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.

Blaine School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	3001 W. Berks St.	Enrollment	464
	Philadelphia, Pa 19121	Grade Range	'00-08'
Phone/Fax	215-684-5085 / 215-684-8858	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Blaine	Turnaround Model	Turnaround

Building/System FCI Tiers

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

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

Building and Grounds

	FCI	Repair Costs	Replacement Cost
Overall	**42.45%**	**$18,984,362**	**$44,726,676**
Building	42.62 %	$18,226,642	$42,762,983
Grounds	38.59 %	$757,720	$1,963,693

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	03.58 %	$33,882	$945,500
Exterior Walls (Shows condition of the structural condition of the exterior facade)	04.95 %	$161,447	$3,259,780
Windows (Shows functionality of exterior windows)	92.38 %	$1,469,410	$1,590,589
Exterior Doors (Shows condition of exterior doors)	126.44 %	$161,922	$128,060
Interior Doors (Classroom doors)	184.67 %	$572,470	$309,993
Interior Walls (Paint and Finishes)	00.00 %	$0	$1,166,668
Plumbing Fixtures	03.67 %	$43,809	$1,194,046
Boilers	47.82 %	$788,465	$1,648,878
Chillers/Cooling Towers	65.60 %	$1,418,334	$2,162,000
Radiators/Unit Ventilators/HVAC	135.40 %	$5,140,625	$3,796,748
Heating/Cooling Controls	158.90 %	$1,894,586	$1,192,280
Electrical Service and Distribution	135.74 %	$1,162,892	$856,675
Lighting	37.45 %	$1,146,878	$3,062,834
Communications and Security (Cameras, Pa System and Fire Alarm)	45.28 %	$519,498	$1,147,238

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

S422001;Blaine

Final

Site Assessment Report

January 30, 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):	88,317
Year Built:	1966
Last Renovation:	
Replacement Value:	$44,726,676
Repair Cost:	$18,984,362.31
Total FCI:	42.45 %
Total RSLI:	68.97 %

Description:

Facility Assessment
December 2015

School District of Philadelphia
Blaine Academics Plus School Pre-K to 8
3001 W. Berks Street
Philadelphia, PA 19121

88,317 SF / 775 Students / LN 04

GENERAL

The Blaine Academics Plus School is identified as B422001 and was originally designated as the James G Baine Public School. This facility is located at 3001 W. Berks Street, Philadelphia, PA. The design of the L-shaped, concrete and steel-framed building includes brick facades with a concrete foundation. Constructed in 1966 the school has had no additions.

The main entrance faces the southern exterior facing the street side drop off area. General parking is north of the school. This School serves students in grades Pre K to 8 and has a partial basement with three stories consisting of a total gross square footage of 88,317 GSF.

This school has several classrooms, a library, kitchen and student commons, Auditorium and cafeteria, with supporting administrative spaces.

The information for this report was collected during a site visit on December 9, 2015.

Mr. Emil Latson, Building Engineer, accompanied the assessment team on a tour of the school and provided detailed information on the building systems and maintenance history.

Structural / exterior closure

Foundations are concrete and appear to be in good condition. The superstructure is concrete and steel framed with masonry support and likewise in good condition. The structure reportedly rests on a modified slab-on-grade foundation with interior columns resting on spread footings.

Basement walls are concrete and appear to be in good condition. Floor structure appears to be reinforced, cast-in-place concrete. The roof structure is metal decking on steel joists and has a built-up surface.

The exterior brick surfaces are generally in fair to good condition for their age. In some locations, bricks have cracked or spalled and should be replaced. The repointing of deteriorated mortar joints is also recommended, using mortar of a similar color and consistency as the original. Following the detailed examination of the brick and repair of mortar construction joints, the entire building should be pressure washed to remove stains and embedded pollutants. If moisture is found to be penetrating the masonry facade, the application of a spray sealant to the suspected exterior masonry surface is recommended.

The windows appear to be original to the buildings construction several of the windows no longer work and will require attention prior to an overall effort. The windows are in poor condition. The entire exterior window system is recommended to be replaced with units that retain their dimensions and profiles, but that incorporate updated energy-efficient features.

The exterior doors are metal applications with metal frames. The exterior door system for this school is a very high traffic system. The doors are in fair condition but are aging at a faster rate than expected based on traffic and condition. The exterior door system and service doors are recommended for upgrade. The new doors are expected to retain their dimensions and profiles, but that incorporate updated energy-efficient features.

Special consideration for those that may be physically challenged was not a main factor in the construction of this school. Currently there is no ADA access to the main entrance or supported interior path of travel.

The built up roof was installed within the past ten years as reported by the school. The roof is in very good condition with few exceptions. Currently there is an active leak that if not repaired soon will start to deteriorate the insulation and the integrity of the classroom finishes. This deficiency provides a budgetary consideration for built up roof repair for this section.

Interior partitions include painted CMU, glazed block and moveable partitions. Generally the interior partitions are in good condition.

There are several movable partitions that remain in classrooms. These wall systems are no longer used and in most cases cannot be used due to damage or wall modifications to support classroom needs. This deficiency provides a budgetary consideration to remove and replace the wall systems with universal removal of the existing movable partitions and upgrades to a permeate wall systems.

Interior doors are typically wood in metal frames with glass glazing. Other interior doors include wooden glass pane doors with original wooden pane frames, hollow metal in hollow metal frames. Doors are generally in fair condition considering the age of the application. It was reported during the time of the inspection that several locksets and frames have been repaired. Several of the locks are lose and the doors after several repairs are becoming less functional with each effort. Universal upgrades are required for the interior door systems, it is recommended that the interior doors system be removed and replaced with a new modern metal framed wooden door system with consideration for ADA compliance.

Fittings include: chalkboards; marker boards; tack boards; interior signage; metal lockers; toilet accessories and wood/metal/marble toilet partitions; fixed storage shelving.

There are several tack boards in the hallways for student displays. The systems are damaged and beyond the expected service life for this application. Remove and replace tack boards is recommended.

Some of the classroom chalk boards are original to the buildings construction. This system is damaged and beyond its expected life, universal upgrades are warranted. Remove and upgrade damaged chalk boards to new marker board systems.

There is no directional signage and room signage is a custom design in places and scarce or painted with no consistency in others. Accessibility signage criteria have been established for the physically challenged. These include mounting heights, contrast and finish, raised and Braille characters and pictograms, and character proportions and heights. It is recommended that compliant signage be installed throughout the building.

Current requirements for stairs indicate that they have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future efforts should include comprehensive stair railing removal and replacement upgrades.

Interior wall finishes are typically painted CMU. The wall finishes are generally in good condition.

The floor finish for this school is a combination of terrazzo in the main entrance area, tile in the kitchen and service areas, concrete hallways and stirs finishes and a vinyl tile finish. The vinyl tile finish is a 12 x 12 and 9 x 9 application and is suspect to contain asbestos. This finish is recommended for upgrade to a new 12 x 12 vinyl tile application. Suspected asbestos containing materials (ACM) are believed to be limited to the original vinyl floor tile and mastic. While currently sound and manageable in place, future renovation efforts should include provision to test and abate any and all ACM.

The ceiling finish is a mix of painted and 2 x 4 Acoustical tile finish. Ceilings have been repaired in several areas and is in good condition considering the age of the application and the current condition of the school. There were no issues that surfaced during the time of the inspection therefore no projects or recommendations are required at this time.

Elevators are present at this school.

Institutional equipment includes: library equipment; stage equipment; instrumental equipment; A/V equipment; and laboratory equipment; exterior basketball backstops, etc. Other equipment includes kitchen equipment; loading dock bumpers.

Furnishings include: fixed casework; window blinds; and fixed auditorium seating.

The fixed seating for this school is from the original construction. The systems are in fair condition considering the age and usage. This project provides a budgetary consideration for universal upgrades for the fixed seating and furnishing of this school. Ensure that ADA requirements are followed with the new seating layout.

The school stage has a stage curtain assembly that appears to be from the original construction. Modern applications are typically fire -proof applications with adjustable tracks and electric support for operation. The curtains are torn in a few section and the track is not functioning properly, overall the system is in fair condition. It is recommended that the curtain and track system be upgraded to a new system. Special care should be considered in regards to modern fire proofing for the new installation.

MECHANICAL SYSTEMS

PLUMBING- Plumbing fixtures are standard china commercial quality with wall mounted lavatories and urinals and both wall and floor mounted water closets. Lavatories have dual wheel handle faucets and urinals and water closets have manual flush valves with lever operators or recessed flush valves. Water coolers are stainless steel single or dual level type. There are some counter top stainless steel sinks. The kitchen has a residential double sink.

Hot water is provided by three Paloma instantaneous gas water heaters in the mechanical room connected to a type B vent system. Each heater has a small circulator and there is a system recirculating pump. An abandoned domestic heat exchanger is in the mechanical room. Two 7 ½ hp end suction pumps were designed to maintain building water pressure, but both are inoperable. A duplex sump pump is in the mechanical room.

Sanitary, waste and vent piping is hub and spigot cast iron. Domestic hot and cold water is insulated rigid copper piping. There is a four inch water service and meter with no backflow preventer and a six inch gas service in the mechanical room. Both services are

connected at N. Stanley St.

The plumbing fixtures have been replaced within the past ten years and should be serviceable twenty five more years. The domestic booster pumps, sump pump and supply piping systems have exceeded the service life and should be replaced. The cast iron piping should be inspected for damage and repaired as required. The water heaters should remain serviceable up to fifteen years. A reduced pressure backflow assembly should be installed in the water service.

HVAC- The building is heated with hot water generated by two Peerless cast iron sectional gas boilers in the mechanical room. The boilers are one hundred twenty hp installed in 1966 and one unit is inoperable. Hot water is circulated to unit ventilator and air handling unit heating coils and cabinet radiation units throughout the building by two 3 hp Armstrong end suction pumps. Hot water piping is insulated welded black steel. Insulation in the mechanical room has asbestos warning labels. Two expansion tanks are suspended overhead. Boilers are connected to a field fabricated insulated vent system to a chimney. Combustion air louvers have motorized dampers and a wall mounted propeller fan ventilates the mechanical room.

Classrooms, IMC and some other spaces have Nesbitt unit ventilators with outside air damper, hot water heating coil, filter, control valve, blower and motor. The gymnasium/cafeteria and auditorium are each served by a horizontal air handling unit mounted above the ceiling in the corridor between the two spaces. Currently the units must be accessed daily through the ceiling grid for service or control.

