **$23,736,659.00** | |

## Deficiency Summary by System

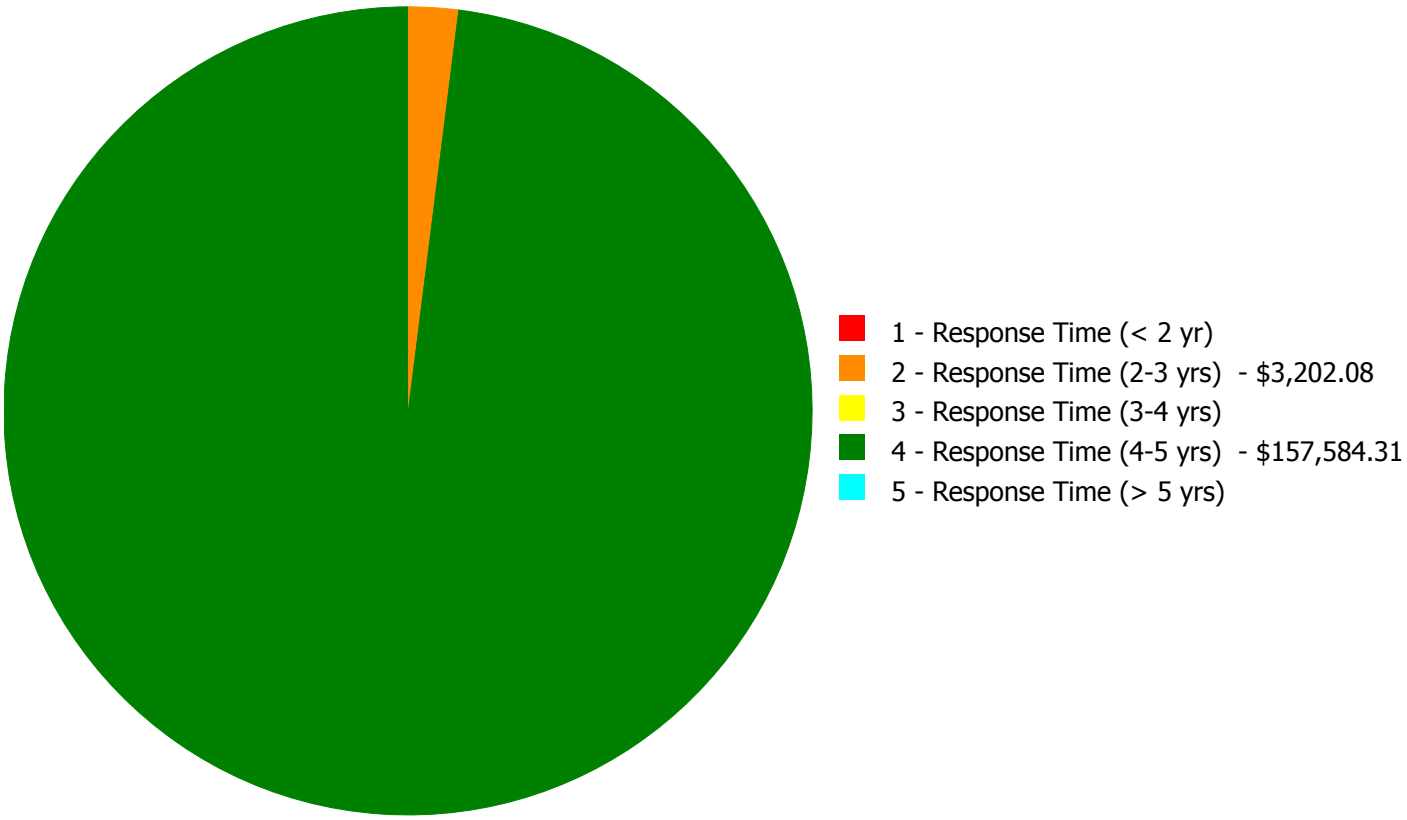
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $160,786.39**

## Deficiency Summary by Priority

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




**Budget Estimate Total: $160,786.39**

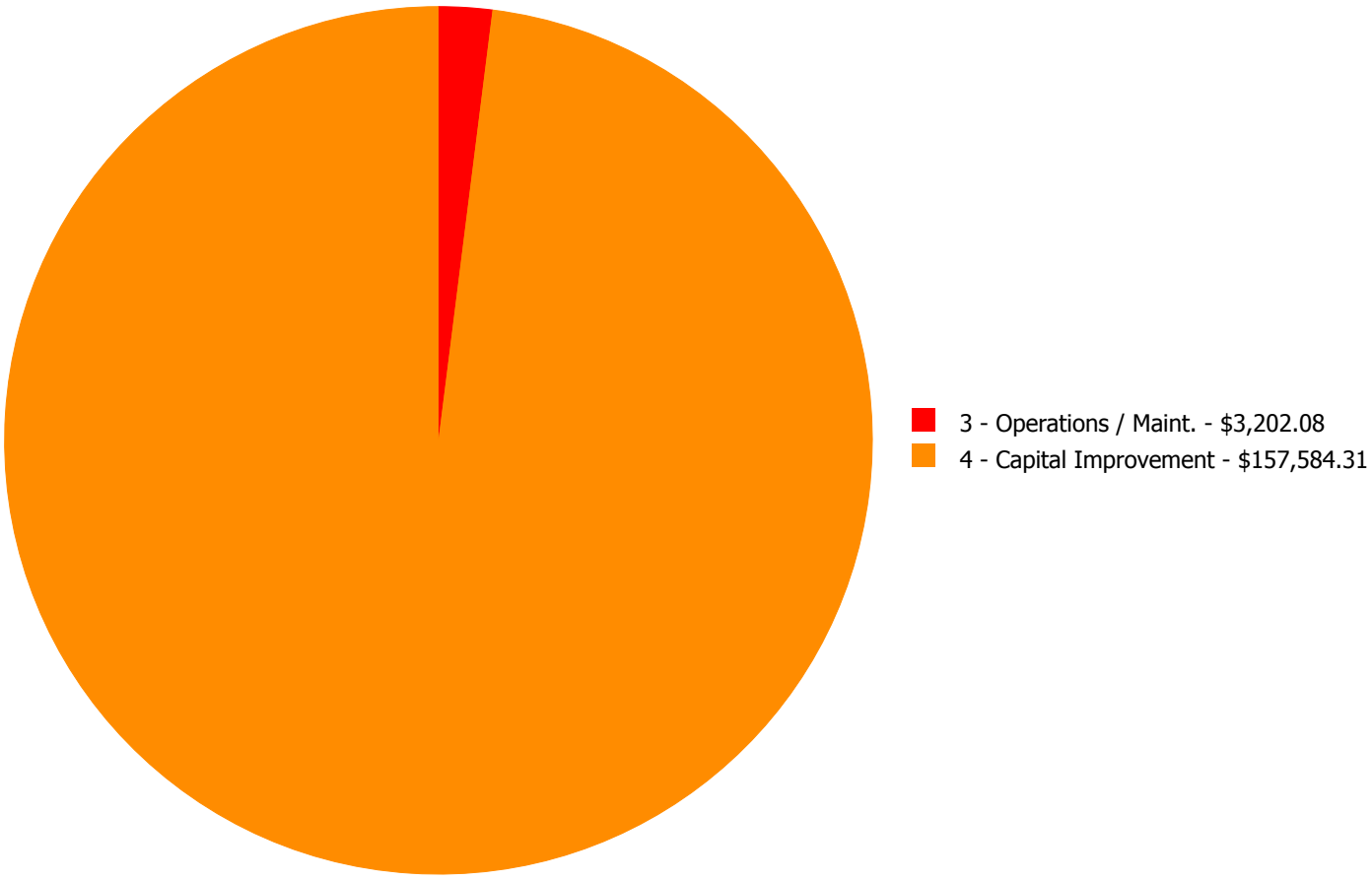
## Deficiency By Priority Investment Table

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 |
|---|---|---|---|---|---|---|---|
| B3010130 | Preformed Metal Roofing | $0.00 | $3,202.08 | $0.00 | $0.00 | $0.00 | $3,202.08 |
| D5030 | Communications and Security | $0.00 | $0.00 | $0.00 | $157,584.31 | $0.00 | $157,584.31 |
| | **Total:** | $0.00 | $3,202.08 | $0.00 | $157,584.31 | $0.00 | $160,786.39 |

## Deficiency Summary by Category

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




**Budget Estimate Total: $160,786.39**

## Deficiency Details by Priority

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

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

**System: B3010130 - Preformed Metal Roofing**

**Location:** Exterior

**Distress:** Failing

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

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

**Correction:** Rain gutter replacement - select the type of material and number of mitres

**Qty:** 84.00

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

**Estimate:** $3,202.08

**Assessor Name:** Wlodek Pieczonka

**Date Created:** 01/25/2016

**Notes:** Repair flashing on standing seam metal roof above kindergarten classrooms

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

**System: D5030 - Communications and Security**


**Location:** throughout the building

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

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

**Qty:** 0.00

**Unit of Measure:** Ea.

**Estimate:** $157,584.31

**Assessor Name:** Wlodek Pieczonka

**Date Created:** 12/16/2015

**Notes:** Install an upgraded Clock System with enough capacity to provide clocks for the entire building.
Note: A multiplier of 1.4 was used (instead of 1.0) to cover the additional cost of other related construction.

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D1010 Elevators and Lifts | Hydraulic, passenger elevator, 3000 lb, 2 floors, 100 FPM | 1.00 | Ea. | building interior | | | | | 30 | 2010 | 2040 | $73,815.00 | $81,196.50 |
| D3020 Heat Generating Systems | Boiler, gas/oil combination, cast iron, steam, gross output, 2700 MBH, includes burners, controls and insulated jacket, packaged | 2.00 | Ea. | Mechanical Room 168A | HB Smith | 28HE-S/W-10 | | | 35 | 2010 | 2045 | $50,376.70 | $110,828.74 |
| D3020 Heat Generating Systems | Boiler, gas/oil combination, cast iron, steam, gross output, 2700 MBH, includes burners, controls and insulated jacket, packaged | 2.00 | Ea. | Mechanical Room 168A | HB Smith | 28HE-S/W-10 | | | 35 | 2010 | 2045 | $50,376.70 | $110,828.74 |
| D3030 Cooling Generating Systems | Cooling tower, packaged unit, galvanized steel, blow through, centrifugal type, 200 ton, includes standard controls, excludes pumps and piping | 2.00 | Ea. | Roof | Evapco | LSTB 5-512 | 8-354196 | | 18 | 2010 | 2028 | $34,884.30 | $76,745.46 |
| D3030 Cooling Generating Systems | Cooling tower, packaged unit, galvanized steel, blow through, centrifugal type, 200 ton, includes standard controls, excludes pumps and piping | 2.00 | Ea. | Roof | Evapco | LSTB 5-512 | 8-354195 | | 18 | 2010 | 2028 | $34,884.30 | $76,745.46 |
| D3030 Cooling Generating Systems | Water chiller, screw liquid chiller, packaged unit, water cooled, 200 ton, includes standard controls, excludes water tower | 2.00 | Ea. | Mechanical Room 168A | Carrier | 30HXC206RZ-661BA | 4509Q17993 | | 20 | 2010 | 2030 | $114,064.50 | $250,941.90 |
| D3030 Cooling Generating Systems | Water chiller, screw liquid chiller, packaged unit, water cooled, 200 ton, includes standard controls, excludes water tower | 2.00 | Ea. | Mechanical Room 168A | Carrier | 30HXC206RZ-661BA | 4509Q17993 | | 20 | 2010 | 2030 | $114,064.50 | $250,941.90 |
| D3040 Distribution Systems | Air handling unit, packaged weatherproof, with cooling/heating coil section, filters, mixing box, constant volume, single zone, 10,000 CFM, cooling coils may be chilled water or DX, heating coils may be hot water, steam or electric | 1.00 | Ea. | Roof | Annex Air | ERP-E-07-HW05-C-H | 1463-01-0110 | | 25 | 2010 | 2035 | $69,052.50 | $75,957.75 |
| D3040 Distribution Systems | Air handling unit, packaged weatherproof, with cooling/heating coil section, filters, mixing box, constant volume, single zone, 15,000 CFM, cooling coils may be chilled water or DX, heating coils may be hot water, steam or electric | 1.00 | Ea. | Roof | Racan Carrier | A2D-58/74-DO | 702072-001 | | 25 | 2010 | 2035 | $99,742.50 | $109,716.75 |
| D3040 Distribution Systems | Air-handling unit, built-up, horizontal or vertical, blow-thru fan, multizone, 7500 CFM, with cooling/heating coil section, filters, mixing box | 3.00 | Ea. | Mechanical Room 119 | Carrier | 39MN17C011L2 | 4609U24727 | | 25 | 2010 | 2035 | $20,153.10 | $66,505.23 |
| D3040 Distribution Systems | Air-handling unit, built-up, horizontal or vertical, blow-thru fan, multizone, 7500 CFM, with cooling/heating coil section, filters, mixing box | 3.00 | Ea. | Mechanical Room 219 | Carrier | 39MN17C011L2 | 4609U24731 | | 25 | 2010 | 2035 | $20,153.10 | $66,505.23 |
| D3040 Distribution Systems | Air-handling unit, built-up, horizontal or vertical, blow-thru fan, multizone, 7500 CFM, with cooling/heating coil section, filters, mixing box | 3.00 | Ea. | Mechanical Room 119 | Carrier | 39MN17C011L2 | 4609U24720 | | 25 | 2010 | 2035 | $20,153.10 | $66,505.23 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D3040 Distribution Systems | Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 10 H.P., to 600 GPM, 5" size | 4.00 | Ea. | Mechanical Room 168A | Bell and Gossett | 1510 BF | C094726-04K90 | | 25 | 2010 | 2035 | $19,608.00 | $86,275.20 |
| D3040 Distribution Systems | Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 10 H.P., to 600 GPM, 5" size | 2.00 | Ea. | Mechanical Room 168A | Bell and Gossett | 1510 BF | C094722-02K90 | | 25 | 2010 | 2035 | $19,608.00 | $43,137.60 |
| D3040 Distribution Systems | Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 10 H.P., to 600 GPM, 5" size | 4.00 | Ea. | Mechanical Room 168A | Bell and Gossett | 1510 BF | C094726-01K90 | | 25 | 2010 | 2035 | $19,608.00 | $86,275.20 |
| D3040 Distribution Systems | Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 10 H.P., to 600 GPM, 5" size | 4.00 | Ea. | Mechanical Room 168A | Bell and Gossett | 1510 BF | C094726-03K90 | | 25 | 2010 | 2035 | $19,608.00 | $86,275.20 |
| D3040 Distribution Systems | Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 10 H.P., to 600 GPM, 5" size | 4.00 | Ea. | Mechanical Room 168A | Bell and Gossett | 1510 BF | C094726-02K90 | | 25 | 2010 | 2035 | $19,608.00 | $86,275.20 |
| D3040 Distribution Systems | Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 10 H.P., to 600 GPM, 5" size | 2.00 | Ea. | Mechanical Room 168A | Bell and Gossett | 1510 BF | C094722-01K90 | | 25 | 2010 | 2035 | $19,608.00 | $43,137.60 |
| D3040 Distribution Systems | Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 10 H.P., to 600 GPM, 5" size | 2.00 | Ea. | Mechanical Room 168A | Bell and Gossett | 1510 BF | C094724-02L90 | | 25 | 2010 | 2035 | $19,608.00 | $43,137.60 |
| D3040 Distribution Systems | Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 10 H.P., to 600 GPM, 5" size | 2.00 | Ea. | Mechanical Room 168A | Bell and Gossett | 1510 BF | C094724-01L90 | | 25 | 2010 | 2035 | $19,608.00 | $43,137.60 |
| D5010 Electrical Service/Distribution | Load interrupter switch, 2 position, 400 kVA & above, 13.8 kV, 600 amp w/CLF fuses, NEMA 1 | 1.00 | Ea. | electrical room | | | | | 30 | 2010 | 2040 | $42,849.00 | $47,133.90 |
| D5010 Electrical Service/Distribution | Motor control center, structures, 22,000 rms, takes any combination of starters, 600 amp, up to 72" high | 4.00 | Ea. | electrical room | | | | | 30 | 2010 | 2040 | $3,663.90 | $16,121.16 |
| D5010 Electrical Service/Distribution | Switchboards, distribution section, aluminum bus bars, 4 W, 120/208 or 277/480 V, 1600 amp, excl breakers | 3.00 | Ea. | electrical room | | | | | 30 | 2010 | 2040 | $7,358.85 | $24,284.21 |
| D5010 Electrical Service/Distribution | Switchboards, no main disconnect, 4 wire, 277/480 V, 3000 amp, incl CT compartment, excl CT's or PT's | 1.00 | Ea. | electrical room | | | | | 30 | 2010 | 2040 | $12,792.60 | $14,071.86 |
| D5090 Other Electrical Systems | Generator set, diesel, 3 phase 4 wire, 277/480 V, 125 kW, incl battery, charger, muffler, & day tank, excl conduit, wiring, & concrete | 1.00 | Ea. | electrical room | | | | | 30 | 2010 | 2040 | $50,797.80 | $55,877.58 |
| | | | | | | | | | | | | **Total:** | **$2,018,558.80** |

## 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): | 133,500 |
| Year Built: | 2010 |
| Last Renovation: | |
| Replacement Value: | $2,172,837 |
| Repair Cost: | $81,552.95 |
| Total FCI: | 3.75 % |
| Total RSLI: | 82.07 % |

**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Bldg ID: | S544001 | Site ID: | S544001 |

## 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 | 81.60 % | 5.12 % | $81,552.95 |
| G40 - Site Electrical Utilities | 83.33 % | 0.00 % | $0.00 |
| **Totals:** | **82.07 %** | **3.75 %** | **$81,552.95** |

## 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 | 2010 | 2040 | | 83.33 % | 0.00 % | 25 | | | $0 |
| G2020 | Parking Lots | $7.65 | S.F. | 46,600 | 30 | 2010 | 2040 | | 83.33 % | 0.38 % | 25 | | $1,364.65 | $356,490 |
| G2030 | Pedestrian Paving | $11.52 | S.F. | 42,000 | 40 | 2010 | 2050 | | 87.50 % | 0.00 % | 35 | | | $483,840 |
| G2040 | Site Development | $4.36 | S.F. | 133,500 | 25 | 2010 | 2035 | | 80.00 % | 0.00 % | 20 | | | $582,060 |
| G2050 | Landscaping & Irrigation | $3.78 | S.F. | 44,900 | 15 | 2010 | 2025 | | 66.67 % | 47.25 % | 10 | | $80,188.30 | $169,722 |
| G4020 | Site Lighting | $3.58 | S.F. | 133,500 | 30 | 2010 | 2040 | 2040 | 83.33 % | 0.00 % | 25 | | | $477,930 |
| G4030 | Site Communications & Security | $0.77 | S.F. | 133,500 | 30 | 2010 | 2040 | 2040 | 83.33 % | 0.00 % | 25 | | | $102,795 |
| | | | | | | | | **Total** | **82.07 %** | **3.75 %** | | | **$81,552.95** | **$2,172,837** |

## 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.

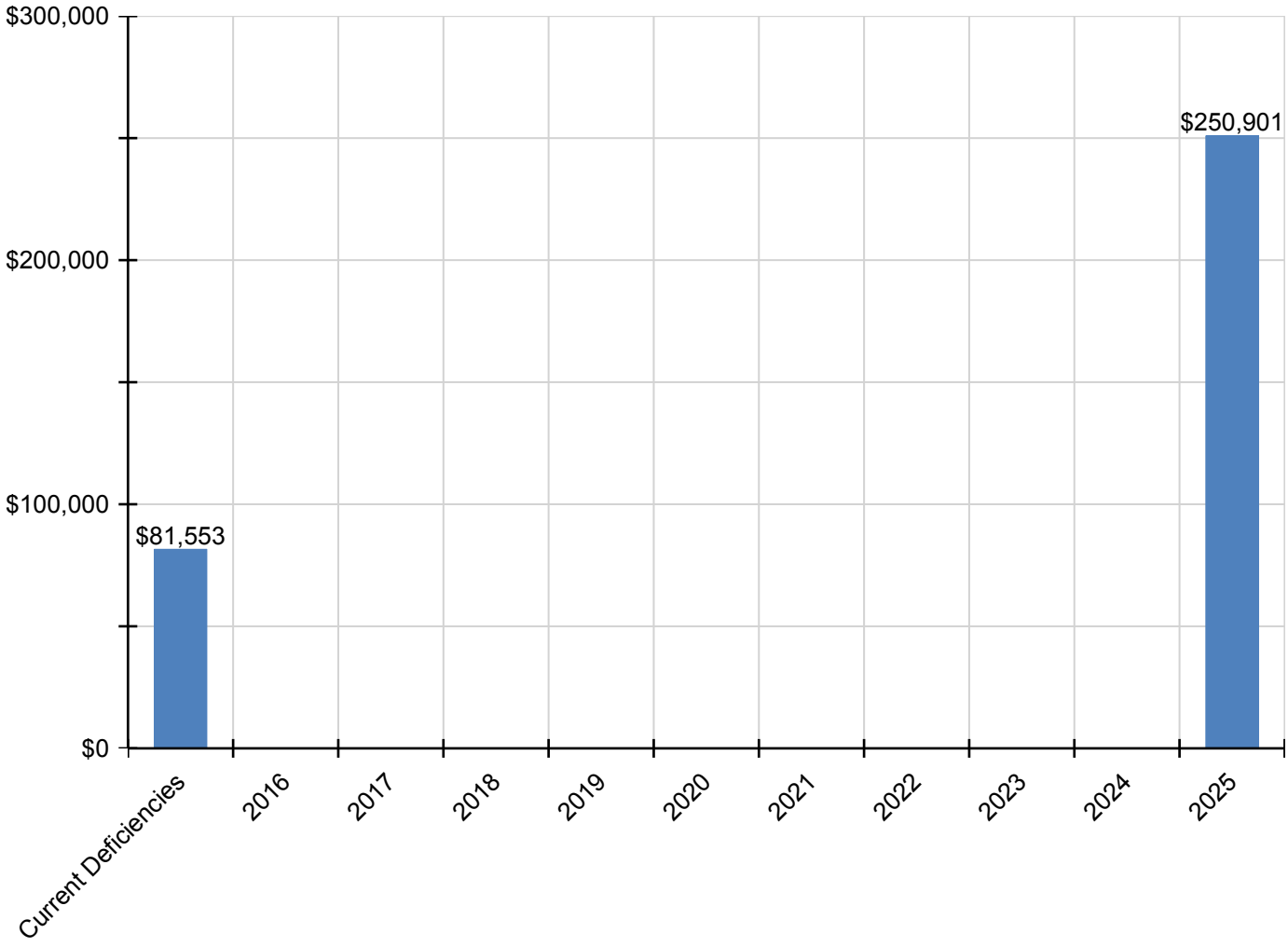
*Inflation Rate: 3%*

| System | Current Deficiencies | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total:** | **$81,553** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$250,901** | **$332,454** |
| **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** | $1,365 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,365** |
| **G2030 - Pedestrian Paving** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G2040 - Site Development** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G2050 - Landscaping & Irrigation** | $80,188 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $250,901 | **$331,089** |
| **G40 - Site Electrical Utilities** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G4020 - Site Lighting** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G4030 - Site Communications & Security** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

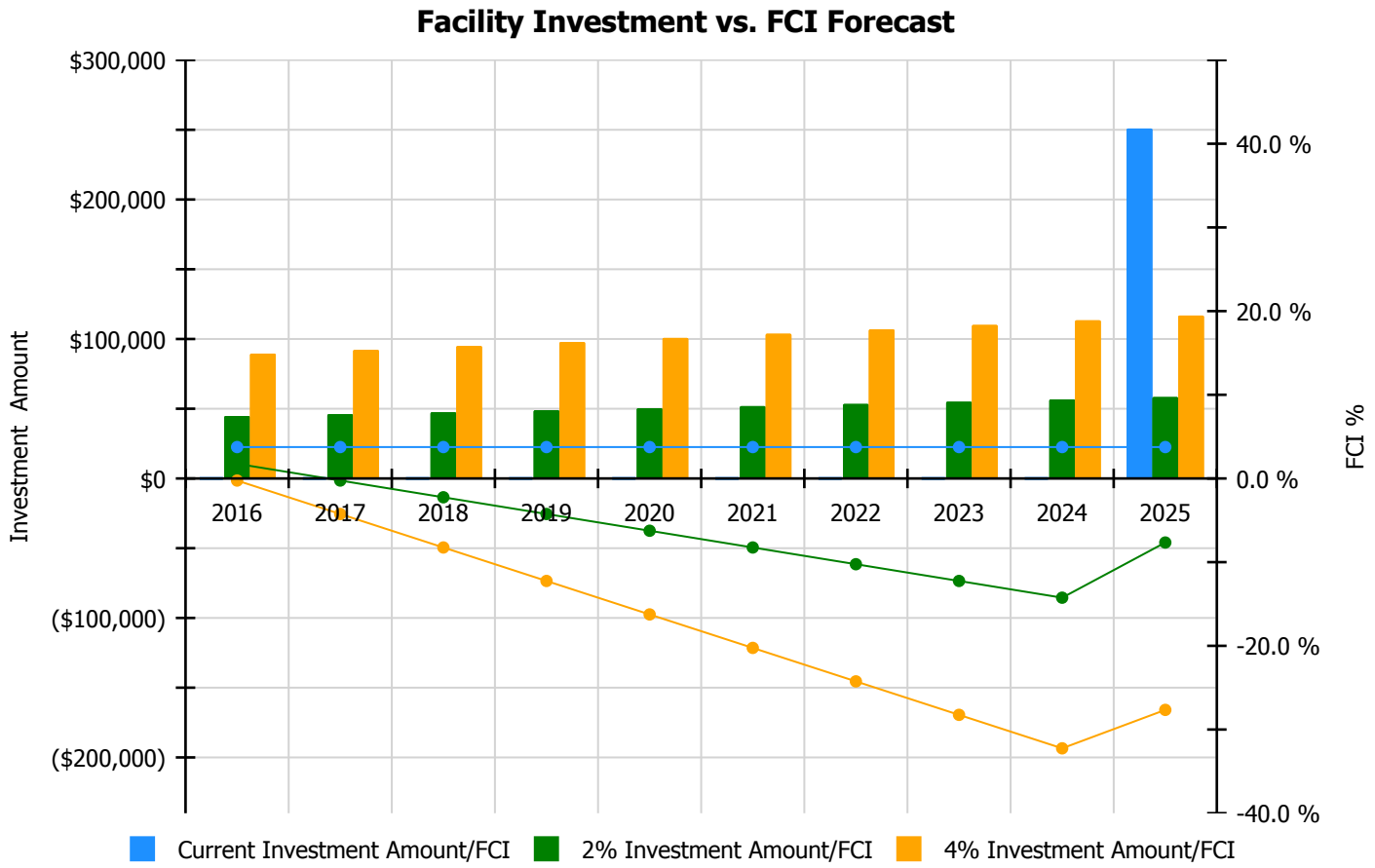
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



## 10 Year FCI Forecast by Investment Scenario

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

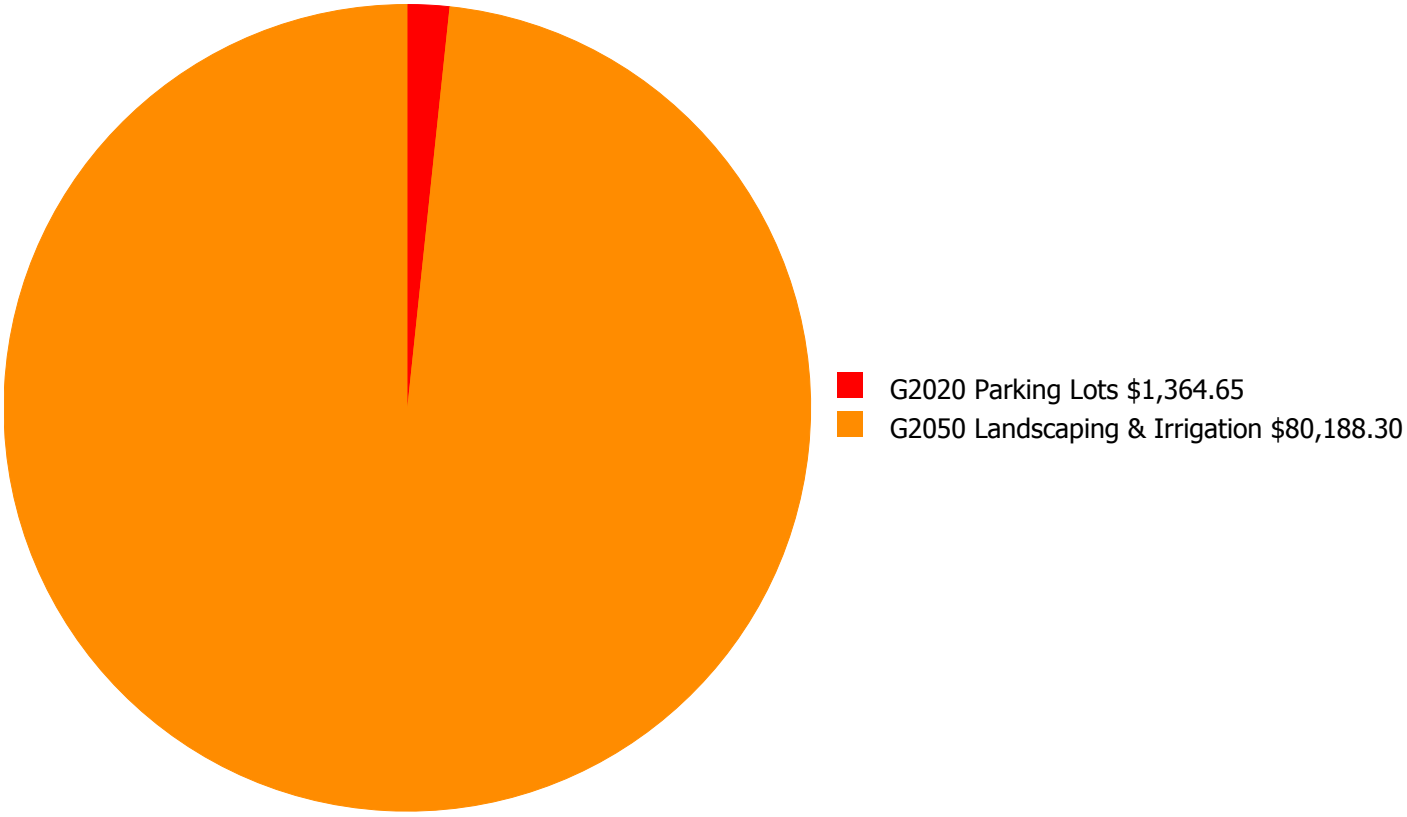
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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




| Year | Investment Amount Current FCI - 3.75% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $44,760.00 | 1.75 % | $89,521.00 | -0.25 % |
| 2017 | $0 | $46,103.00 | -0.25 % | $92,207.00 | -4.25 % |
| 2018 | $0 | $47,486.00 | -2.25 % | $94,973.00 | -8.25 % |
| 2019 | $0 | $48,911.00 | -4.25 % | $97,822.00 | -12.25 % |
| 2020 | $0 | $50,378.00 | -6.25 % | $100,757.00 | -16.25 % |
| 2021 | $0 | $51,890.00 | -8.25 % | $103,779.00 | -20.25 % |
| 2022 | $0 | $53,446.00 | -10.25 % | $106,893.00 | -24.25 % |
| 2023 | $0 | $55,050.00 | -12.25 % | $110,099.00 | -28.25 % |
| 2024 | $0 | $56,701.00 | -14.25 % | $113,402.00 | -32.25 % |
| 2025 | $250,901 | $58,402.00 | -7.65 % | $116,804.00 | -27.65 % |
| **Total:** | **$250,901** | **$513,127.00** | | **$1,026,257.00** | |