The toilet rooms have mechanical toilet exhaust with two centrifugal roof ventilators. There is no cooking in the kitchen or exhaust hood. There is no central air conditioning. Some spaces have window air conditioners and the IT room is cooled by a ductless split system.

There is no central control system. Two older duplex air compressors, one disconnected, are in the mechanical room to provide control air.

The boilers, unit ventilators, two air handling units, hot water piping, pumps and control system were part of the original 1966 construction and have exceeded the service life and should be replaced.

FIRE PROTECTION- There is no fire protection system.

ELECTRICAL SYSTEMS

Electrical Service--The building is served by PECO Energy Company with 2.4 kV underground service to a load center unit substation located in Boiler Room 001. The unit substation consists of a 2.4 kV load interrupter switch, transformer section and a 1200A, 208/120V, 3 phase, 4 wire Westinghouse panelboard section with 22 feeder circuit breakers. There is no manufacturer's nameplate information on the load interrupter switch or transformer. Based on the Ampacity of the panelboard, it is estimated the transformer is 500 kVA. This distribution panelboard feeds the elevator, mechanical equipment and (14) panelboards located throughout the building. There is not circuit identification on any of the feeder circuit breakers. All of this equipment is original 1966 equipment and is beyond its useful service life.

The replacement substation rating should be sized to allow capacity for central air conditioning equipment.

Receptacles--Most of the classrooms are provided with only a few duplex receptacles, which is not adequate for today's classroom environment. An additional 6 to 8 duplex receptacles should be provided in each of the 32 classrooms using a surface metal raceway system. Computer Room 311 has a floor mounted metal raceway system with duplex receptacles on each side of the room for computer station power. The raceway and receptacles are in poor condition. Replacement of approximately 40 feet of surface raceway and (24) duplex receptacle is included in this report

Lighting-- Except for lighting fixtures in the First, Second and Third Floor corridors, restrooms and five (5) classrooms on the Third Floor, all fluorescent lighting fixtures have obsolete T12 lamps. Replacement of these fluorescent fixtures is recommended within 3 to 4 years. Classrooms typically have surface mounted 2x4 modular fluorescent fixtures or 2x4 recessed grid fixtures with acrylic prismatic lenses and T12 lamps. Classroom lighting is usually controlled by two wall switches. Lighting fixtures in the corridors, stairwells and restrooms are surface mounted 1x4 modular or wraparound fluorescent fixtures.

The Auditorium and IMC have 2x4 recessed troffers with acrylic prismatic lenses and T12 lamps. The platform in the Auditorium has two rows of theatrical batten lighting and (12) shallow dome incandescent fixtures for worklights. There is no dimming system for the auditorium/platform. Lighting is controlled by branch circuit breakers in the panelboards on the platform. The cafeteria/gymnasium has (20) high intensity discharge industrial type fixtures and incandescent fixtures that are used for emergency lighting. Fixtures are in fair

to poor condition. This report includes replacement of lighting fixtures in the Auditorium and cafeteria/gymnasium and retrofitting platform worklights with LED lamps for improved energy efficiency and reduced maintenance cost.

Lighting fixtures in the Basement corridors, Boiler Room and mechanical spaces are mainly incandescent.

Wall pack floodlighting fixtures are mounted on the perimeter of the building to illuminate the perimeter of the building and paved play area. The Visitor Entrance and the exit discharge from the Auditorium have lighting fixtures outside the exit discharge. There are seven (7) exit discharges on the north side of the building that do not have lighting fixtures. The addition of lighting fixtures at these exit discharges is included in this report.

Fire Alarm System-- The fire alarm system is an obsolete 120V wired system that includes only manual pull stations and bell notification appliances. The fire alarm control panel (FACP) is by Edwards, and is located in Boiler Room 001 on the north wall, behind the unit substation. There is also a General Electric EST 2 FACP in the same room that is tied into the exiting Edwards FACP. Pull station mounting heights exceed ADA requirements. There are no visual notification appliances in the building. The entire fire alarm system needs to be replaced with an addressable type to meet current NFPA codes and ADA requirements.

Telephone/LAN-- The telephone system demarcation point is located in Boiler Room 001. The Main Distribution Frame (MDF) and telephone distribution system equipment is located in Room 209A. A telephone and data outlet is provided in each classroom. Wireless access points are provided in classrooms, offices, cafeteria/auditorium, IMC, and cafeteria/gymnasium for Wi-Fi service throughout the entire school.

Public Address/Paging/Intercom Systems-- The paging system is accessed through the telephone system. The paging system interface equipment, volume attenuators and 250W amplifier are located in the Main Distribution Frame/Telecom Room 209A.

Recessed ceiling mounted paging speakers are provided in corridors and rooms with acoustical ceiling tile. Ceiling recessed or wall mounted speakers and clock/speaker assemblies are located in classrooms. Trumpet horns are provided in the cafeteria/gymnasium, mechanical rooms and on the exterior of the building. The paging system is in good condition with an estimated remaining useful life that extends beyond this report. An Aiphone intercom station is located at the Visitor Entrance.

Clock and Program System-- There is a Standard Electric Time 1400 Master Time Programmer panel in the Main Office. The program system was reported to be in good working order. Clock/speaker assemblies are provided in classrooms, IMC, auditorium, teachers lounge, offices, etc. Individual clocks are provided in the gymnasium and other rooms. The clock system has reached the end of its useful service life. It is recommended that all clocks be replaced with battery operated synchronized clocks controlled by a wireless GPS master clock system.

Television Distribution System-- There is no television distribution system in this school.

Video Surveillance and Security Systems-- The video surveillance system equipment is located in Room 105A. Video surveillance cameras are located primarily in corridors, stairwells, cafeteria/gymnasium and on the building exterior. Cameras were reported to be fair condition, with replacement recommended in 3 to 4 years. There is a 16 channel digital video recorder (DVR) and monitor in the Main Office.

Magnetic door contacts are provided on corridor stairwell doors. A security keypad to arm/disarm the security system is provided.

Emergency/Standby Power System-- A 15 kW/18.8 kVA, 208/120V, 3 phase, 4 wire Onan standby generator with natural gas fuel supply is located in Boiler Room 001. The generator supplies a 100A emergency lighting panelboard via an Onan 100A automatic transfer switch (ATS). The generator, ATS and emergency panelboard have exceeded their useful lives. The replacement standby power system should be sized with capacity to provide standby power for the electric traction elevator (estimated size is 80 kW minimum).

Emergency Lighting System / Exit Lighting-- Emergency egress lighting fixtures and exit signs are connected to the emergency lighting panelboard in Boiler Room 001. There were also some remote emergency lighting heads located in corridors and stairwells, but no evidence of any battery packs that power these remote heads. Remote heads should be removed if no longer used for emergency lighting. The exit signs are incandescent type and in poor condition, many that are not illuminated. Replacement with LED type exit signs is included in this report.

Lightning Protection System--The building does not have a lightning protection system.

Conveying Systems-- There is one electric traction passenger elevator by United Elevator Company with a Motion Control Engineering

controller. The machine room is located in the Basement adjacent to the elevator. The elevator was upgraded in 2010 and is in good condition with a remaining useful life extending beyond this report. The elevator is provided with a separate safety switch for the cab lighting. A smoke detector is located in the elevator lobby on each floor.

GROUNDS

The existing sidewalk system is a mix of the original sidewalks installed during the construction of the school and sections that have been replaced over the years. There are a several areas of cracking concrete but no tripping hazards. Sections of the sidewalk system is expected to expire in the near future. Removal of the damaged sections is recommended. Upgrades are required and should include all aspects of current ADA legislation.

The parking play area has no assigned parking and limited markers for approved activity areas. No curb cuts for access to the sidewalks that lead to the ADA main entrance. The parking play lot is in fair condition, the harsh environmental conditions associated with snow removal have taken its toll on the asphalt surface. Also, there is no marked path of ingress to the main entrance. This project provides a budgetary consideration for a play, parking lot renewal program that includes all aspects of the current ADA legislation. Asphalt removal and replacement is recommended.

The picket fence and chain link fence that partially surrounds this school is in good condition. Sections of the chain link fence was replaced recently and a new gate was installed. With this in mind there are no recommendations for the fence system at this time.

There is very limited landscaping along the main entrance. This small turfed area is well maintained and no issues surfaced during the time of the inspection. No recommendations are required at this time.

Site Lighting-- Other than the building mounted wall packs, there are three (3) site lighting poles along the fence line on the north side of the site between the paved play and parking areas. Two of the poles have three floodlights each and one pole has two floodlights. The poles and floodlights are in good condition. Exterior lighting is controlled by time clock. There are no recommendations for replacement at this time.

Site video surveillance-- There are two (2) building mounted video surveillance cameras that provide surveillance coverage; one on the southeast corner of the building and one on the northeast corner of the west wing to provide coverage of the paved play area. It is recommended that two additional exterior cameras be provided; one at the Visitor Entrance and one on the north side of the east wing for enhanced coverage of the play area.

RECOMMENDATIONS

- Upgrade stair guard and hand rails
- Brick point and tuck upgrades
- Upgrade exterior windows
- Upgrade exterior doors
- Replace section of Built up roof
- Remove folding partitions
- Upgrade interior door system
- Upgrade tack boards
- Remove and replace chalk boards
- Remove and replace signage package
- Remove and replace vinyl floor finish
- Upgrade Auditorium seating
- Sidewalk upgrades
- Site asphalt removal and replacement
- Replace the existing unit ventilators with new units designed for quiet operation and equipped with hot water and chilled water coils, hydronic control valves with digital controls and integral heat exchangers to provide code required fresh air quantities. Connect to new chilled and hot water piping systems and building automation control system.
- Remove the window air conditioners and install a two hundred fifty ton chilled water system with air cooled chiller, pumps, glycol system, piping and controls. Include electrical connections.
- Install complete NFPA wet pipe automatic sprinkler system and standpipes. If required provide fire pump and jockey pump with controller.
- Provide a new central station air handling unit for the cafeteria/ gymnasium with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems and control system.
- Install new direct digital control system and building automation system with remote computer control capability and graphics

package.
- Inspect old cast iron sanitary piping including camera observation and replace damaged sections.
- Replace existing duplex sump pump in mechanical room.
- Install new domestic water booster pump system with pumps, control panel, pressure tank and electrical connection.
- Install new reduced pressure backflow preventer in four inch water service.
- Replace domestic hot and cold water piping including valves, fittings, hangars and insulation.
- Provide a duplex booster pump system. Include electrical connection.
- Replace two existing boilers with new units.
- Replace two existing hot water pumps. Include electrical connections.
- Provide a new central station air handling unit for the auditorium with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems and control system.
- Replace residential kitchen sink with three compartment stainless steel commercial sink.
- Replace the 500 kVA 2.4 kV-208/120V, 3 phase, 4 wire, 1200A load center unit substation with a 1000 kVA, 3000A unit substation, which allows capacity for central air conditioning equipment.
- Replace all (14) panelboards throughout the building, including their feeder conductors.
- Provide surface metal raceway system with 6 to 8 duplex receptacles in each of 32 classrooms.
- Replace floor mounted raceway system and (24) duplex receptacles in Computer Room 311.
- Replace all fluorescent lighting fixtures having T12 lamps, and associated branch circuit wiring throughout the building, with fixtures having T8 lamps (classrooms and IMC 35,825 SF; offices, faculty areas and miscellaneous areas 6,470 SF; mechanical and storage areas 8,285 SF).
- Replace (25) 2x4 recessed fluorescent lighting fixtures with acrylic prismatic lenses in the Auditorium with fixtures having T8 or T5 lamps.
- Replace (20) high intensity discharge (HID) industrial fixtures in the cafeteria/gymnasium with LED industrial fixtures. Remove the incandescent fixtures that are used for emergency lighting and use the LED fixtures for emergency lighting.
- Provide LED wall mounted fixtures at seven (7) exit discharges on the north side of the building.
- Replace fire alarm system with an addressable type system meeting current NFPA Codes and ADA requirements.
- Remove all clocks and provide wireless GPS master clock system with battery operated synchronized clocks (estimate 57 clocks).
- Replace video surveillance system equipment, including (14) interior cameras, one 16 channel digital video recorder (DVR) and one monitor. Add a second 16 channel DVR.
- Replace the 15 kW standby generator and automatic transfer switch (ATS). Increase generator size to at least 80 kW to allow capacity to provide standby power for the electric traction elevator.
- Replace all exit signs with LED type (estimate 35 exit signs).
- Replace two (2) exterior video surveillance cameras, one on the southeast corner of the building and one on the northeast corner of the west wing to provide coverage of the paved play area. It is recommended that two additional exterior cameras be provided, one at the Visitor Entrance and one on the north side of the east wing for enhanced coverage of the play area.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 1
Status:	Accepted by SDP	Team:	Tm 1
Site ID:	S422001		

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.

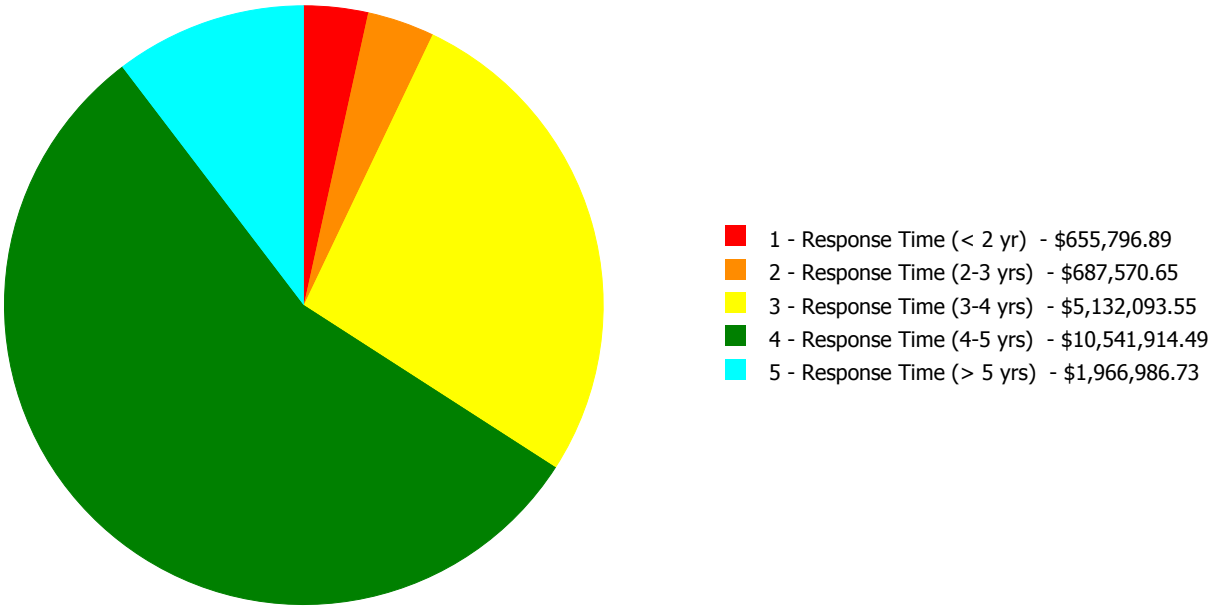
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	51.00 %	0.00 %	$0.00
A20 - Basement Construction	51.00 %	0.00 %	$0.00
B10 - Superstructure	51.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	44.21 %	36.01 %	$1,792,778.97
B30 - Roofing	60.00 %	3.58 %	$33,882.01
C10 - Interior Construction	45.33 %	35.49 %	$769,185.88
C20 - Stairs	51.00 %	12.50 %	$15,569.46
C30 - Interior Finishes	66.65 %	17.64 %	$758,333.40
D10 - Conveying	48.57 %	0.00 %	$0.00
D20 - Plumbing	75.30 %	55.38 %	$998,722.89
D30 - HVAC	96.30 %	94.07 %	$9,242,011.03
D40 - Fire Protection	92.47 %	177.49 %	$1,263,416.27
D50 - Electrical	107.16 %	57.37 %	$2,978,148.28
E10 - Equipment	34.29 %	0.00 %	$0.00
E20 - Furnishings	30.00 %	199.13 %	$374,593.75
G20 - Site Improvements	36.00 %	51.44 %	$740,280.66
G40 - Site Electrical Utilities	76.67 %	3.32 %	$17,439.71
Totals:	**68.97 %**	**42.45 %**	**$18,984,362.31**

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)
B422001;Blaine	88,317	42.62	$655,796.89	$668,718.13	$4,407,608.55	$10,541,914.49	$1,952,603.88
G422001;Grounds	90,300	38.59	$0.00	$18,852.52	$724,485.00	$0.00	$14,382.85
Total:		**42.45**	**$655,796.89**	**$687,570.65**	**$5,132,093.55**	**$10,541,914.49**	**$1,966,986.73**

Deficiencies By Priority



Budget Estimate Total: $18,984,362.31

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):	88,317
Year Built:	1966
Last Renovation:	
Replacement Value:	$42,762,983
Repair Cost:	$18,226,641.94
Total FCI:	42.62 %
Total RSLI:	69.99 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B422001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S422001		

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	51.00 %	0.00 %	$0.00
A20 - Basement Construction	51.00 %	0.00 %	$0.00
B10 - Superstructure	51.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	44.21 %	36.01 %	$1,792,778.97
B30 - Roofing	60.00 %	3.58 %	$33,882.01
C10 - Interior Construction	45.33 %	35.49 %	$769,185.88
C20 - Stairs	51.00 %	12.50 %	$15,569.46
C30 - Interior Finishes	66.65 %	17.64 %	$758,333.40
D10 - Conveying	48.57 %	0.00 %	$0.00
D20 - Plumbing	75.30 %	55.38 %	$998,722.89
D30 - HVAC	96.30 %	94.07 %	$9,242,011.03
D40 - Fire Protection	92.47 %	177.49 %	$1,263,416.27
D50 - Electrical	107.16 %	57.37 %	$2,978,148.28
E10 - Equipment	34.29 %	0.00 %	$0.00
E20 - Furnishings	30.00 %	199.13 %	$374,593.75
Totals:	**69.99 %**	**42.62 %**	**$18,226,641.94**

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.