## Deficiency Summary by System

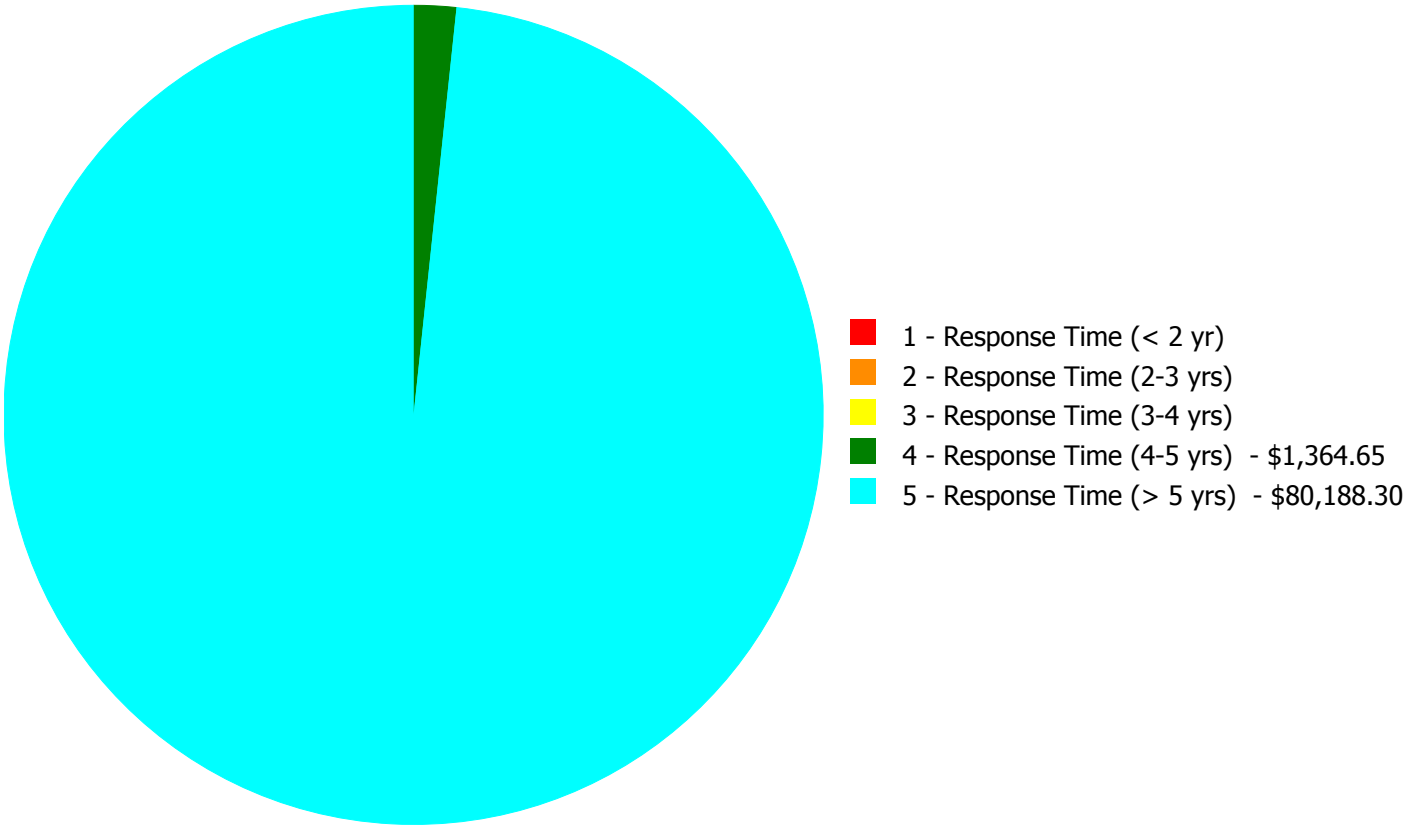
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $81,552.95**

## 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: $81,552.95**

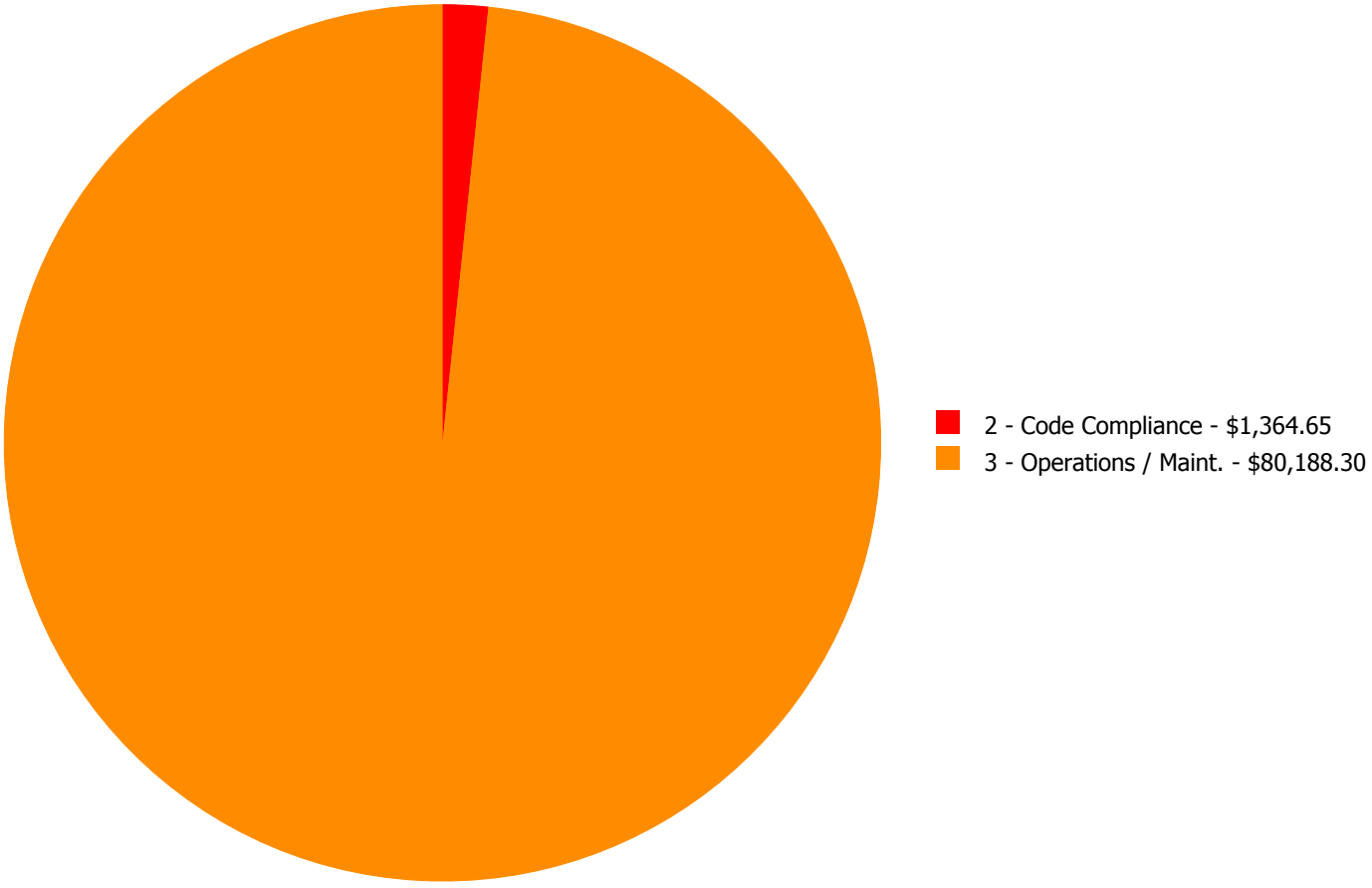
## Deficiency By Priority Investment Table

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

| System Code | System Description | 1 - Response Time (< 2 yr) | 2 - Response Time (2-3 yrs) | 3 - Response Time (3-4 yrs) | 4 - Response Time (4-5 yrs) | 5 - Response Time (> 5 yrs) | Total |
|---|---|---|---|---|---|---|---|
| G2020 | Parking Lots | $0.00 | $0.00 | $0.00 | $1,364.65 | $0.00 | $1,364.65 |
| G2050 | Landscaping & Irrigation | $0.00 | $0.00 | $0.00 | $0.00 | $80,188.30 | $80,188.30 |
| | **Total:** | $0.00 | $0.00 | $0.00 | $1,364.65 | $80,188.30 | $81,552.95 |

## 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: $81,552.95**

## Deficiency Details by Priority

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

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

**System: G2020 - Parking Lots**

**Location:** Grounds

**Distress:** Accessibility

**Category:** 2 - Code Compliance

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

**Correction:** Stripe parking stalls, install parking bumpers, provide handicap symbol and handicap post mounted sign - insert proper quantities in estimate

**Qty:** 2.00

**Unit of Measure:** Ea.

**Estimate:** $1,364.65

**Assessor Name:** Wlodek Pieczonka

**Date Created:** 01/25/2016

**Notes:** Stripe 2 accessible parking spaces and aisle on staff parking; install signage

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

**System: G2050 - Landscaping & Irrigation**

| | |
|---|---|
| **Location:** | Grounds |
| **Distress:** | Damaged |
| **Category:** | 3 - Operations / Maint. |
| **Priority:** | 5 - Response Time (> 5 yrs) |
| **Correction:** | Remove and replace or replace sod |
| **Qty:** | 5,400.00 |
| **Unit of Measure:** | S.F. |
| **Estimate:** | $80,188.30 |
| **Assessor Name:** | Wlodek Pieczonka |
| **Date Created:** | 01/25/2016 |

**Notes:** Re-sod grass section on the north side of the building

## 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 |

School District of Philadelphia

# S544101;Willard Annex

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): | 9,510 |
| Year Built: | 1996 |
| Last Renovation: | |
| Replacement Value: | $5,761,554 |
| Repair Cost: | $1,501,276.16 |
| Total FCI: | 26.06 % |
| Total RSLI: | 71.77 % |

**Description:**

Facility Assessment
October, 2015

**School District of Philadelphia**
**Willard Annex School**
**3072 Frankford Avenue**
**Philadelphia, PA 19134**

9,510 SF / 119 Students / LN 05

The Willard Annex school building is located at 3072 Frankford Avenue in Philadelphia, PA. The 1 story with a small partial basement and a small mezzanine, approximately 9,510 square foot building was originally constructed at unknown time; however a complete rehabilitation was conducted in 1996.

Mr. Scott Ovington, Facility Area Coordinator provided input to the Parsons assessment team on current problems and planned renovation projects. Mr. Edward Kalicki, building engineer, accompanied us on our tour of the school and provided us with as much information as he could on the building systems and recent maintenance history.

**STRUCTURAL/ EXTERIOR CLOSURE:**

The building typically rests on stone masonry foundations and bearing walls that are not showing signs of settlement or damage, although water penetration in Northwest corner of the boiler room has been reported.

The main structure consists typically of masonry load bearing walls and timber columns supporting heavy timber beams and joists, generally in good condition. Roof structure consists of sloped heavy timber trusses and purlins supporting wood plank structural deck. Floor above the basement is a concrete slab over galvanized steel structural deck.

The building envelope is typically face brick with solid brick backup. In general, masonry is in good condition except a section of west wall where mortar is missing from joints and some face brick deterioration is evident.

The original windows were replaced in 1996 with extruded aluminum fixed windows double glazed with. The windows are fitted with galvanized steel security screens. All windows and screens are generally in good condition.

The exterior doors are generally in fair condition; no weather-stripping is installed; some doors have vision glazing with security screens.

Roofing is typically built-up roofing installed in 1996 and is in good condition. No leaks have been reported. Roof openings consist of an access hatch and 12 skylights providing day light to classrooms.

Exterior doors and frames are typically hollow metal in good condition.

INTERIORS:

Partition wall types include primarily drywall. The interior wall finishes are generally painted drywall. Corridors have plastic panel wainscot below chair rails; toilets have ceramic tile wainscot. Generally, paint is in good condition, entire building was repainted in 2013.

Interior doors are generally solid core wood doors, some glazed in good condition, with accessible handles; doors leading to exits are hollow metal doors and frames in good condition.

Stair serving as an access to mezzanine is painted wood.

Interior identifying signage is typically applied to wall or door surfaces in poor condition; some signs are missing.

Most ceilings are exposed, painted drywall and 2x2 suspended acoustical panels in good condition.

Flooring is generally VCT with cove base in good condition (installed in 1996). Toilets and front lobby have ceramic tile flooring in good condition.

Furnishings include fixed casework in classrooms and staff lounge, generally in good condition; window shades/blinds, generally in fair condition.

GROUNDS (SITE):

There is neither parking nor playground at the site.

A small service yard on east side of the building is mostly dirt with weed patches. Severely deteriorated sections of concrete pavement are located in the front and rear of the yard.

ACCESSIBILITY:

The building does not have accessible entrance, but does have an accessible route inside. Toilets are equipped with accessible fixtures, partitions and accessories, such as grab bars. Most doors in the building have ADA required door handles.

PLUMBING:

Plumbing Fixtures - Many of the plumbing fixtures were installed when the building was remodeled in 1996. Fixtures in the restrooms on each floor consist of both wall and floor mounted flush valve water closets and lavatories with both wheel handle and lever operated faucets. The building is equipped with several handicap accessible stalls. The fixtures are in good condition and should provide reliable service for the next 10-15 years.