Site Assessment Report - B422001;Blaine

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.	88,317	100	1966	2066		51.00 %	0.00 %	51			$1,625,033
A1030	Slab on Grade	$7.73	S.F.	88,317	100	1966	2066		51.00 %	0.00 %	51			$682,690
A2010	Basement Excavation	$6.55	S.F.	88,317	100	1966	2066		51.00 %	0.00 %	51			$578,476
A2020	Basement Walls	$12.70	S.F.	88,317	100	1966	2066		51.00 %	0.00 %	51			$1,121,626
B1010	Floor Construction	$75.10	S.F.	88,317	100	1966	2066		51.00 %	0.00 %	51			$6,632,607
B1020	Roof Construction	$13.88	S.F.	25,000	100	1966	2066		51.00 %	0.00 %	51			$347,000
B2010	Exterior Walls	$36.91	S.F.	88,317	100	1966	2066		51.00 %	4.95 %	51		$161,447.36	$3,259,780
B2020	Exterior Windows	$18.01	S.F.	88,317	40	1966	2006	2027	30.00 %	92.38 %	12		$1,469,410.00	$1,590,589
B2030	Exterior Doors	$1.45	S.F.	88,317	25	1966	1991	2027	48.00 %	126.44 %	12		$161,921.61	$128,060
B3010105	Built-Up	$37.76	S.F.	25,000	20	1966	1986	2027	60.00 %	3.59 %	12		$33,882.01	$944,000
B3020	Roof Openings	$0.06	S.F.	25,000	20	1966	1986	2027	60.00 %	0.00 %	12			$1,500
C1010	Partitions	$17.91	S.F.	88,317	100	1966	2066		51.00 %	7.04 %	51		$111,397.49	$1,581,757
C1020	Interior Doors	$3.51	S.F.	88,317	40	1966	2006	2027	30.00 %	184.67 %	12		$572,470.45	$309,993
C1030	Fittings	$3.12	S.F.	88,317	40	1966	2006	2027	30.00 %	30.96 %	12		$85,317.94	$275,549
C2010	Stair Construction	$1.41	S.F.	88,317	100	1966	2066		51.00 %	12.50 %	51		$15,569.46	$124,527
C3010230	Paint & Covering	$13.21	S.F.	88,317	10	2000	2010	2027	120.00 %	0.00 %	12			$1,166,668
C3020412	Terrazzo & Tile	$75.52	S.F.	7,000	50	1966	2016	2027	24.00 %	0.00 %	12			$528,640
C3020413	Vinyl Flooring	$9.68	S.F.	77,317	20	1966	1986	2027	60.00 %	101.32 %	12		$758,333.40	$748,429
C3020415	Concrete Floor Finishes	$0.97	S.F.	4,000	50	1966	2016	2027	24.00 %	0.00 %	12			$3,880
C3030	Ceiling Finishes	$20.97	S.F.	88,317	25	1966	1991	2027	48.00 %	0.00 %	12			$1,852,007
D1010	Elevators and Lifts	$1.53	S.F.	88,317	35	1966	2001	2032	48.57 %	0.00 %	17			$135,125
D2010	Plumbing Fixtures	$13.52	S.F.	88,317	35	2005	2040		71.43 %	3.67 %	25		$43,808.66	$1,194,046
D2020	Domestic Water Distribution	$1.68	S.F.	88,317	25	1966	1991	2042	108.00 %	370.14 %	27		$549,180.63	$148,373
D2030	Sanitary Waste	$2.90	S.F.	88,317	25	1966	1991	2042	108.00 %	158.42 %	27		$405,733.60	$256,119
D2040	Rain Water Drainage	$2.32	S.F.	88,317	30	1966	1996	2025	33.33 %	0.00 %	10			$204,895
D3020	Heat Generating Systems	$18.67	S.F.	88,317	35	1966	2001	2052	105.71 %	47.82 %	37		$788,465.46	$1,648,878
D3030	Cooling Generating Systems	$24.48	S.F.	88,317	30			2047	106.67 %	65.60 %	32		$1,418,334.43	$2,162,000
D3040	Distribution Systems	$42.99	S.F.	88,317	25	1966	1991	2042	108.00 %	135.40 %	27		$5,140,624.94	$3,796,748
D3050	Terminal & Package Units	$11.60	S.F.	88,317	20				0.00 %	0.00 %				$1,024,477
D3060	Controls & Instrumentation	$13.50	S.F.	88,317	20	1966	1986	2037	110.00 %	158.90 %	22		$1,894,586.20	$1,192,280
D4010	Sprinklers	$7.05	S.F.	88,317	35			2052	105.71 %	202.91 %	37		$1,263,416.27	$622,635
D4020	Standpipes	$1.01	S.F.	88,317	35				0.00 %	0.00 %				$89,200
D5010	Electrical Service/Distribution	$9.70	S.F.	88,317	30	1966	1996	2047	106.67 %	135.74 %	32		$1,162,892.09	$856,675
D5020	Lighting and Branch Wiring	$34.68	S.F.	88,317	20	1966	1986	2037	110.00 %	37.45 %	22		$1,146,878.22	$3,062,834
D5030	Communications and Security	$12.99	S.F.	88,317	15	1966	1981	2030	100.00 %	45.28 %	15		$519,497.83	$1,147,238
D5090	Other Electrical Systems	$1.41	S.F.	88,317	30	1966	1996	2047	106.67 %	119.56 %	32		$148,880.14	$124,527
E1020	Institutional Equipment	$4.82	S.F.	88,317	35	1966	2001	2027	34.29 %	0.00 %	12			$425,688
E1090	Other Equipment	$11.10	S.F.	88,317	35	1966	2001	2027	34.29 %	0.00 %	12			$980,319
E2010	Fixed Furnishings	$2.13	S.F.	88,317	40	1966	2006	2027	30.00 %	199.13 %	12		$374,593.75	$188,115
								Total	**69.99 %**	**42.62 %**			**$18,226,641.94**	**$42,762,983**

System Notes

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

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

Note: Painted interior CUM and Concrete 90%
Brick 10%

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

Note: Terrazzo Tile 8%
Vinyl 87%
Concrete 5%

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

Note: There is one (1) 300 kVA, 2.4 kV-208/120V, 3 phase, 4 wire service transformer (estimated rating) and one (1) 15 kVA, 208V-208V, 3 phase secondary isolation transformer for the elevator.

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:	**$18,226,642**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$302,899**	**$18,529,541**
*** 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	$161,447	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$161,447**
B2020 - Exterior Windows	$1,469,410	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,469,410**
B2030 - Exterior Doors	$161,922	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$161,922**
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	$33,882	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$33,882**
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	$111,397	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$111,397**
C1020 - Interior Doors	$572,470	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$572,470**
C1030 - Fittings	$85,318	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$85,318**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

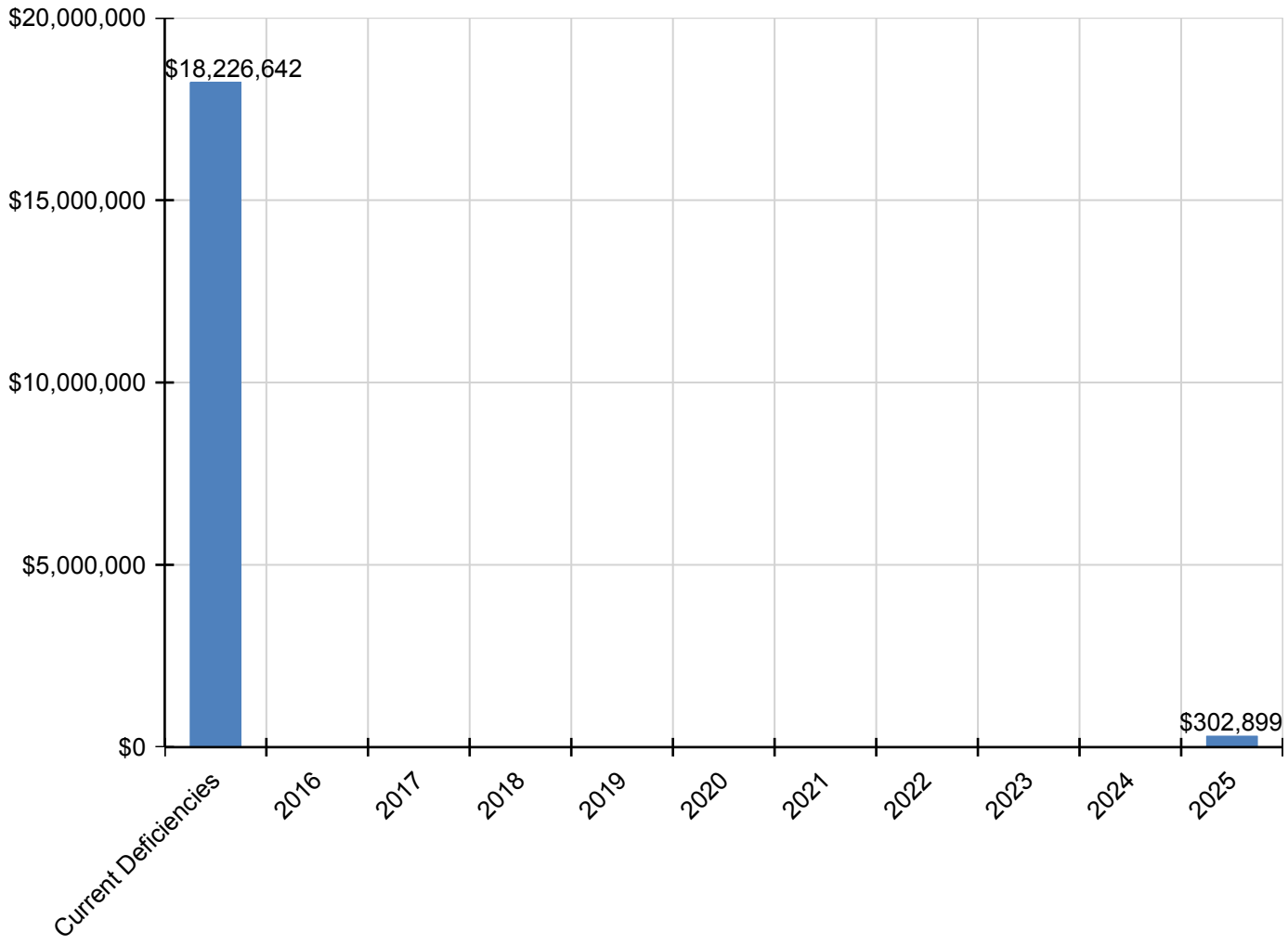
C2010 - Stair Construction	$15,569	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$15,569**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$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	$758,333	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$758,333**
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	$43,809	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$43,809**
D2020 - Domestic Water Distribution	$549,181	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$549,181**
D2030 - Sanitary Waste	$405,734	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$405,734**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$302,899	**$302,899**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$788,465	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$788,465**
D3030 - Cooling Generating Systems	$1,418,334	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,418,334**
D3040 - Distribution Systems	$5,140,625	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$5,140,625**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,894,586	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,894,586**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$1,263,416	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,263,416**
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	$1,162,892	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,162,892**
D5020 - Lighting and Branch Wiring	$1,146,878	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,146,878**
D5030 - Communications and Security	$519,498	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$519,498**
D5090 - Other Electrical Systems	$148,880	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$148,880**
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	$374,594	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$374,594**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