Drinking fountains are stainless steel wall hung units with integral refrigerated coolers. The units appeared to be in good condition and are estimated to be within their service life. They are accessible type.

A janitor sink or mop basin is not available in this building for use by the janitorial staff.

There is a small Kitchen at Willard Annex, as all meals served are precooked. The Kitchen is equipped with a single large one-basin stainless steel sink with lever operated faucets.

Domestic Water Distribution - A 2" city water service enters the building from Frankford Avenue. The 2" meter and valves are located in the South side of the basement. Duplex reduced pressure backflow preventers are installed in parallel downstream of the water meter. The domestic hot and cold water distribution piping is copper piping with sweat fittings. The maintenance staff reports no significant problems with scale build up in the domestic piping and the supply is adequate to the fixtures, but the piping is approaching the end of its service life and should be inspected and replaced as necessary by a qualified contractor.

Two (2) Bradford White electric, 50 gallon, vertical domestic hot water heaters are installed; one (1) on the second floor and one (1) in the basement. Each heater has an associated expansion tank installed. The unit on the second floor was installed in 2015, serves the second floor, and is located in the second floor mechanical room. The unit in the basement was installed in 2007, has a circulating pump, and serves the first floor. The domestic hot water heater in the basement is approaching the end of its service life and should be replaced within the next 3-5 years.

Sanitary Waste - The sanitary sewer piping is a mixture of threaded galvanized piping and cast iron with hub and spigot fittings.

The maintenance staff reported no problems with the sanitary waste piping systems. The sewer piping has been in service for almost 20 years, is approaching the end of its service life, and will require more frequent attention from the maintenance staff as time passes. The District should hire a qualified contractor to examine the sanitary waste piping using video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

A sewage ejector pit located in the basement mechanical room receives water from the surrounding area. It has dual submerged pumps that are of an unknown age. The system appeared to be in good condition and the pit is sealed. The Building Engineer reported no issues with the sewage ejector.

Rain Water Drainage - Rain water drains from the roof are routed through the building by PVC and cast iron piping with no hub fittings. It is estimated that this piping was installed in 1996 during the building renovation. The Building Engineer reported no problems with the rain leaders. The rain leaders should provide reliable service for the next 8-12 years.

**MECHANICAL:**

Energy Supply - A 1-1/2" city gas service enters the building from Frankford Avenue. The gas meter is 1-1/2" and is located on the South side of the basement.

Heat Generating Systems - Building heating hot water is generated by one (1) 8.75HP Buderus Logamax Plus condensing boiler, installed in 2010, with a maximum output of 293MBH. The one (1) boiler handles the heating load in all winter weather conditions. The boiler is wall mounted in a room on the first floor and equipped with an internal burner designed to operate on natural gas. Two (2) associated circulating pumps, an air separator, and an expansion tank are installed. The Building Engineer reports no major issues with the boiler. Condensing boilers have an anticipated service life of approximately 15 years; as this unit has been in service 5 years it is within its service life.

Distribution Systems - The hot water distribution piping is black steel with threaded fittings in a two-pipe system. Hot water piping mains from the first floor level run through the building to the fin tube radiators and reheat coils in the variable air volume (VAV) boxes. The distribution piping has been in use approximately 20 years and is approaching the end of its service life. The District should hire a qualified contractor to examine the hot water distribution piping and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 10 years.

Two (2) air handing units (AHU) provide conditioned air for the building. AHU-1 is an electric heating and ventilation unit only and is installed on the second floor. This unit is covered in insulation and an equipment tag was not visible; the Building Engineer said this unit was installed in approximately 2010. AHU-2 is a roof mounted gas fired heating and electric cooling unit with an integral condenser. This unit is estimated to have been installed in 1996, is beyond its service life, and should be replaced. The manufacturer of this unit was not visible. VAV boxes in the six (6) classrooms, fed by building hot water, are ducted to the AHUs to provide more precise building temperatures.

Two-pipe fin tube radiators provide supplemental heating for perimeter spaces within the building. The radiators are original to the building and are within their service life. The fin tube radiators supplement the heat from the two (2) air handling units.

Only precooked meals are served in the Willard Annex and there is no cooking equipment in the building.

One (1) roof mounted exhaust fan serving the Kitchen is installed on the lower roof. One (1) roof mounted exhaust fan serving the restrooms is installed on the upper roof. The fans are operational according to the Building Engineer, but are approaching the end of their service lives and should be replaced.

Controls & Instrumentation - The temperature in the building is controlled by a single thermostat on the wall outside of the Building Engineer's office; the thermostats in the classrooms do not function. The temperature of the building is controlled by this single thermostat and is a very inefficient way to control the temperature. A new DDC control system with operable thermostats should be installed.

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

Sprinklers - The building is equipped with a wet type sprinkler system on the second floor and basement levels only. The first floor is not covered by the sprinkler system. The fire suppression system is estimated to have been installed in 1996 and should not need replacement within the next 15 years.

The building is not equipped with fire stand pipes.

**ELECTRICAL:**

Site electrical service - The primary power (medium voltage) is from the street power poles feeding a pole-top transformer (PECO) and stepped down to 120V/240V, two phase. The power goes underground and feeds the main switchboard. The school's electrical service is at 400 Amp, 120V/240V, and is located in the electrical room (basement). The PECO meter (PECO) is also located inside the electrical room. The electrical service entrance and the main building electrical distribution systems are in poor condition. The electrical service has no capacity for future growth.

Distribution system - The electrical distribution is accomplished with a 120V distribution switchboard feeding the 120V panels throughout the building (two in each floor). These panels are in fair condition and do not need to be replaced for another 10 years.

Receptacles - There are adequate receptacles in classrooms, computer rooms, libraries, and other areas.

Lighting - Interior building is illuminated by various types of fixtures. They include fluorescent lights (T-5 & T-8 lamps) in majority of the areas, including; classrooms, corridor, and offices. Surface or pendant-mounted industrial fluorescent fixtures are used in mechanical and electrical rooms. The entire interior lighting fixtures are in fair condition and have not reached the end of their useful service.

Fire alarm - The present Fire Alarm system is automatic/addressable, and is in compliance with safety codes. There are manual pulls stations throughout the building. There are sufficient number of horn/strobes installed in the classrooms, corridors, offices and other areas in the school.

Telephone/LAN - The school telephone and data systems are working adequately. A Main Distribution Frame (MDF) along with a telephone PBX system provides the necessary communication function for the building. School is also equipped with Wi-Fi system.

Public address - Separate PA system does not exist. School uses the telephone systems for public announcement. This system is working adequately. The present Intercom System is functioning correctly. Each class room is provided by with intercom telephone service. The system is for paging and intercom communication between main office and classrooms, between classrooms and main

office, and between classrooms to classrooms.

Clock and Program system - The present clock system is not working adequately for most part, and clocks not are controlled by central master control panel.

Television System - Television system is not provided in the school. Most classes are provided with smart boards having the ability to connect to computer and internet.

Security Systems-access control, video surveillance - The school is provided with adequate video surveillance system. Sufficient number of cameras is installed at exit doors, corridors, exterior, and other critical areas. These cameras are controlled by a Closed Circuit Television system (CCTV).

Emergency Power System - School is not provided with an emergency generator.

Emergency lighting system, including exit lighting - There is sufficient emergency lighting fixtures in corridors, and other exit ways. Exit signs and emergency fixtures are in fairly good condition with a few more years of useful service left in them.

Lightning Protection System - There is no lightning protection system installed in the school.

Grounding - The present grounding system is adequate. All equipment are properly connected and bonded to the ground.

Site Lighting – There is no site lighting installed.

Site Paging – There is no site paging installed.

**RECOMMENDATIONS:**

- Repair deteriorated face brick on west wall and tuck-point
- Provide expansion joint in masonry at SE corner
- Provide new signage throughout the building
- Provide accessible ramp at the main entrance
- Provide concrete paving in service yard
- Hire a qualified contractor to perform a detailed inspection of the domestic water piping, which is approaching the end of its service life, and replace any damaged piping.
- Replace the 50 gallon, electric, vertical water heater in the basement which is approaching the end of its service life.
- Hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Hire a qualified contractor to examine the hot water distribution piping, in service for approximately 20 years, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Replace AHU-2, a roof mounted gas fired heating and electric cooling unit with an integral condenser, which is beyond its service life.
- Replace the two (2) roof-mounted exhaust fans serving the Kitchen and restrooms, which are approaching the end of its service life.
- Replace the electric controls for the HVAC systems with modern DDC modules, valves and actuators to improve reliability and energy efficiency. Provide a new building automation system (BAS) with communication interface to the preferred system in use throughout the District.
- Install an upgraded clock system with enough capacity to provide clocks for the entire building
- Install a new emergency generator on a pad in the service yard.

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg Lot Tm: | Lot 3 / Tm 4 |
| Status: | Accepted by SDP | Team: | Tm 4 |
| Site ID: | S544101 | | |

## 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.

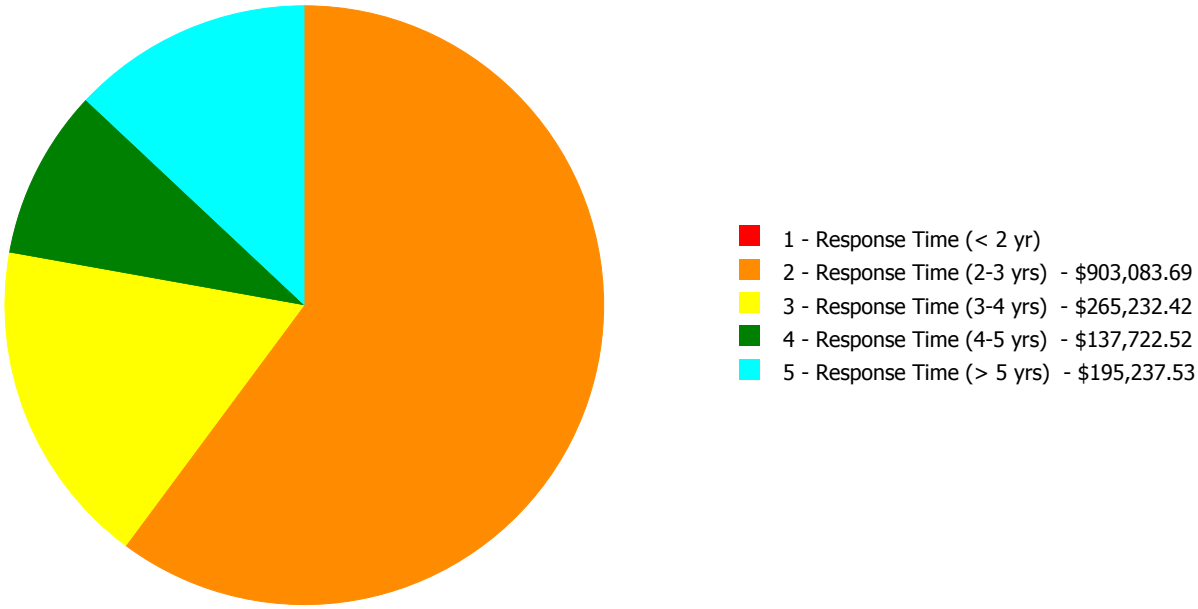
### Current Investment Requirement and Condition by Uniformat Classification

| UNIFORMAT Classification | RSLI% | FCI % | Current Repair |
|---|---|---|---|
| A10 - Foundations | 81.00 % | 0.00 % | $0.00 |
| A20 - Basement Construction | 81.00 % | 0.00 % | $0.00 |
| B10 - Superstructure | 81.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 70.60 % | 5.98 % | $26,464.73 |
| B30 - Roofing | 110.00 % | 0.00 % | $0.00 |
| C10 - Interior Construction | 71.15 % | 3.12 % | $6,772.81 |
| C20 - Stairs | 81.00 % | 0.00 % | $0.00 |
| C30 - Interior Finishes | 56.91 % | 0.00 % | $0.00 |
| D20 - Plumbing | 53.86 % | 38.64 % | $149,451.08 |
| D30 - HVAC | 74.35 % | 101.69 % | $1,075,747.87 |
| D40 - Fire Protection | 40.69 % | 0.00 % | $0.00 |
| D50 - Electrical | 54.15 % | 33.61 % | $203,347.24 |
| E10 - Equipment | 31.87 % | 0.00 % | $0.00 |
| E20 - Furnishings | 52.50 % | 0.00 % | $0.00 |
| G20 - Site Improvements | 45.19 % | 109.37 % | $39,492.43 |
| G40 - Site Electrical Utilities | 0.00 % | 0.00 % | $0.00 |
| **Totals:** | **71.77 %** | **26.06 %** | **$1,501,276.16** |

### 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) |
|---|---|---|---|---|---|---|---|
| B544101;Willard Annex | 9,510 | 25.53 | $0.00 | $903,083.69 | $241,848.78 | $121,613.73 | $195,237.53 |
| G544101;Grounds | 900 | 109.37 | $0.00 | $0.00 | $23,383.64 | $16,108.79 | $0.00 |
| **Total:** | | **26.06** | **$0.00** | **$903,083.69** | **$265,232.42** | **$137,722.52** | **$195,237.53** |

### Deficiencies By Priority




**Budget Estimate Total: $1,501,276.16**

## 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: | Annex |
| Gross Area (SF): | 9,510 |
| Year Built: | 1996 |
| Last Renovation: | |
| Replacement Value: | $5,725,446 |
| Repair Cost: | $1,461,783.73 |
| Total FCI: | 25.53 % |
| Total RSLI: | 71.94 % |

**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg ID: | B544101 |
| Sewage Ejector: | Yes | Status: | Accepted by SDP |
| Site ID: | S544101 | | |

## 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 | 81.00 % | 0.00 % | $0.00 |
| A20 - Basement Construction | 81.00 % | 0.00 % | $0.00 |
| B10 - Superstructure | 81.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 70.60 % | 5.98 % | $26,464.73 |
| B30 - Roofing | 110.00 % | 0.00 % | $0.00 |
| C10 - Interior Construction | 71.15 % | 3.12 % | $6,772.81 |
| C20 - Stairs | 81.00 % | 0.00 % | $0.00 |
| C30 - Interior Finishes | 56.91 % | 0.00 % | $0.00 |
| D20 - Plumbing | 53.87 % | 38.64 % | $149,451.08 |
| D30 - HVAC | 74.35 % | 101.69 % | $1,075,747.87 |
| D40 - Fire Protection | 40.69 % | 0.00 % | $0.00 |
| D50 - Electrical | 54.15 % | 33.61 % | $203,347.24 |
| E10 - Equipment | 31.87 % | 0.00 % | $0.00 |
| E20 - Furnishings | 52.50 % | 0.00 % | $0.00 |
| **Totals:** | **71.94 %** | **25.53 %** | **$1,461,783.73** |

## 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 | $24.32 | S.F. | 9,510 | 100 | 1996 | 2096 | | 81.00 % | 0.00 % | 81 | | | $231,283 |
| A1030 | Slab on Grade | $15.51 | S.F. | 9,510 | 100 | 1996 | 2096 | | 81.00 % | 0.00 % | 81 | | | $147,500 |
| A2010 | Basement Excavation | $13.07 | S.F. | 9,510 | 100 | 1996 | 2096 | | 81.00 % | 0.00 % | 81 | | | $124,296 |
| A2020 | Basement Walls | $23.02 | S.F. | 9,510 | 100 | 1996 | 2096 | | 81.00 % | 0.00 % | 81 | | | $218,920 |
| B1010 | Floor Construction | $92.20 | S.F. | 9,510 | 100 | 1996 | 2096 | | 81.00 % | 0.00 % | 81 | | | $876,822 |
| B1020 | Roof Construction | $24.11 | S.F. | 9,510 | 100 | 1996 | 2096 | | 81.00 % | 0.00 % | 81 | | | $229,286 |
| B2010 | Exterior Walls | $31.22 | S.F. | 9,510 | 100 | 1996 | 2096 | | 81.00 % | 8.91 % | 81 | | $26,464.73 | $296,902 |
| B2020 | Exterior Windows | $13.63 | S.F. | 9,510 | 40 | 1996 | 2036 | | 52.50 % | 0.00 % | 21 | | | $129,621 |
| B2030 | Exterior Doors | $1.67 | S.F. | 9,510 | 25 | 1996 | 2021 | | 24.00 % | 0.00 % | 6 | | | $15,882 |
| B3010105 | Built-Up | $37.76 | S.F. | 10,930 | 20 | 1996 | 2016 | 2037 | 110.00 % | 0.00 % | 22 | | | $412,717 |
| 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. | | 20 | | | | 0.00 % | 0.00 % | | | | $0 |
| B3020 | Roof Openings | $0.68 | S.F. | 9,510 | 20 | 1996 | 2016 | 2037 | 110.00 % | 0.00 % | 22 | | | $6,467 |
| C1010 | Partitions | $14.93 | S.F. | 9,510 | 100 | 1996 | 2096 | | 81.00 % | 0.00 % | 81 | | | $141,984 |
| C1020 | Interior Doors | $3.76 | S.F. | 9,510 | 40 | 1996 | 2036 | | 52.50 % | 0.00 % | 21 | | | $35,758 |
| C1030 | Fittings | $4.12 | S.F. | 9,510 | 40 | 1996 | 2036 | | 52.50 % | 17.29 % | 21 | | $6,772.81 | $39,181 |
| C2010 | Stair Construction | $1.28 | S.F. | 9,510 | 100 | 1996 | 2096 | | 81.00 % | 0.00 % | 81 | | | $12,173 |

# Site Assessment Report - B544101;Willard Annex

| System Code | System Description | Unit Price $ | UoM | Qty | Life | Year Installed | Calc Next Renewal Year | Next Renewal Year | RSLI% | FCI% | RSL | eCR | Deficiency $ | Replacement Value $ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C3010230 | Paint & Covering | $13.21 | S.F. | 9,510 | 10 | 2013 | 2023 | | 80.00 % | 0.00 % | 8 | | | $125,627 |
| C3010231 | Vinyl Wall Covering | $0.97 | S.F. | 9,510 | 15 | | | | 0.00 % | 0.00 % | | | | $9,225 |
| C3010232 | Wall Tile | $2.63 | S.F. | 9,510 | 30 | 1996 | 2026 | | 36.67 % | 0.00 % | 11 | | | $25,011 |
| C3020411 | Carpet | $7.30 | S.F. | | 10 | | | | 0.00 % | 0.00 % | | | | $0 |
| C3020412 | Terrazzo & Tile | $75.52 | S.F. | 760 | 50 | 1996 | 2046 | | 62.00 % | 0.00 % | 31 | | | $57,395 |
| C3020413 | Vinyl Flooring | $9.68 | S.F. | 8,559 | 20 | 1996 | 2016 | 2037 | 110.00 % | 0.00 % | 22 | | | $82,851 |
| C3020414 | Wood Flooring | $22.27 | S.F. | | 25 | | | | 0.00 % | 0.00 % | | | | $0 |
| C3020415 | Concrete Floor Finishes | $0.97 | S.F. | 190 | 50 | 1996 | 2046 | | 62.00 % | 0.00 % | 31 | | | $184 |
| C3030 | Ceiling Finishes | $20.97 | S.F. | 9,510 | 25 | 1996 | 2021 | | 24.00 % | 0.00 % | 6 | | | $199,425 |
| D2010 | Plumbing Fixtures | $31.58 | S.F. | 9,510 | 35 | 1996 | 2031 | | 45.71 % | 0.00 % | 16 | | | $300,326 |
| D2020 | Domestic Water Distribution | $2.90 | S.F. | 9,510 | 25 | 1996 | 2021 | 2042 | 108.00 % | 372.74 % | 27 | | $102,797.37 | $27,579 |
| D2030 | Sanitary Waste | $2.90 | S.F. | 9,510 | 25 | 1996 | 2021 | 2042 | 108.00 % | 169.16 % | 27 | | $46,653.71 | $27,579 |
| D2040 | Rain Water Drainage | $3.29 | S.F. | 9,510 | 30 | 1996 | 2026 | | 36.67 % | 0.00 % | 11 | | | $31,288 |
| D3020 | Heat Generating Systems | $18.67 | S.F. | 9,510 | 15 | 2010 | 2025 | | 66.67 % | 0.00 % | 10 | | | $177,552 |
| D3030 | Cooling Generating Systems | $24.48 | S.F. | 9,510 | 30 | 1996 | 2026 | | 36.67 % | 0.00 % | 11 | | | $232,805 |
| D3040 | Distribution Systems | $42.99 | S.F. | 9,510 | 25 | 1996 | 2021 | 2042 | 108.00 % | 213.23 % | 27 | | $871,738.51 | $408,835 |
| D3050 | Terminal & Package Units | $11.60 | S.F. | 9,510 | 20 | | | | 0.00 % | 0.00 % | | | | $110,316 |
| D3060 | Controls & Instrumentation | $13.50 | S.F. | 9,510 | 20 | 1996 | 2016 | 2037 | 110.00 % | 158.90 % | 22 | | $204,009.36 | $128,385 |
| D4010 | Sprinklers | $8.02 | S.F. | 9,510 | 35 | 1996 | 2031 | | 45.71 % | 0.00 % | 16 | | | $76,270 |
| D4020 | Standpipes | $0.99 | S.F. | 9,510 | 35 | | | | 0.00 % | 0.00 % | | | | $9,415 |
| D5010 | Electrical Service/Distribution | $9.70 | S.F. | 9,510 | 30 | 1996 | 2026 | 2026 | 36.67 % | 0.00 % | 11 | | | $92,247 |
| D5020 | Lighting and Branch Wiring | $34.68 | S.F. | 9,510 | 20 | 2006 | 2026 | 2026 | 55.00 % | 0.00 % | 11 | | | $329,807 |
| D5030 | Communications and Security | $12.99 | S.F. | 9,510 | 15 | 2011 | 2026 | 2026 | 73.33 % | 54.24 % | 11 | | $67,007.01 | $123,535 |
| D5090 | Other Electrical Systems | $6.24 | S.F. | 9,510 | 30 | 1996 | 2026 | 2026 | 36.67 % | 229.75 % | 11 | | $136,340.23 | $59,342 |
| E1020 | Institutional Equipment | $4.82 | S.F. | 9,510 | 35 | | | | 0.00 % | 0.00 % | | | | $45,838 |
| E1090 | Other Equipment | $11.10 | S.F. | 9,510 | 35 | 1996 | 2031 | | 45.71 % | 0.00 % | 16 | | | $105,561 |
| E2010 | Fixed Furnishings | $2.13 | S.F. | 9,510 | 40 | 1996 | 2036 | | 52.50 % | 0.00 % | 21 | | | $20,256 |
| | | | | | | | | **Total** | **71.94 %** | **25.53 %** | | | **$1,461,783.73** | **$5,725,446** |

## System Notes

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

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

**Note:** Paint 95%
Ceramic tile 5%

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

**Note:** VCT 90%
Ceramic tile 8%
Concrete 2%

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

**Note:** Exposed/ painted 80%
ACT 15%
Drywall 5%

## 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:** | **$1,461,784** | **$0** | **$0** | **$0** | **$0** | **$0** | **$282,796** | **$0** | **$175,055** | **$0** | **$262,476** | **$2,182,111** |
| *** 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** | $26,465 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$26,465** |
| **B2020 - Exterior Windows** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B2030 - Exterior Doors** | $0 | $0 | $0 | $0 | $0 | $0 | $20,860 | $0 | $0 | $0 | $0 | **$20,860** |
| **B30 - Roofing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010 - Roof Coverings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010105 - Built-Up** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010120 - Single Ply Membrane** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010130 - Preformed Metal Roofing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3010140 - Shingle & Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B3020 - Roof Openings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C - Interiors** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C10 - Interior Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C1010 - Partitions** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

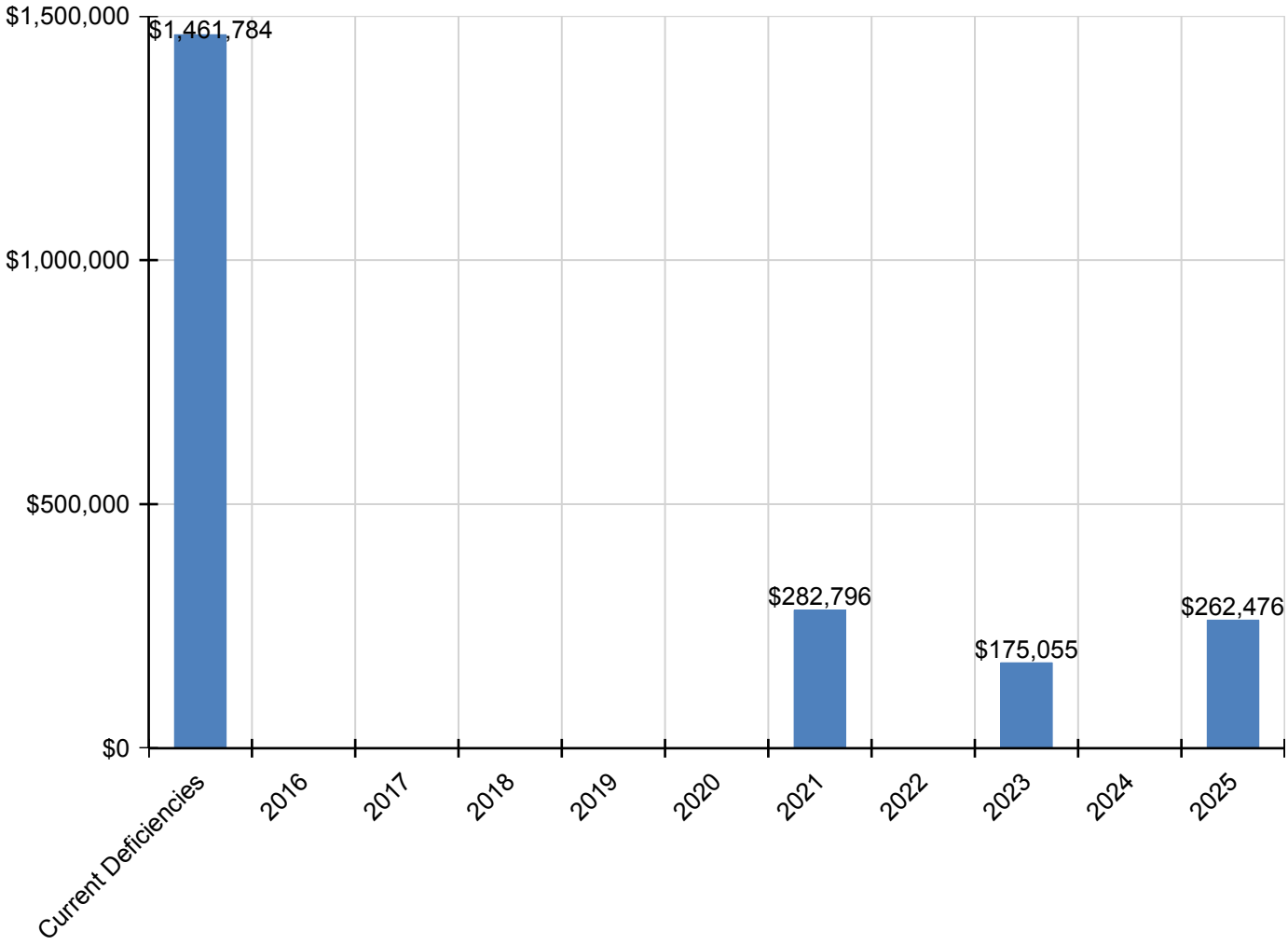
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **C1020 - Interior Doors** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C1030 - Fittings** | $6,773 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$6,773** |
| **C20 - Stairs** | $0 | $0 | $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** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $175,055 | $0 | $0 | **$175,055** |
| **C3010231 - Vinyl Wall Covering** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3010232 - Wall Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020 - Floor Finishes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020411 - Carpet** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020412 - Terrazzo & Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020413 - Vinyl Flooring** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **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** | $0 | $0 | $0 | $0 | $0 | $0 | $261,936 | $0 | $0 | $0 | $0 | **$261,936** |
| **D - Services** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D20 - Plumbing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D2010 - Plumbing Fixtures** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D2020 - Domestic Water Distribution** | $102,797 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$102,797** |
| **D2030 - Sanitary Waste** | $46,654 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$46,654** |
| **D2040 - Rain Water Drainage** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D30 - HVAC** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3020 - Heat Generating Systems** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $262,476 | **$262,476** |
| **D3030 - Cooling Generating Systems** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3040 - Distribution Systems** | $871,739 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$871,739** |
| **D3050 - Terminal & Package Units** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3060 - Controls & Instrumentation** | $204,009 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$204,009** |
| **D40 - Fire Protection** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D4010 - Sprinklers** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D4020 - Standpipes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D50 - Electrical** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D5010 - Electrical Service/Distribution** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **D5020 - Lighting and Branch Wiring** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D5030 - Communications and Security** | $67,007 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$67,007** |
| **D5090 - Other Electrical Systems** | $136,340 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$136,340** |
| **E - Equipment & Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E10 - Equipment** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E1020 - Institutional Equipment** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E1090 - Other Equipment** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E20 - Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E2010 - Fixed Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