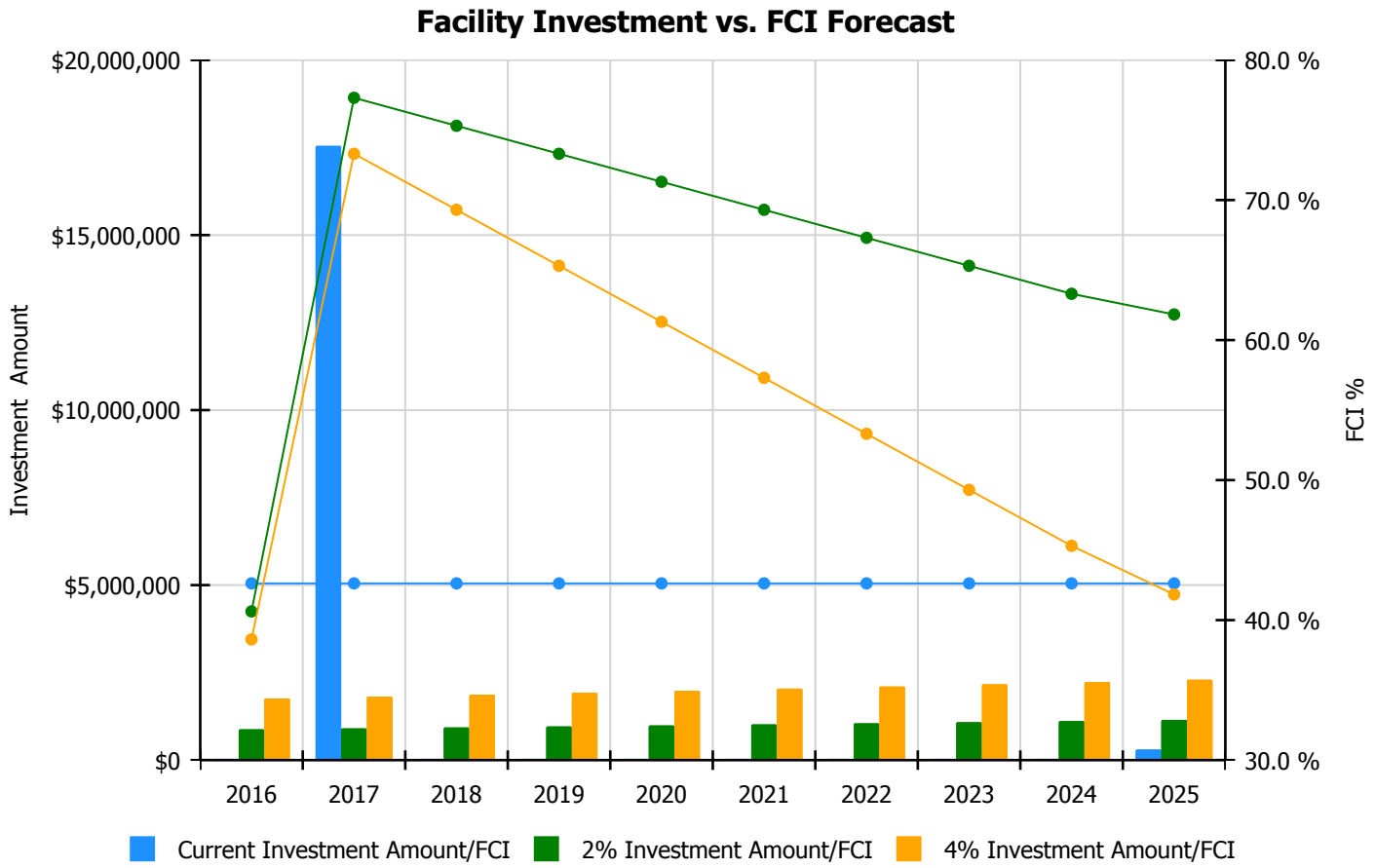
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

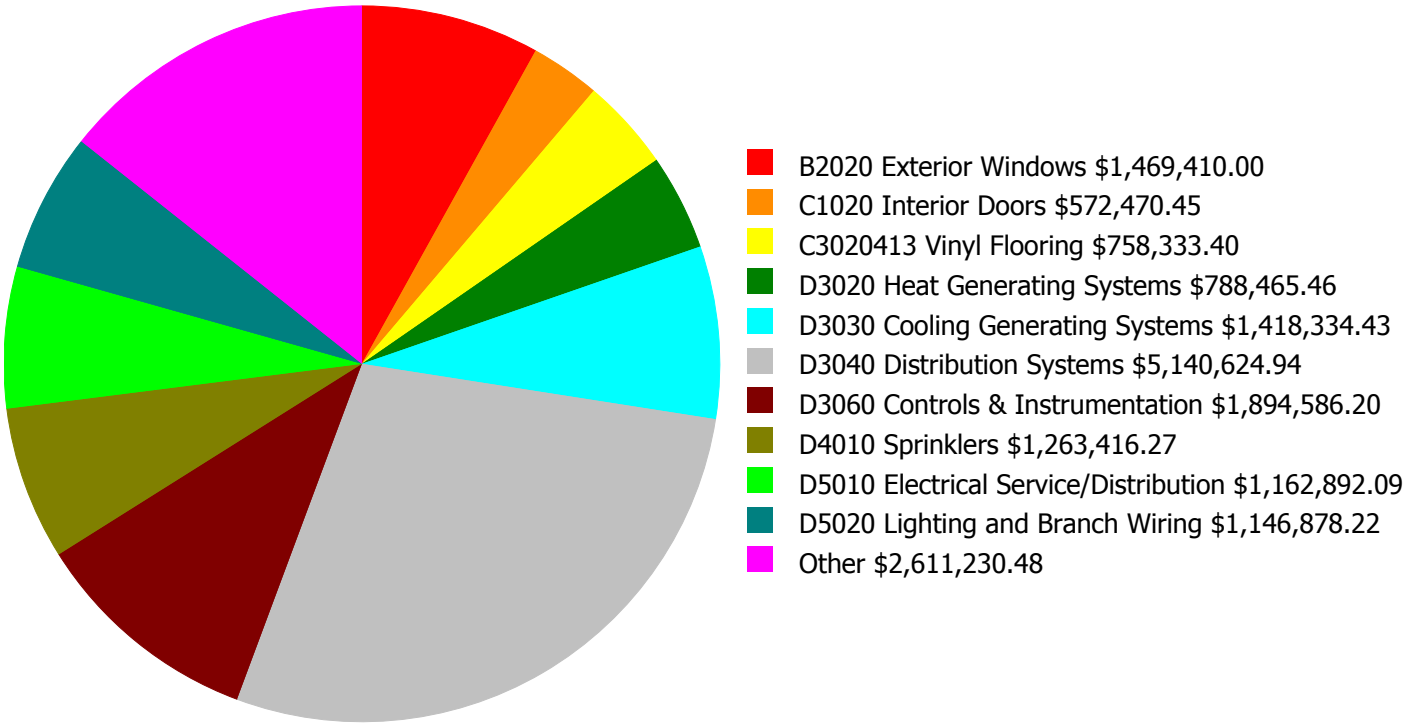
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 42.62%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$880,917.00	40.62 %	$1,761,835.00	38.62 %
2017	$17,548,886	$907,345.00	77.30 %	$1,814,690.00	73.30 %
2018	$0	$934,565.00	75.30 %	$1,869,131.00	69.30 %
2019	$0	$962,602.00	73.30 %	$1,925,205.00	65.30 %
2020	$0	$991,480.00	71.30 %	$1,982,961.00	61.30 %
2021	$0	$1,021,225.00	69.30 %	$2,042,450.00	57.30 %
2022	$0	$1,051,862.00	67.30 %	$2,103,723.00	53.30 %
2023	$0	$1,083,417.00	65.30 %	$2,166,835.00	49.30 %
2024	$0	$1,115,920.00	63.30 %	$2,231,840.00	45.30 %
2025	$302,899	$1,149,397.00	61.83 %	$2,298,795.00	41.83 %
Total:	**$17,851,784**	**$10,098,730.00**		**$20,197,465.00**	

Deficiency Summary by System

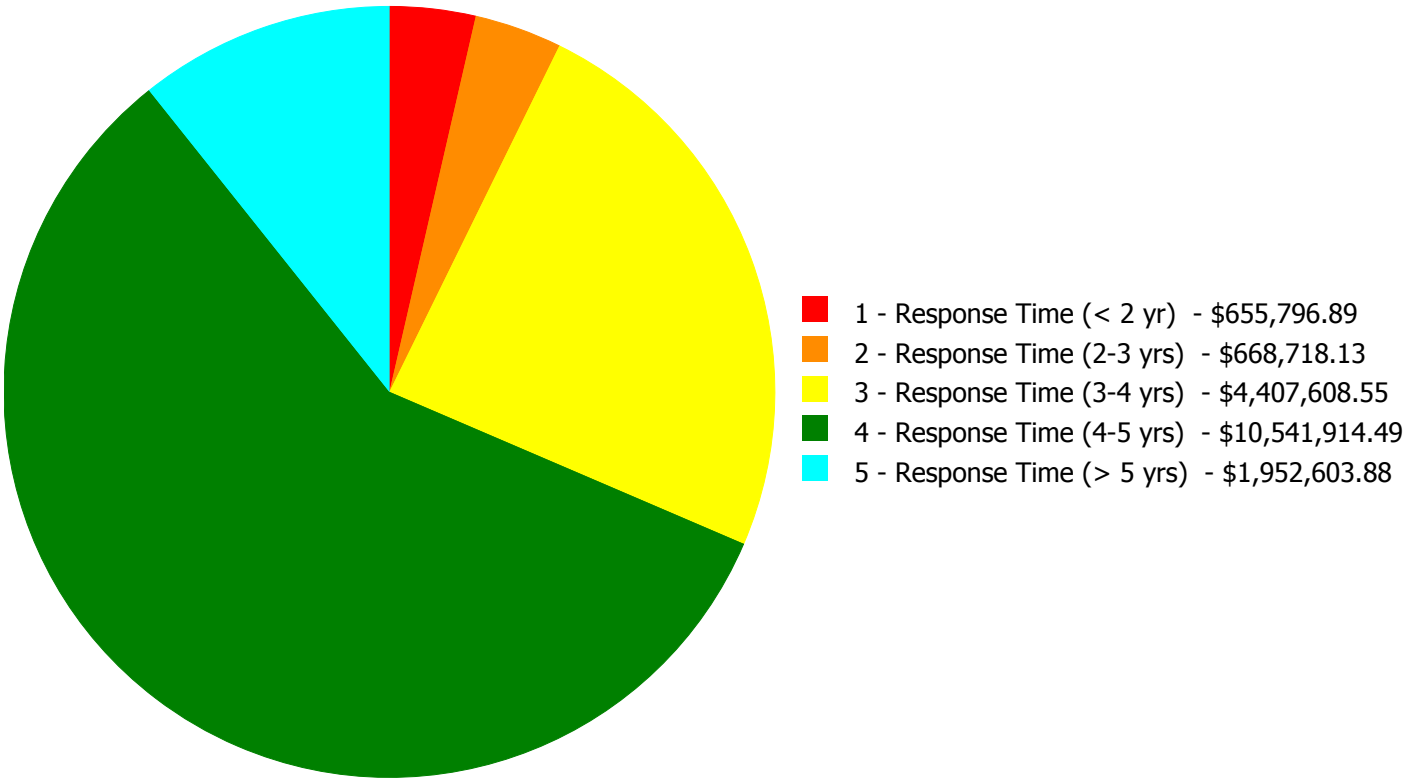
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $18,226,641.94