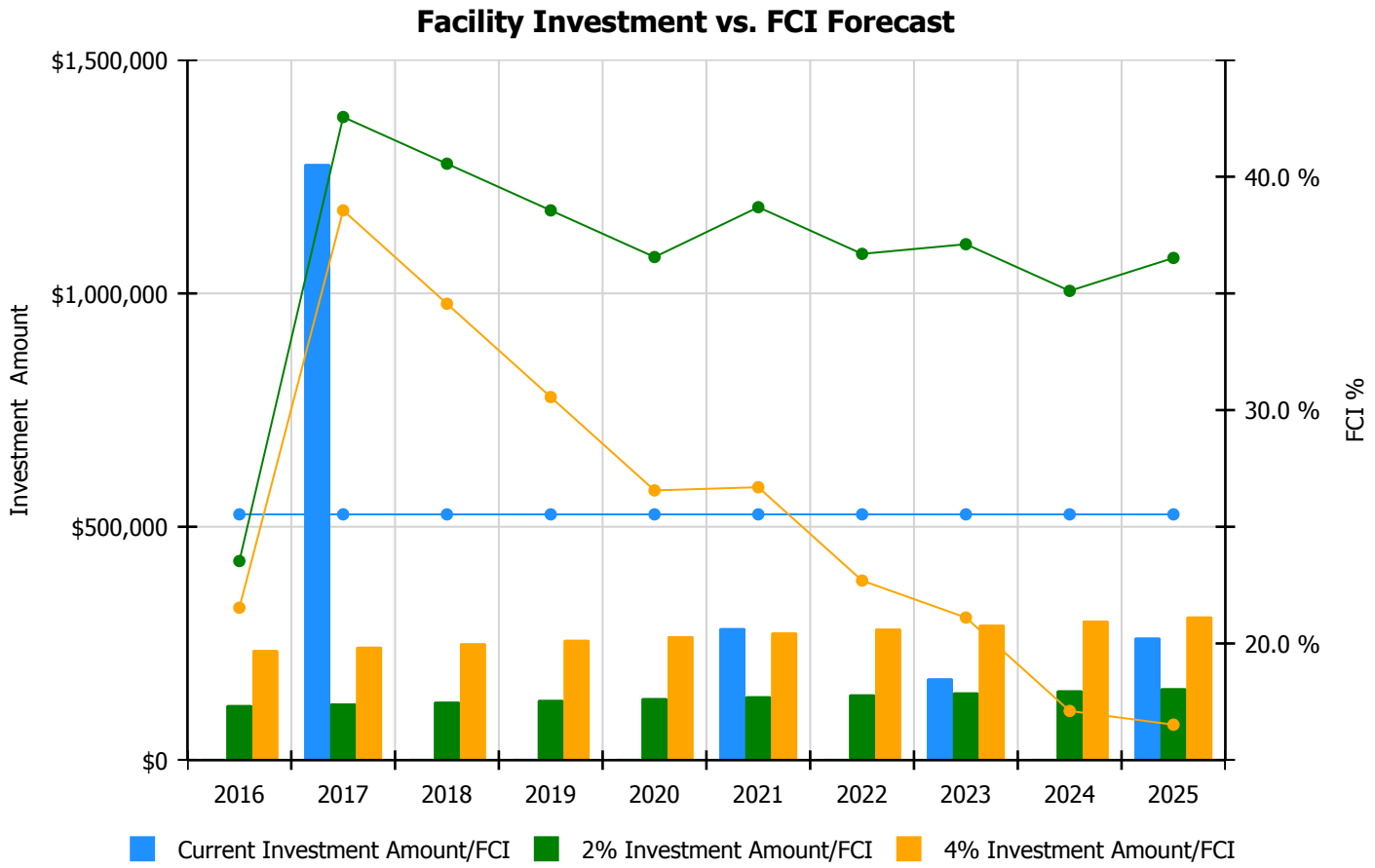
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



## 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:

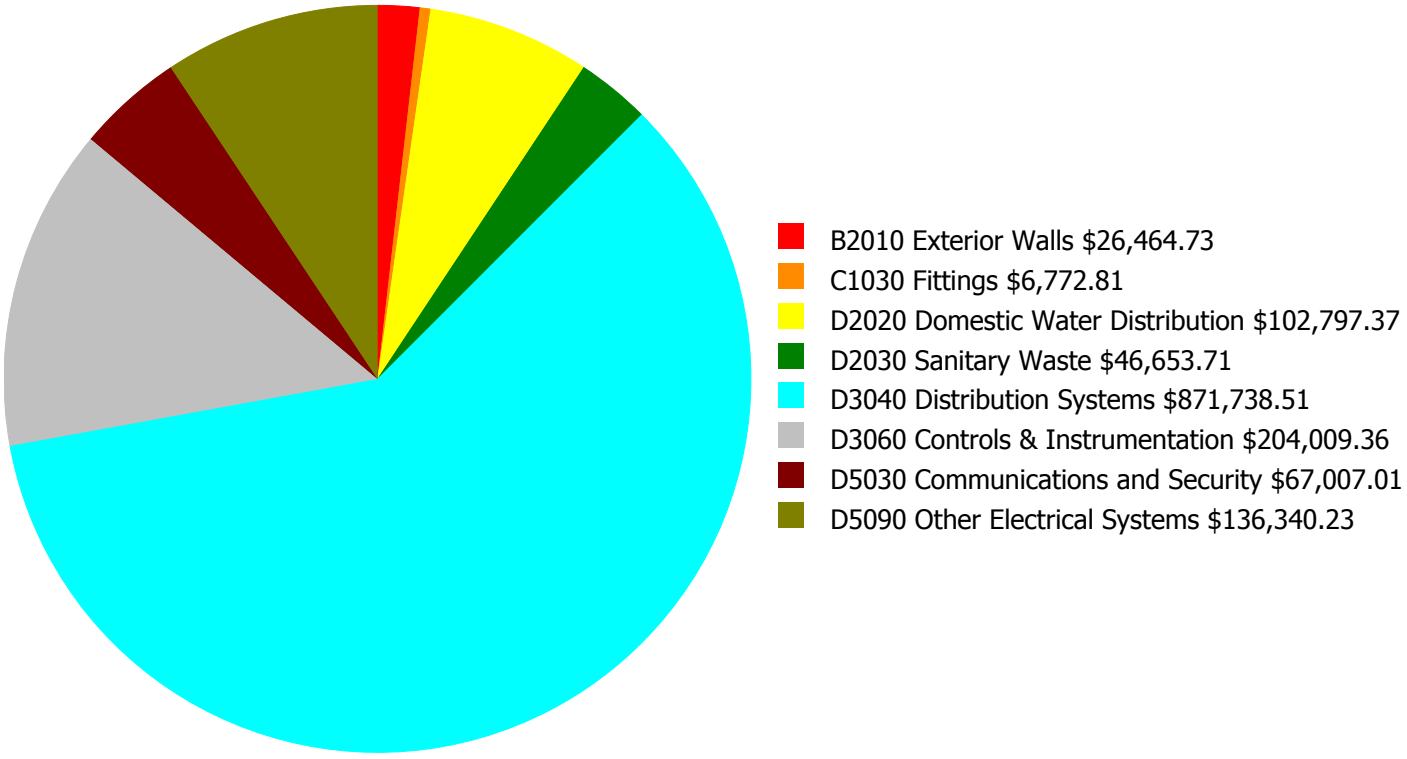
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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




| Year | Investment Amount Current FCI - 25.53% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $117,944.00 | 23.53 % | $235,888.00 | 21.53 % |
| 2017 | $1,277,168 | $121,483.00 | 42.56 % | $242,965.00 | 38.56 % |
| 2018 | $0 | $125,127.00 | 40.56 % | $250,254.00 | 34.56 % |
| 2019 | $0 | $128,881.00 | 38.56 % | $257,762.00 | 30.56 % |
| 2020 | $0 | $132,747.00 | 36.56 % | $265,494.00 | 26.56 % |
| 2021 | $282,796 | $136,730.00 | 38.69 % | $273,459.00 | 26.69 % |
| 2022 | $0 | $140,832.00 | 36.69 % | $281,663.00 | 22.69 % |
| 2023 | $175,055 | $145,056.00 | 37.11 % | $290,113.00 | 21.11 % |
| 2024 | $0 | $149,408.00 | 35.11 % | $298,816.00 | 17.11 % |
| 2025 | $262,476 | $153,890.00 | 36.52 % | $307,781.00 | 16.52 % |
| **Total:** | **$1,997,495** | **$1,352,098.00** | | **$2,704,195.00** | |

## Deficiency Summary by System

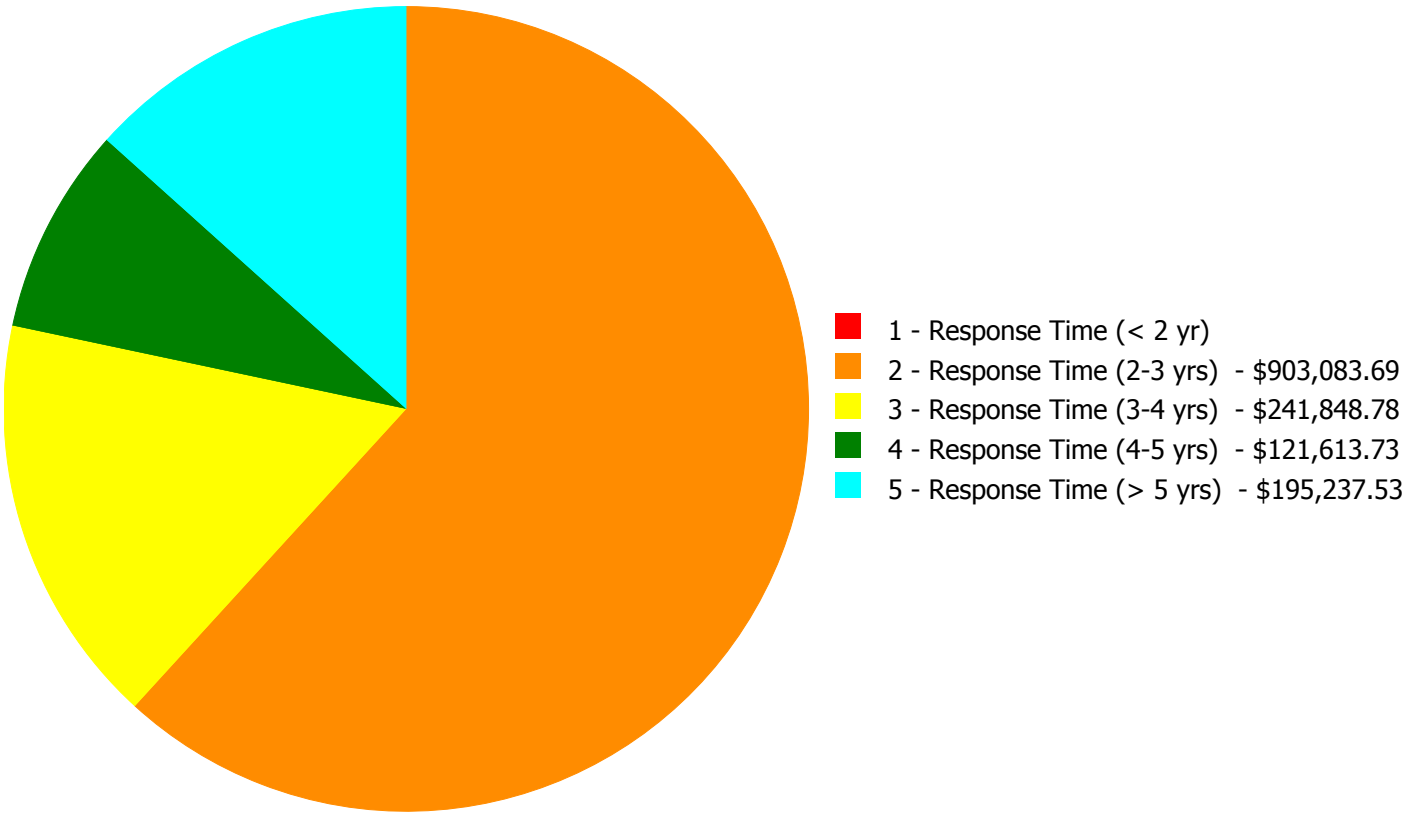
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $1,461,783.73**

## 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: $1,461,783.73**

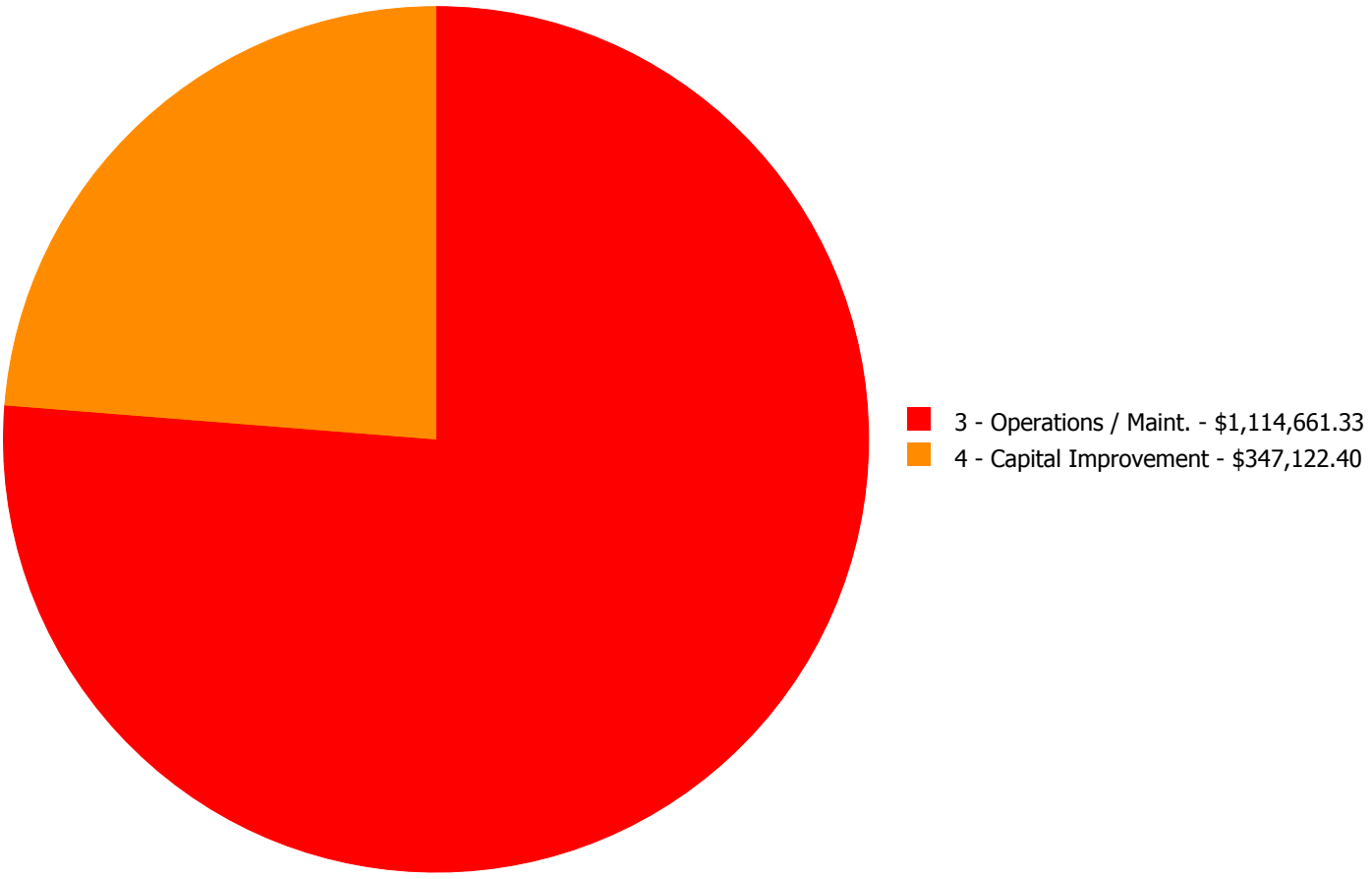
## Deficiency By Priority Investment Table

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 | $0.00 | $26,464.73 | $0.00 | $0.00 | $26,464.73 |
| C1030 | Fittings | $0.00 | $0.00 | $0.00 | $0.00 | $6,772.81 | $6,772.81 |
| D2020 | Domestic Water Distribution | $0.00 | $0.00 | $0.00 | $54,606.72 | $48,190.65 | $102,797.37 |
| D2030 | Sanitary Waste | $0.00 | $0.00 | $0.00 | $0.00 | $46,653.71 | $46,653.71 |
| D3040 | Distribution Systems | $0.00 | $699,074.33 | $79,043.82 | $0.00 | $93,620.36 | $871,738.51 |
| D3060 | Controls & Instrumentation | $0.00 | $204,009.36 | $0.00 | $0.00 | $0.00 | $204,009.36 |
| D5030 | Communications and Security | $0.00 | $0.00 | $0.00 | $67,007.01 | $0.00 | $67,007.01 |
| D5090 | Other Electrical Systems | $0.00 | $0.00 | $136,340.23 | $0.00 | $0.00 | $136,340.23 |
| | **Total:** | $0.00 | $903,083.69 | $241,848.78 | $121,613.73 | $195,237.53 | $1,461,783.73 |

## 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: $1,461,783.73**

## Deficiency Details by Priority

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

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

**System: D3040 - Distribution Systems**

**Location:** Roof
**Distress:** Beyond Service Life
**Category:** 3 - Operations / Maint.
**Priority:** 2 - Response Time (2-3 yrs)
**Correction:** Replace Rooftop Unit (25T) and air terminals
**Qty:** 25.00
**Unit of Measure:** Ton
**Estimate:** $699,074.33
**Assessor Name:** Craig Anding
**Date Created:** 12/18/2015

**Notes:** Replace AHU-2, a roof mounted gas fired heating and electric cooling unit with an integral condenser, which is beyond its service life.

---

**System: D3060 - Controls & Instrumentation**


**Location:** Throughout building
**Distress:** Inadequate
**Category:** 4 - Capital Improvement
**Priority:** 2 - Response Time (2-3 yrs)
**Correction:** Replace pneumatic controls with DDC (75KSF)
**Qty:** 9,510.00
**Unit of Measure:** S.F.
**Estimate:** $204,009.36
**Assessor Name:** Craig Anding
**Date Created:** 12/18/2015

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

---

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

**System: B2010 - Exterior Walls**

**Location:** Exterior

**Distress:** Building Envelope Integrity

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

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

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

**Qty:** 720.00

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

**Estimate:** $23,248.42

**Assessor Name:** Craig Anding

**Date Created:** 01/26/2016

**Notes:** Repair deteriorated face brick on west wall and tuck-point

**System: B2010 - Exterior Walls**

**Location:** Exterior

**Distress:** Maintenance Required

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

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

**Correction:** Remove and replace expansion joints at exterior walls

**Qty:** 36.00

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

**Estimate:** $3,216.31

**Assessor Name:** Craig Anding

**Date Created:** 01/26/2016

**Notes:** Provide expansion joint in masonry at SE corner

**System: D3040 - Distribution Systems**

**Location:** Roof

**Distress:** Beyond Service Life

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

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

**Correction:** Replace utility set exhaust fan (5 HP)

**Qty:** 2.00

**Unit of Measure:** Ea.

**Estimate:** $79,043.82

**Assessor Name:** Craig Anding

**Date Created:** 12/18/2015

**Notes:** Replace the two (2) roof mounted exhaust fans serving the Kitchen and restrooms, which are approaching the end of its service life.

---

**System: D5090 - Other Electrical Systems**

This deficiency has no image.

**Location:** electrical room

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

**Correction:** Replace standby generator system

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $136,340.23

**Assessor Name:** Craig Anding

**Date Created:** 12/17/2015

**Notes:** Install a new Emergency generator.
Note: there is no picture is attached, since presently there is no Emergency Generator in the building

---

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

**System: D2020 - Domestic Water Distribution**

**Location:** Basement

**Distress:** Beyond Service Life

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

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

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

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $54,606.72

**Assessor Name:** Craig Anding

**Date Created:** 12/18/2015

**Notes:** Replace the 50 gallon, electric, vertical water heater in the basement which is approaching the end of its service life.

---

**System: D5030 - Communications and Security**

**Location:** throughout the building

**Distress:** Beyond Service Life

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

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

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

**Qty:** 0.00

**Unit of Measure:** Ea.

**Estimate:** $67,007.01

**Assessor Name:** Craig Anding

**Date Created:** 12/17/2015

**Notes:** Install an upgraded Clock System with enough capacity to provide clocks for the entire building
Note: a multiplier of 1.4 is used (instead of 1.0) to cover the additional cost of other related construction cost.

---

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

**System: C1030 - Fittings**

**Location:** Interior

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

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

**Qty:** 25.00

**Unit of Measure:** Ea.

**Estimate:** $6,772.81

**Assessor Name:** Craig Anding

**Date Created:** 01/26/2016

**Notes:** Provide new signage throughout the building

---

**System: D2020 - Domestic Water Distribution**

**Location:** Throughout building

**Distress:** Beyond Service Life

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

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

**Correction:** Replace domestic water piping (75 KSF)

**Qty:** 9,510.00

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

**Estimate:** $48,190.65

**Assessor Name:** Craig Anding

**Date Created:** 12/18/2015

**Notes:** Hire a qualified contractor to perform a detailed inspection of the domestic water piping, which is approaching the end of its service life, and replace any damaged piping.

---

**System: D2030 - Sanitary Waste**

**Location:** Throughout building

**Distress:** Beyond Service Life

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

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

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

**Qty:** 9,510.00

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

**Estimate:** $46,653.71

**Assessor Name:** Craig Anding

**Date Created:** 12/18/2015

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

**System: D3040 - Distribution Systems**

**Location:** Throughout building

**Distress:** Beyond Service Life

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

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

**Correction:** Replace hydronic heating piping (75KSF)

**Qty:** 9,510.00

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

**Estimate:** $93,620.36

**Assessor Name:** Craig Anding

**Date Created:** 12/18/2015

**Notes:** Hire a qualified contractor to examine the hot water distribution piping, in service for 20 years, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D5010 Electrical Service/Distribution | Panelboards, 3 pole 3 wire, main circuit breaker, 240 V, 225 amp | 4.00 | Ea. | electrical room | | | | | 30 | 1996 | 2026 | $3,105.00 | $13,662.00 |
| | | | | | | | | | | | | **Total:** | **$13,662.00** |

## Executive Summary

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

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

| | |
|---|---|
| Function: | |
| Gross Area (SF): | 900 |
| Year Built: | 1996 |
| Last Renovation: | |
| Replacement Value: | $36,108 |
| Repair Cost: | $39,492.43 |
| Total FCI: | 109.37 % |
| Total RSLI: | 45.19 % |

**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Bldg ID: | S544101 | Site ID: | S544101 |

## 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 | 45.19 % | 109.37 % | $39,492.43 |
| G40 - Site Electrical Utilities | 0.00 % | 0.00 % | $0.00 |
| **Totals:** | **45.19 %** | **109.37 %** | **$39,492.43** |

## 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 | $23.97 | S.F. | 1,120 | 40 | 1996 | 2036 | | 52.50 % | 147.11 % | 21 | | $39,492.43 | $26,846 |
| G2040 | Site Development | $8.27 | S.F. | 1,120 | 25 | 1996 | 2021 | | 24.00 % | 0.00 % | 6 | | | $9,262 |
| G2050 | Landscaping & Irrigation | $4.36 | S.F. | | 15 | | | | 0.00 % | 0.00 % | | | | $0 |
| G4020 | Site Lighting | $4.84 | S.F. | | 30 | | | | 0.00 % | 0.00 % | | | | $0 |
| G4030 | Site Communications & Security | $0.97 | S.F. | | 30 | | | | 0.00 % | 0.00 % | | | | $0 |
| | | | | | | | | **Total** | **45.19 %** | **109.37 %** | | | **$39,492.43** | **$36,108** |

## 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.

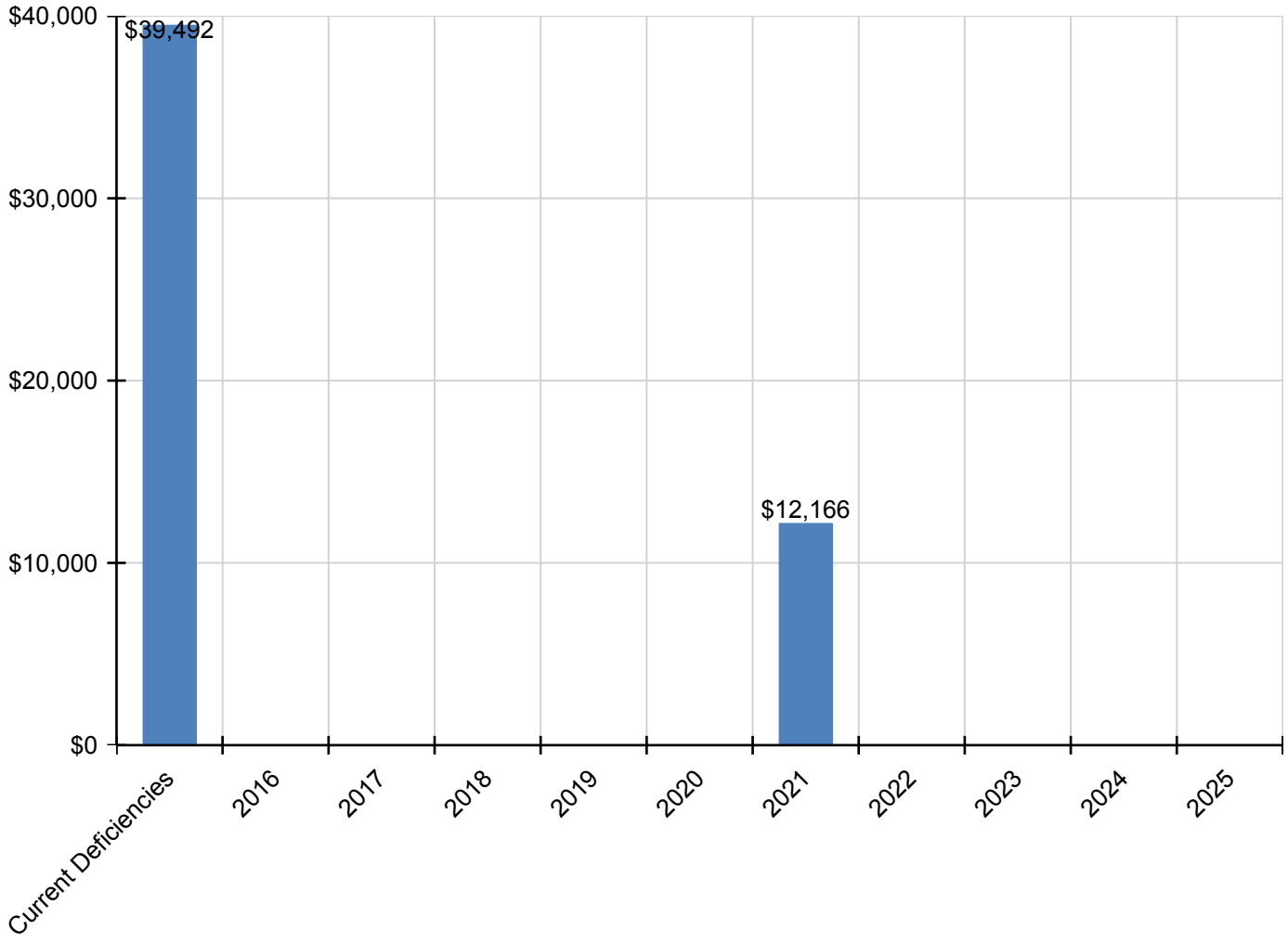
*Inflation Rate: 3%*

| System | Current Deficiencies | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total:** | **$39,492** | **$0** | **$0** | **$0** | **$0** | **$0** | **$12,166** | **$0** | **$0** | **$0** | **$0** | **$51,659** |
| **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** | $39,492 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$39,492** |
| **G2040 - Site Development** | $0 | $0 | $0 | $0 | $0 | $0 | $12,166 | $0 | $0 | $0 | $0 | **$12,166** |
| **G2050 - Landscaping & Irrigation** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G40 - Site Electrical Utilities** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G4020 - Site Lighting** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G4030 - Site Communications & Security** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