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: $18,226,641.94

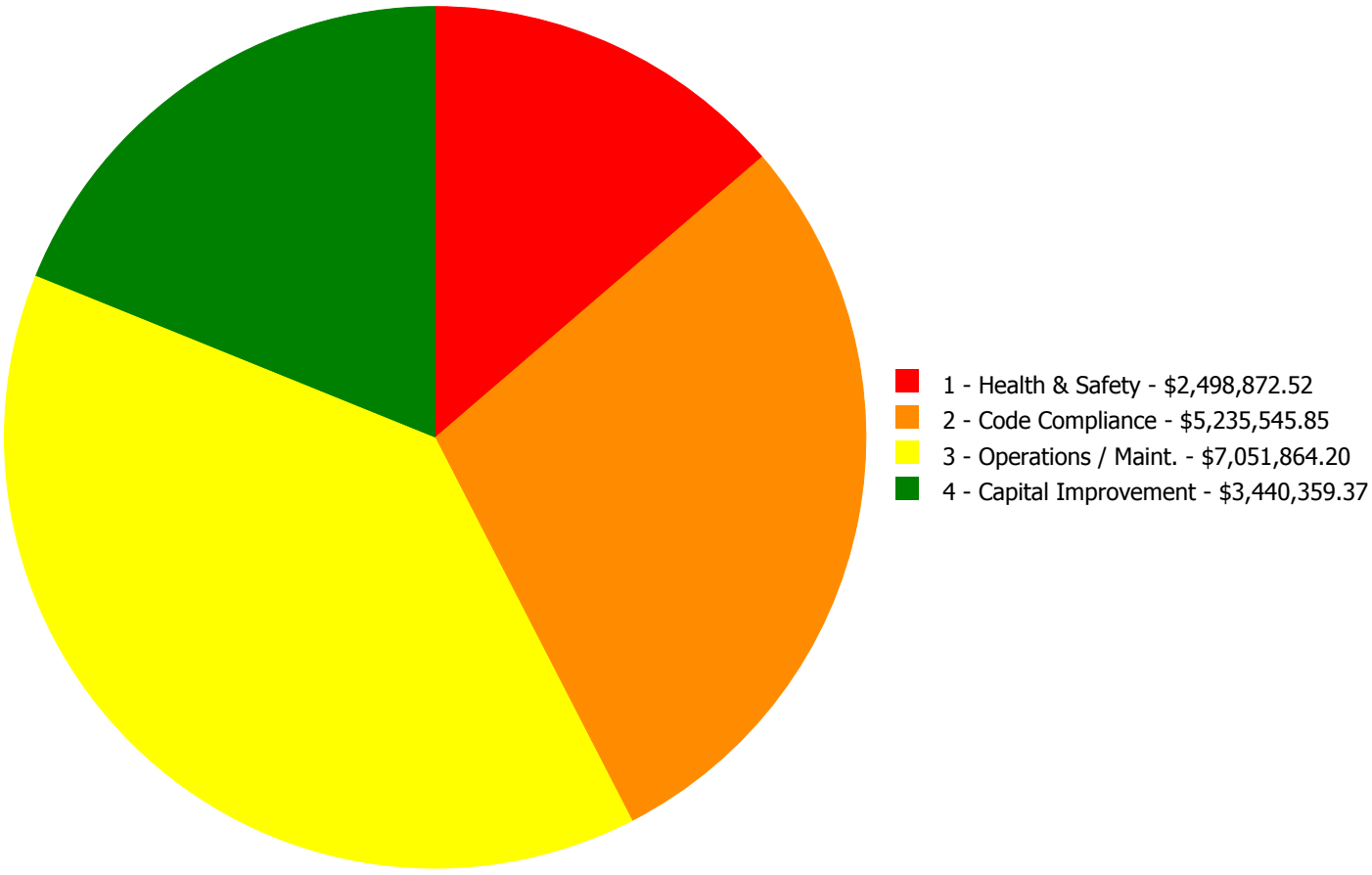
Deficiency By Priority Investment Table

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	$0.00	$161,447.36	$0.00	$161,447.36
B2020	Exterior Windows	$0.00	$0.00	$1,469,410.00	$0.00	$0.00	$1,469,410.00
B2030	Exterior Doors	$0.00	$161,921.61	$0.00	$0.00	$0.00	$161,921.61
B3010105	Built-Up	$0.00	$0.00	$33,882.01	$0.00	$0.00	$33,882.01
C1010	Partitions	$0.00	$0.00	$0.00	$0.00	$111,397.49	$111,397.49
C1020	Interior Doors	$0.00	$0.00	$572,470.45	$0.00	$0.00	$572,470.45
C1030	Fittings	$0.00	$0.00	$0.00	$23,208.18	$62,109.76	$85,317.94
C2010	Stair Construction	$0.00	$15,569.46	$0.00	$0.00	$0.00	$15,569.46
C3020413	Vinyl Flooring	$0.00	$0.00	$0.00	$758,333.40	$0.00	$758,333.40
D2010	Plumbing Fixtures	$0.00	$0.00	$0.00	$43,808.66	$0.00	$43,808.66
D2020	Domestic Water Distribution	$0.00	$0.00	$0.00	$549,180.63	$0.00	$549,180.63
D2030	Sanitary Waste	$0.00	$0.00	$0.00	$405,733.60	$0.00	$405,733.60
D3020	Heat Generating Systems	$655,796.89	$0.00	$0.00	$132,668.57	$0.00	$788,465.46
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$1,418,334.43	$1,418,334.43
D3040	Distribution Systems	$0.00	$0.00	$0.00	$5,140,624.94	$0.00	$5,140,624.94
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$1,894,586.20	$0.00	$1,894,586.20
D4010	Sprinklers	$0.00	$0.00	$0.00	$1,263,416.27	$0.00	$1,263,416.27
D5010	Electrical Service/Distribution	$0.00	$0.00	$1,162,892.09	$0.00	$0.00	$1,162,892.09
D5020	Lighting and Branch Wiring	$0.00	$20,596.90	$990,211.48	$136,069.84	$0.00	$1,146,878.22
D5030	Communications and Security	$0.00	$427,124.94	$59,536.05	$32,836.84	$0.00	$519,497.83
D5090	Other Electrical Systems	$0.00	$29,673.67	$119,206.47	$0.00	$0.00	$148,880.14
E2010	Fixed Furnishings	$0.00	$13,831.55	$0.00	$0.00	$360,762.20	$374,593.75
	Total:	$655,796.89	$668,718.13	$4,407,608.55	$10,541,914.49	$1,952,603.88	$18,226,641.94

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: $18,226,641.94

Deficiency Details by Priority

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

Priority 1 - Response Time (< 2 yr):

System: D3020 - Heat Generating Systems

Location: mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace boiler, cast iron sectional (100 HP)

Qty: 2.00

Unit of Measure: Ea.

Estimate: $655,796.89

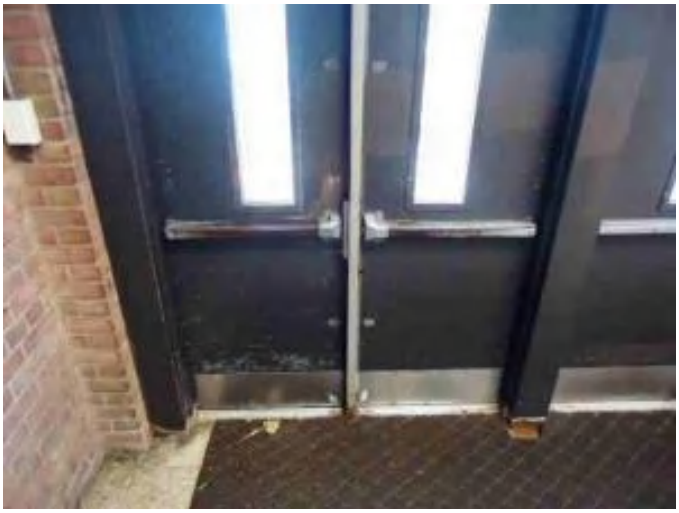
Assessor Name: System

Date Created: 02/12/2016

Notes: Replace two existing boilers with new units.

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

System: B2030 - Exterior Doors



Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 20.00

Unit of Measure: Ea.

Estimate: $161,921.61

Assessor Name: System

Date Created: 02/05/2016

Notes: The exterior doors are metal applications with metal frames. The exterior door system for this school is a very high traffic system. The doors are in fair condition but are aging at a faster rate than expected based on traffic and condition. The exterior door system and service doors are recommended for upgrade. The new doors are expected to retain their dimensions and profiles, but that incorporate updated energy-efficient features.

System: C2010 - Stair Construction

Location: Stairs

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

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

Qty: 1,000.00

Unit of Measure: L.F.

Estimate: $15,569.46

Assessor Name: System

Date Created: 02/05/2016

Notes: Current requirements for stairs indicate that they have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future efforts should include comprehensive stair railing removal and replacement upgrades.

System: D5020 - Lighting and Branch Wiring

Location: Exit discharges

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Add Exterior Lighting

Qty: 7.00

Unit of Measure: Ea.

Estimate: $20,596.90

Assessor Name: System

Date Created: 02/04/2016

Notes: Provide LED wall mounted fixtures at seven (7) exit discharges on the north side of the building.

System: D5030 - Communications and Security

Location: Building wide

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Replace fire alarm system

Qty: 88,317.00

Unit of Measure: S.F.

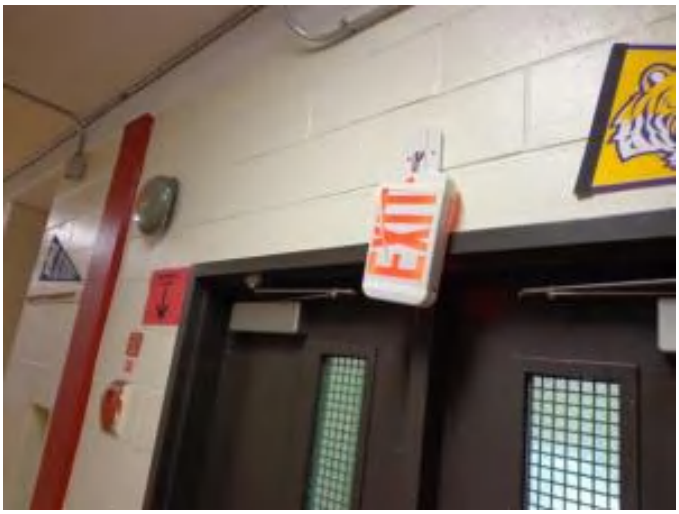
Estimate: $427,124.94

Assessor Name: System

Date Created: 02/04/2016

Notes: Replace fire alarm system with an addressable type system meeting current NFPA Codes and ADA requirements.