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

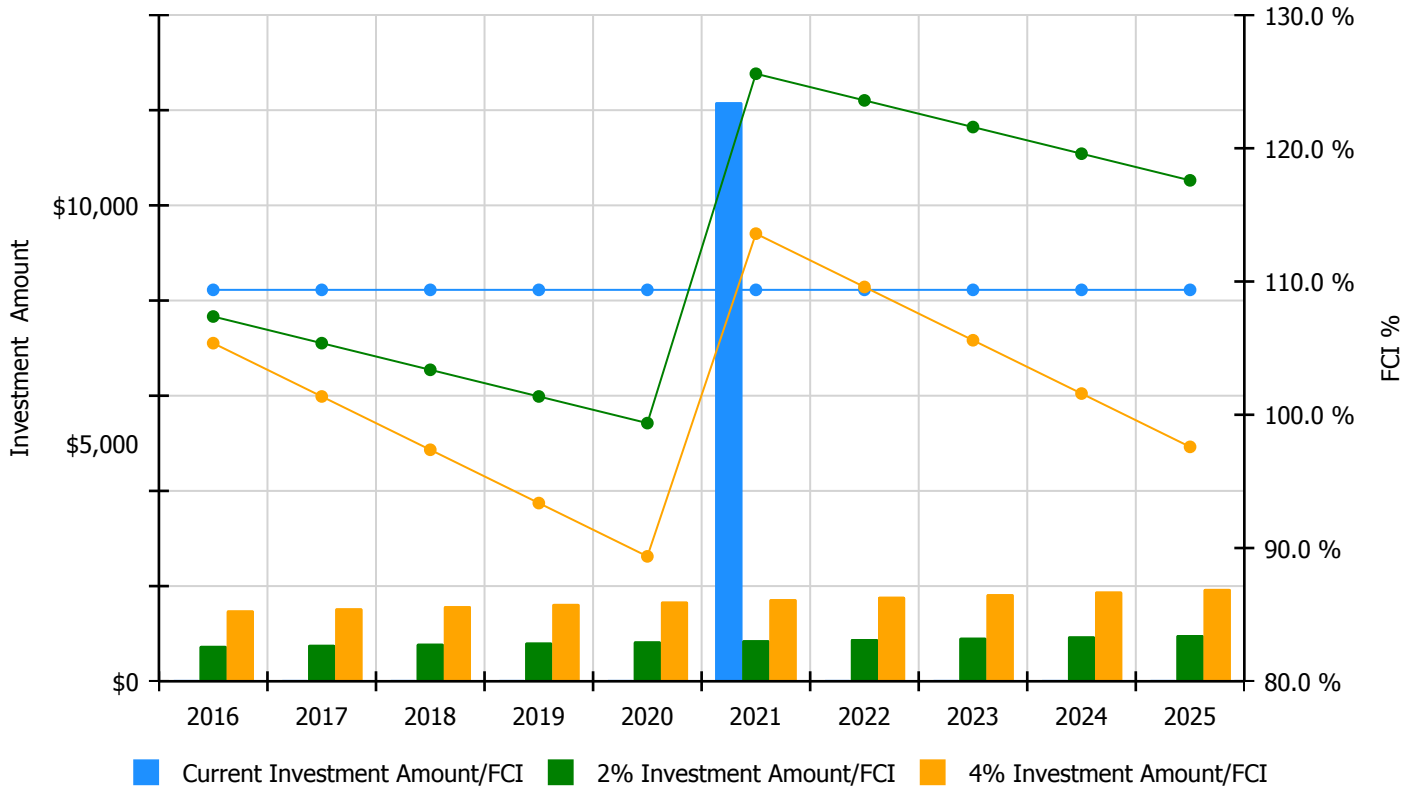


## 10 Year FCI Forecast by Investment Scenario

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

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

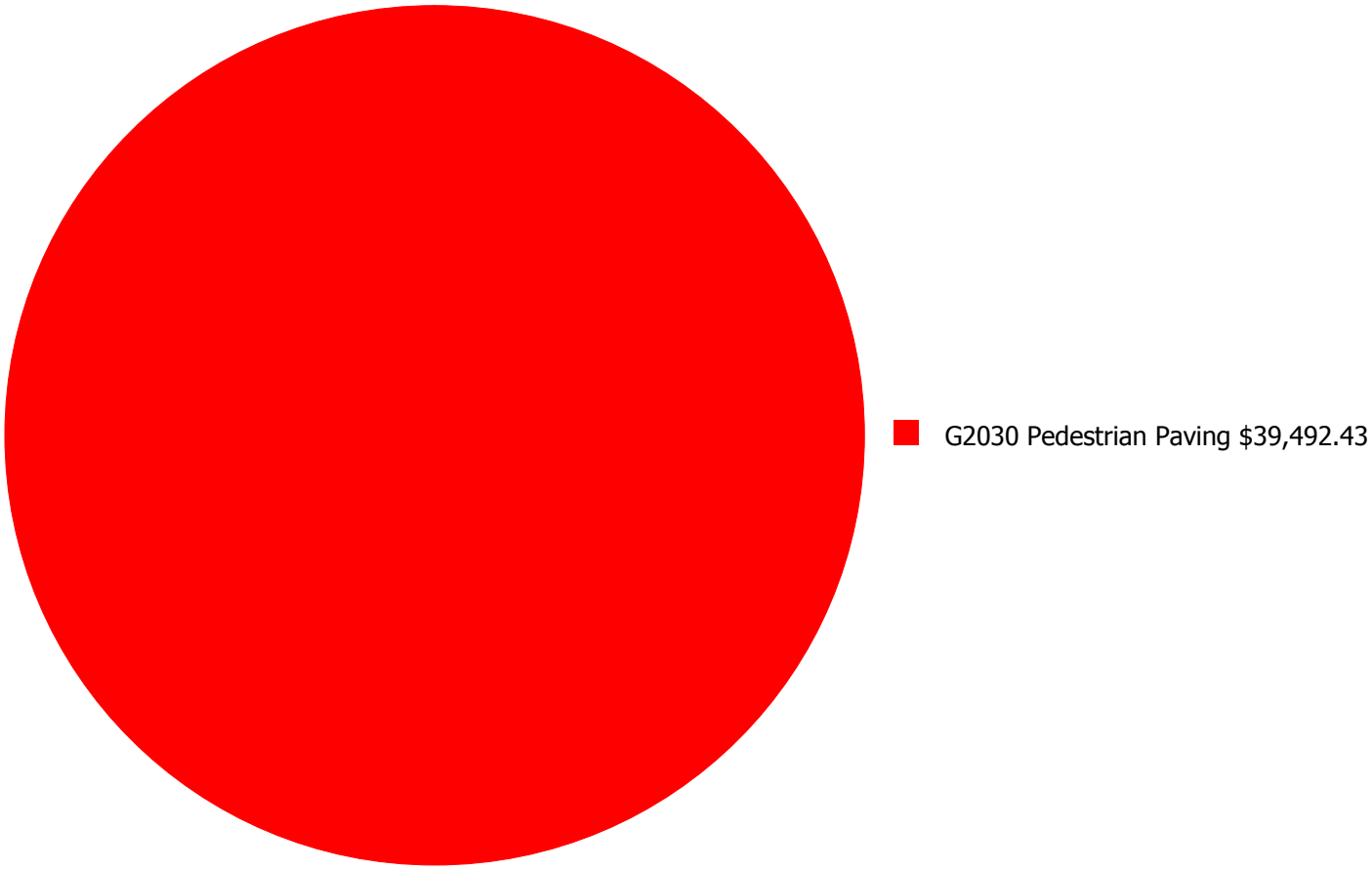
### Facility Investment vs. FCI Forecast




| Year | Investment Amount Current FCI - 109.37% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $744.00 | 107.37 % | $1,488.00 | 105.37 % |
| 2017 | $0 | $766.00 | 105.37 % | $1,532.00 | 101.37 % |
| 2018 | $0 | $789.00 | 103.37 % | $1,578.00 | 97.37 % |
| 2019 | $0 | $813.00 | 101.37 % | $1,626.00 | 93.37 % |
| 2020 | $0 | $837.00 | 99.37 % | $1,674.00 | 89.37 % |
| 2021 | $12,166 | $862.00 | 125.59 % | $1,725.00 | 113.59 % |
| 2022 | $0 | $888.00 | 123.59 % | $1,776.00 | 109.59 % |
| 2023 | $0 | $915.00 | 121.59 % | $1,830.00 | 105.59 % |
| 2024 | $0 | $942.00 | 119.59 % | $1,885.00 | 101.59 % |
| 2025 | $0 | $971.00 | 117.59 % | $1,941.00 | 97.59 % |
| **Total:** | **$12,166** | **$8,527.00** | | **$17,055.00** | |

## Deficiency Summary by System

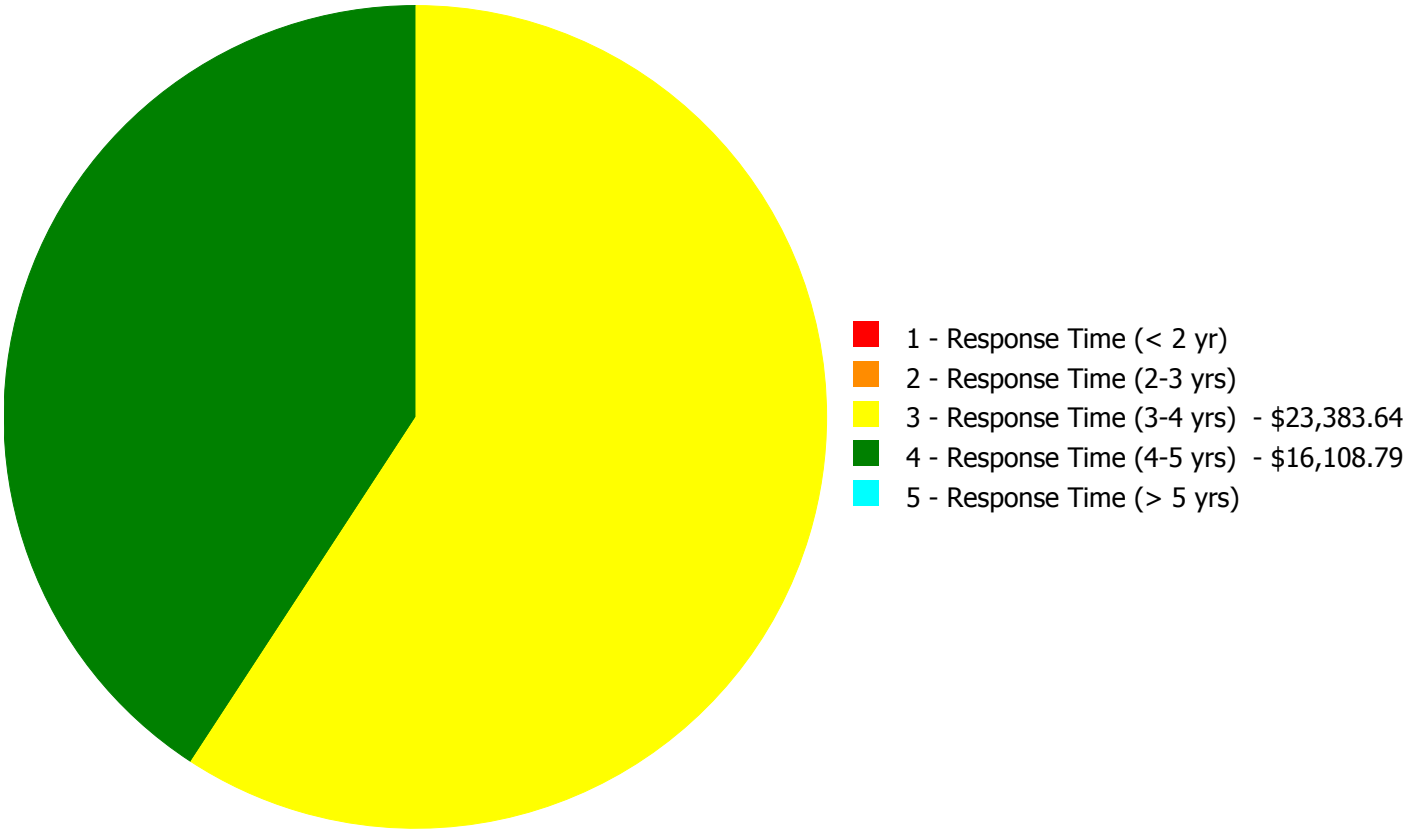
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $39,492.43**

## 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: $39,492.43**

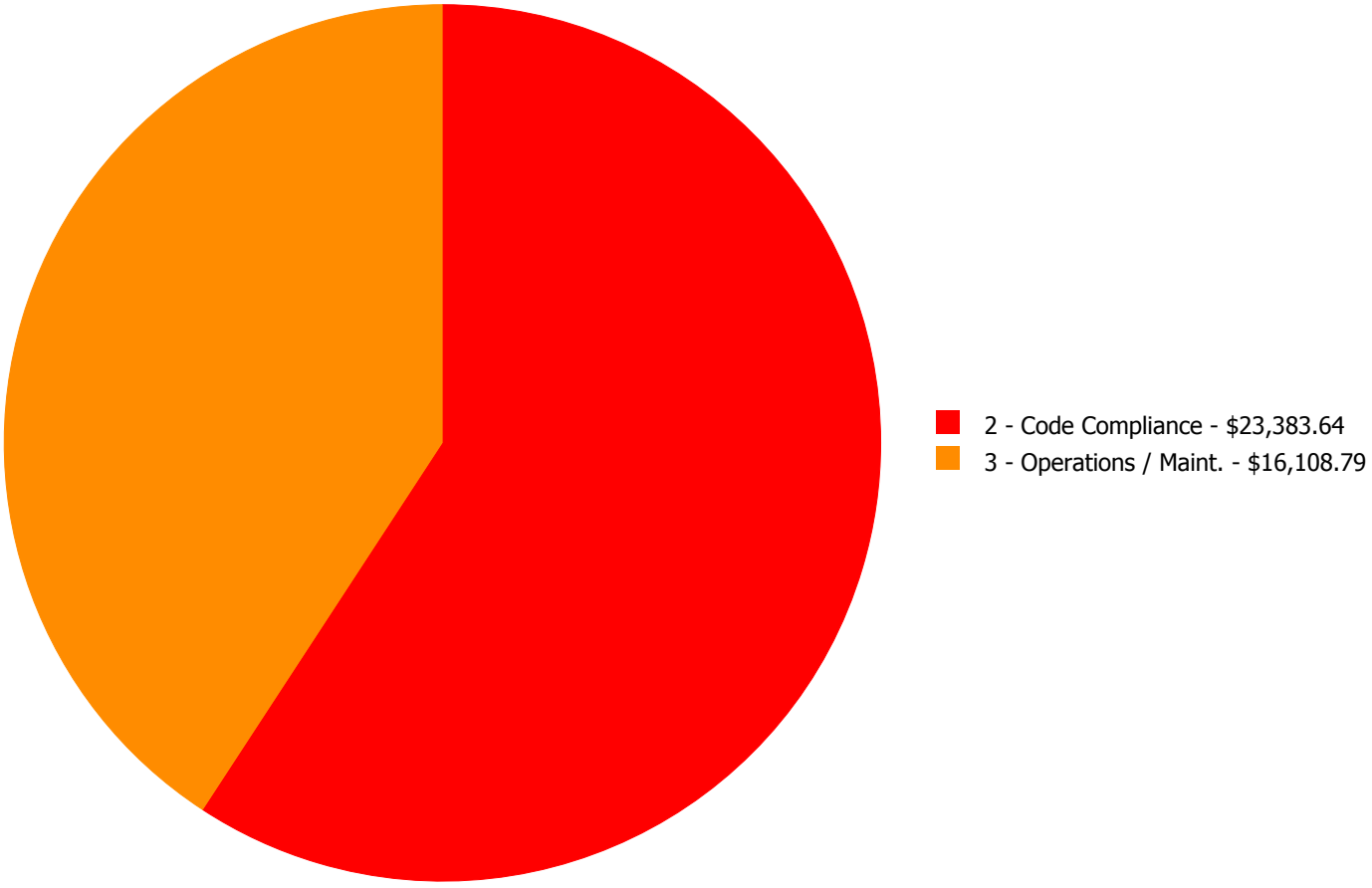
## Deficiency By Priority Investment Table

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

| System Code | System Description | 1 - Response Time (< 2 yr) | 2 - Response Time (2-3 yrs) | 3 - Response Time (3-4 yrs) | 4 - Response Time (4-5 yrs) | 5 - Response Time (> 5 yrs) | Total |
|---|---|---|---|---|---|---|---|
| G2030 | Pedestrian Paving | $0.00 | $0.00 | $23,383.64 | $16,108.79 | $0.00 | $39,492.43 |
| | **Total:** | $0.00 | $0.00 | $23,383.64 | $16,108.79 | $0.00 | $39,492.43 |

## 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: $39,492.43**

## Deficiency Details by Priority

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

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

**System: G2030 - Pedestrian Paving**

**Location:** Grounds

**Distress:** Accessibility

**Category:** 2 - Code Compliance

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

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

**Qty:** 18.00

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

**Estimate:** $23,383.64

**Assessor Name:** Craig Anding

**Date Created:** 01/26/2016

**Notes:** Provide accessible ramp at the main entrance

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

**System: G2030 - Pedestrian Paving**

**Location:** Grounds

**Distress:** Beyond Service Life

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

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

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

**Qty:** 1,120.00

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

**Estimate:** $16,108.79

**Assessor Name:** Craig Anding

**Date Created:** 01/26/2016

**Notes:** Provide concrete paving in service yard

## 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 |