System: D5090 - Other Electrical Systems



Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Emergency/Exit Lighting

Qty: 35.00

Unit of Measure: Ea.

Estimate: $29,673.67

Assessor Name: System

Date Created: 02/04/2016

Notes: Replace all exit signs with LED type (estimate 35 exit signs).

System: E2010 - Fixed Furnishings

Location: Stage

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Remove and replace stage curtain - insert the LF of track and SF of curtain

Qty: 1.00

Unit of Measure: Ea.

Estimate: $13,831.55

Assessor Name: System

Date Created: 02/05/2016

Notes: The school stage has a stage curtain assembly that appears to be from the original construction. Modern applications are typically fire-proof applications with adjustable tracks and electric support for operation. The curtains are torn in a few section and the track is not functioning properly, overall the system is in fair condition. It is recommended that the curtain and track system be upgraded to a new system. Special care should be considered in regards to modern fire proofing for the new installation.

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

System: B2020 - Exterior Windows

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 240.00

Unit of Measure: Ea.

Estimate: $1,469,410.00

Assessor Name: System

Date Created: 02/05/2016

Notes: The windows appear to be original to the buildings construction several of the windows no longer work and will require attention prior to an overall effort. The windows are in poor condition. The entire exterior window system is recommended to be replaced with units that retain their dimensions and profiles, but that incorporate updated energy-efficient features.

System: B3010105 - Built-Up

Location: Roof

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Built Up Roof

Qty: 1,000.00

Unit of Measure: S.F.

Estimate: $33,882.01

Assessor Name: System

Date Created: 02/05/2016

Notes: The built up roof was installed within the past ten years as reported by the school. The roof is in very good condition with few exceptions. Currently there is an active leak that if not repaired soon will start to deteriorate the insulation and the integrity of the classroom finishes. This deficiency provides a budgetary consideration for built up roof repair for this section.

System: C1020 - Interior Doors

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace interior doors - wood doors with hollow metal frames - per leaf

Qty: 120.00

Unit of Measure: Ea.

Estimate: $572,470.45

Assessor Name: System

Date Created: 02/05/2016

Notes: Interior doors are typically wood in metal frames with glass glazing. Other interior doors include wooden glass pane doors with original wooden pane frames, hollow metal in hollow metal frames. Doors are generally in fair condition considering the age of the application. It was reported during the time of the inspection that several locksets and frames have been repaired. Several of the locks are lose and the doors after several repairs are becoming less functional with each effort. Universal upgrades are required for the interior door systems, it is recommended that the interior doors system be removed and replaced with a new modern metal framed wooden door system with consideration for ADA compliance.

System: D5010 - Electrical Service/Distribution

Location: Boiler Room 001

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Substation

Qty: 1.00

Unit of Measure: Ea.

Estimate: $720,214.23

Assessor Name: System

Date Created: 02/03/2016

Notes: Replace the 500 kVA 2.4 kV-208/120V, 3 phase, 4 wire, 1200A load center unit substation with a 1000 kVA, 3000A unit substation, which allows capacity for central air conditioning equipment.

System: D5010 - Electrical Service/Distribution

Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Panelboard

Qty: 14.00

Unit of Measure: Ea.

Estimate: $442,677.86

Assessor Name: System

Date Created: 02/03/2016

Notes: Replace all (14) panelboards throughout the building, including their feeder conductors.

System: D5020 - Lighting and Branch Wiring

Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Lighting Fixtures (SF)

Qty: 50,580.00

Unit of Measure: S.F.

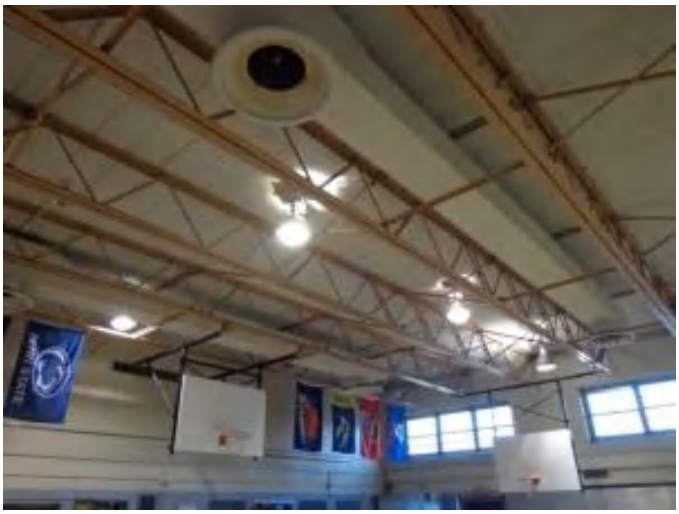
Estimate: $900,443.16

Assessor Name: System

Date Created: 02/03/2016

Notes: Replace all fluorescent lighting fixtures having T12 lamps, and associated branch circuit wiring throughout the building, with fixtures having T8 lamps (classrooms and IMC 35,825 SF; offices, faculty areas and miscellaneous areas 6,470 SF; mechanical and storage areas 8,285 SF).

System: D5020 - Lighting and Branch Wiring



Location: Cafeteria/gymnasium
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace lighting fixtures
Qty: 20.00
Unit of Measure: Ea.
Estimate: $71,797.27
Assessor Name: System
Date Created: 02/04/2016

Notes: Replace (20) high intensity discharge (HID) industrial fixtures in the cafeteria/gymnasium with LED industrial fixtures. Remove the incandescent fixtures that are used for emergency lighting and use the LED fixtures for emergency lighting.

System: D5020 - Lighting and Branch Wiring

Location: Auditorium
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace lighting fixtures
Qty: 25.00
Unit of Measure: Ea.
Estimate: $17,971.05
Assessor Name: System
Date Created: 02/04/2016

Notes: Replace (25) 2x4 recessed fluorescent lighting fixtures with acrylic prismatic lenses in the Auditorium with fixtures having T8 or T5 lamps.

System: D5030 - Communications and Security

Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Add/Replace Video Surveillance System

Qty: 14.00

Unit of Measure: Ea.

Estimate: $59,536.05

Assessor Name: System

Date Created: 02/04/2016

Notes: Replace video surveillance system equipment, including (14) interior cameras, one 16 channel digital video recorder (DVR) and one monitor. Add a second 16 channel DVR.

System: D5090 - Other Electrical Systems

Location: Boiler Room 001

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace standby generator system

Qty: 1.00

Unit of Measure: Ea.

Estimate: $119,206.47

Assessor Name: System

Date Created: 02/04/2016

Notes: Replace the 15 kW standby generator and automatic transfer switch (ATS). Increase generator size to at least 80 kW to allow capacity to provide standby power for the electric traction elevator.

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

System: B2010 - Exterior Walls

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 5,000.00

Unit of Measure: S.F.

Estimate: $161,447.36

Assessor Name: System

Date Created: 02/05/2016

Notes: The exterior brick surfaces are generally in fair to good condition for their age. In some locations, bricks have cracked or spalled and should be replaced. The repointing of deteriorated mortar joints is also recommended, using mortar of a similar color and consistency as the original. Following the detailed examination of the brick and repair of mortar construction joints, the entire building should be pressure washed to remove stains and embedded pollutants. If moisture is found to be penetrating the masonry facade, the application of a spray sealant to the suspected exterior masonry surface is recommended.

System: C1030 - Fittings

Location: Classrooms

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace blackboards with marker boards - pick the appropriate size and insert the quantities

Qty: 20.00

Unit of Measure: Ea.

Estimate: $23,208.18

Assessor Name: System

Date Created: 02/05/2016

Notes: Some of the classroom chalk boards are original to the buildings construction. This system is damaged and beyond its expected life, universal upgrades are warranted. Remove and upgrade damaged chalk boards to new marker board systems.

System: C3020413 - Vinyl Flooring

Location: Building Wide

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

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

Qty: 50,000.00

Unit of Measure: S.F.

Estimate: $758,333.40

Assessor Name: System

Date Created: 02/05/2016

Notes: The floor finish for this school is a combination of terrazzo in the main entrance area, tile in the kitchen and service areas, concrete hallways and stirs finishes and a vinyl tile finish. The vinyl tile finish is a 12 x 12 and 9 x 9 application and is suspect to contain asbestos. This finish is recommended for upgrade to a new 12 x 12 vinyl tile application. Suspected asbestos containing materials (ACM) are believed to be limited to the original vinyl floor tile and mastic. While currently sound and manageable in place, future renovation efforts should include provision to test and abate any and all ACM.

System: D2010 - Plumbing Fixtures

Location: kitchen

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Replace 3 compartment sink with sanitizing basin.

Qty: 1.00

Unit of Measure: Ea.

Estimate: $43,808.66

Assessor Name: System

Date Created: 02/12/2016

Notes: Replace residential kitchen sink with three compartment stainless steel commercial sink.

System: D2020 - Domestic Water Distribution

Location: entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace domestic water piping (75 KSF)

Qty: 88,317.00

Unit of Measure: S.F.

Estimate: $447,534.52

Assessor Name: System

Date Created: 02/12/2016

Notes: Replace domestic hot and cold water piping including valves, fittings, hangars and insulation.

System: D2020 - Domestic Water Distribution

Location: mechanical room

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Provide 4" reduced pressure back flow preventer

Qty: 1.00

Unit of Measure: Ea.

Estimate: $51,112.25

Assessor Name: System

Date Created: 02/12/2016

Notes: Install new reduced pressure backflow preventer in four inch water service.

System: D2020 - Domestic Water Distribution

Location: mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace duplex domestic booster pump set (5 HP)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $50,533.86

Assessor Name: System

Date Created: 02/12/2016

Notes: Install new domestic water booster pump system with pumps, control panel, pressure tank and electrical connection.

System: D2030 - Sanitary Waste

Location: entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 88,317.00

Unit of Measure: S.F.

Estimate: $375,047.65

Assessor Name: System

Date Created: 02/12/2016

Notes: Inspect old cast iron sanitary piping including camera observation and replace damaged sections.

System: D2030 - Sanitary Waste

Location: mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace sanitary sewage ejector pit and pumps. (48" dia.)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $30,685.95

Assessor Name: System

Date Created: 02/12/2016

Notes: Replace existing duplex sump pump in mechanical room.

System: D3020 - Heat Generating Systems

Location: mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace pump, base-mounted, end suction HHW (3" size, 5 HP, to 225 GPM)

Qty: 2.00

Unit of Measure: Ea.

Estimate: $132,668.57

Assessor Name: System

Date Created: 02/12/2016

Notes: Replace two existing hot water pumps. Include electrical connections.

System: D3040 - Distribution Systems

Location: classrooms

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

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

Qty: 88,317.00

Unit of Measure: S.F.

Estimate: $4,260,340.14

Assessor Name: System

Date Created: 02/12/2016

Notes: Replace the existing unit ventilators with new units designed for quiet operation and equipped with hot water and chilled water coils, hydronic control valves with digital controls and integral heat exchangers to provide code required fresh air quantities. Connect to new chilled and hot water piping systems and building automation control system.

System: D3040 - Distribution Systems

Location: auditorium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

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

Qty: 400.00

Unit of Measure: Seat

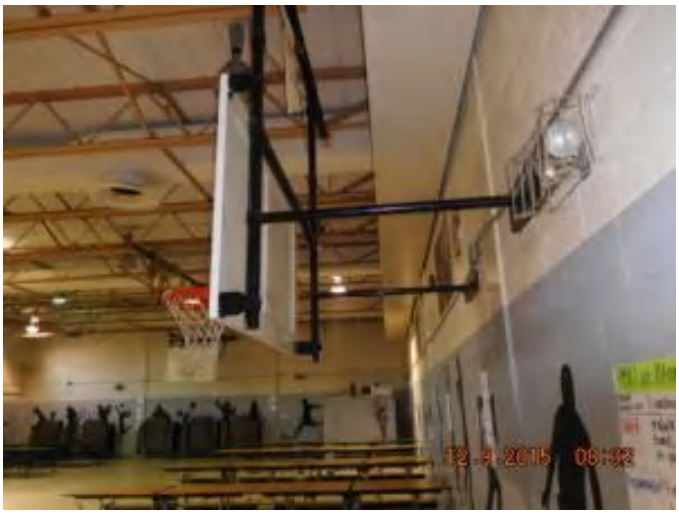
Estimate: $666,186.60

Assessor Name: System

Date Created: 02/12/2016

Notes: Provide a new central station air handling unit for the auditorium with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems and control system.

System: D3040 - Distribution Systems



Location: cafeteria/ gymnasium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

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

Qty: 3,725.00

Unit of Measure: S.F.

Estimate: $214,098.20

Assessor Name: System

Date Created: 02/12/2016

Notes: Provide a new central station air handling unit for the cafeteria/ gymnasium with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems and control system.

System: D3060 - Controls & Instrumentation

Location: entire building

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 88,317.00

Unit of Measure: S.F.

Estimate: $1,894,586.20

Assessor Name: System

Date Created: 02/12/2016

Notes: Install new direct digital control system and building automation system with remote computer control capability and graphics package.

System: D4010 - Sprinklers

Location: entire building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Install a fire protection sprinkler system

Qty: 88,317.00

Unit of Measure: S.F.

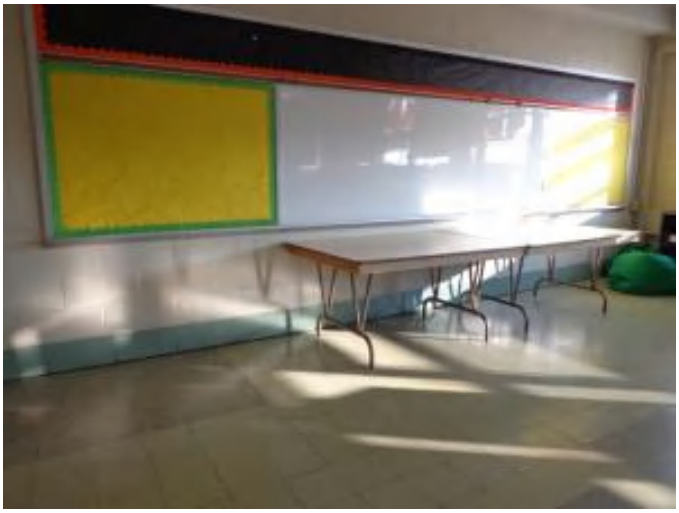
Estimate: $1,263,416.27

Assessor Name: System

Date Created: 02/12/2016

Notes: Install complete NFPA wet pipe automatic sprinkler system and standpipes. If required provide fire pump and jockey pump with controller.

System: D5020 - Lighting and Branch Wiring



Location: Classrooms

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Provide surface raceway system and wiring devices

Qty: 960.00

Unit of Measure: L.F.

Estimate: $127,438.74

Assessor Name: System

Date Created: 02/03/2016

Notes: Provide surface metal raceway system with 6 to 8 duplex receptacles in each of 32 classrooms.

System: D5020 - Lighting and Branch Wiring

Location: Computer Room 311

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Provide surface raceway system and wiring devices

Qty: 40.00

Unit of Measure: L.F.

Estimate: $8,631.10

Assessor Name: System

Date Created: 02/03/2016

Notes: Replace floor mounted raceway system and (24) duplex receptacles in Computer Room 311.

System: D5030 - Communications and Security

Location: Building wide

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Provide wireless GPS clock system

Qty: 1.00

Unit of Measure: LS

Estimate: $32,836.84

Assessor Name: System

Date Created: 02/04/2016

Notes: Remove all clocks and provide wireless GPS master clock system with battery operated synchronized clocks (estimate 57 clocks).

Priority 5 - Response Time (> 5 yrs):

System: C1010 - Partitions

Location: Classrooms

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 5,000.00

Unit of Measure: S.F.

Estimate: $111,397.49

Assessor Name: System

Date Created: 02/05/2016

Notes: There are several movable partitions that remain in classrooms. These wall systems are no longer used and in most cases cannot be used due to damage or wall modifications to support classroom needs. This deficiency provides a budgetary consideration to remove and replace the wall systems with universal removal of the existing movable partitions and upgrades to a permeate wall systems.

System: C1030 - Fittings

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 200.00

Unit of Measure: Ea.

Estimate: $54,182.50

Assessor Name: System

Date Created: 02/05/2016

Notes: There is no directional signage and room signage is a custom design in places and scarce or painted with no consistency in others. Accessibility signage criteria have been established for the physically challenged. These include mounting heights, contrast and finish, raised and Braille characters and pictograms, and character proportions and heights. It is recommended that compliant signage be installed throughout the building.

System: C1030 - Fittings

Location: Classrooms

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove and replace tackboards - select size

Qty: 10.00

Unit of Measure: Ea.

Estimate: $7,927.26

Assessor Name: System

Date Created: 02/05/2016

Notes: There are several tack boards in the hallways for student displays. The systems are damaged and beyond the expected service life for this application. Remove and replace tack boards is recommended.

System: D3030 - Cooling Generating Systems

Location: roof, mechanical room

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 88,317.00

Unit of Measure: S.F.

Estimate: $1,418,334.43

Assessor Name: System

Date Created: 02/12/2016

Notes: Remove the window air conditioners and install a two hundred fifty ton chilled water system with air cooled chiller, pumps, glycol system, piping and controls. Include electrical connections.

System: E2010 - Fixed Furnishings

Location: Auditorium

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 400.00

Unit of Measure: Ea.

Estimate: $360,762.20

Assessor Name: System

Date Created: 02/05/2016

Notes: The fixed seating for this school is from the original construction. The systems are in fair condition considering the age and usage. This project provides a budgetary consideration for universal upgrades for the fixed seating and furnishing of this school. Ensure that ADA requirements are followed with the new seating layout.

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	Traction geared elevators, passenger, 2000 lb, 5 floors, 200 FPM	1.00	Ea.	Elevator Machine Room 006	United Elevator	NA	043LH		30	2012	2042	$175,350.00	$192,885.00
D3020 Heat Generating Systems	Boiler, gas fired, natural or propane, cast iron, hot water, gross output, 3808 MBH, includes standard controls and insulated jacket, packaged	2.00	Ea.	mechanical room	peerless	21025t	2103273		35	1966	2001	$62,552.00	$137,614.40
D5010 Electrical Service/Distribution	Load interrupter switch, 2 position, 300 kVA & below w/CLF fuses, 4.8 kV, 600 amp, NEMA 1	1.00	Ea.	Main Electrical Room in Boiler Room 001	Westinghouse	NA	NA		30			$34,900.20	$38,390.22
D5010 Electrical Service/Distribution	Switchgear installation, incl switchboard, panels & circuit breaker, 120/208 V, 1200 A	1.00	Ea.	Main Electrical Room in Boiler Room 001	Westinghouse	Type CDP	S.O. No. 1447-28578		30			$27,696.60	$30,466.26
D5010 Electrical Service/Distribution	Transformer, dry-type, 3 phase 5 kV primary 277/480 volt secondary, 300 kVA	1.00	Ea.	Main Electrical Room in Boiler Room 001	Westinghouse	NA	NA		30			$43,221.60	$47,543.76
												Total:	**$446,899.64**

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):	90,300
Year Built:	1966
Last Renovation:	
Replacement Value:	$1,963,693
Repair Cost:	$757,720.37
Total FCI:	38.59 %
Total RSLI:	46.87 %

Description:

Attributes:

General Attributes:

Bldg ID:	S422001	Site ID:	S422001

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	36.00 %	51.44 %	$740,280.66
G40 - Site Electrical Utilities	76.67 %	3.32 %	$17,439.71
Totals:	**46.87 %**	**38.59 %**	**$757,720.37**

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 $
G2020	Parking Lots	$8.50	S.F.	12,600	30	1990	2020	2027	40.00 %	0.00 %	12			$107,100
G2030	Pedestrian Paving	$12.30	S.F.	75,500	40	1990	2030	2027	30.00 %	77.69 %	12		$721,428.14	$928,650
G2040	Site Development	$4.36	S.F.	90,300	25	1990	2015	2027	48.00 %	4.79 %	12		$18,852.52	$393,708
G2050	Landscaping & Irrigation	$4.36	S.F.	2,200	15	1990	2005	2027	80.00 %	0.00 %	12			$9,592
G4020	Site Lighting	$4.84	S.F.	90,300	20			2030	75.00 %	0.00 %	15			$437,052
G4030	Site Communications & Security	$0.97	S.F.	90,300	20			2032	85.00 %	19.91 %	17		$17,439.71	$87,591
								Total	**46.87 %**	**38.59 %**			**$757,720.37**	**$1,963,693**

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.

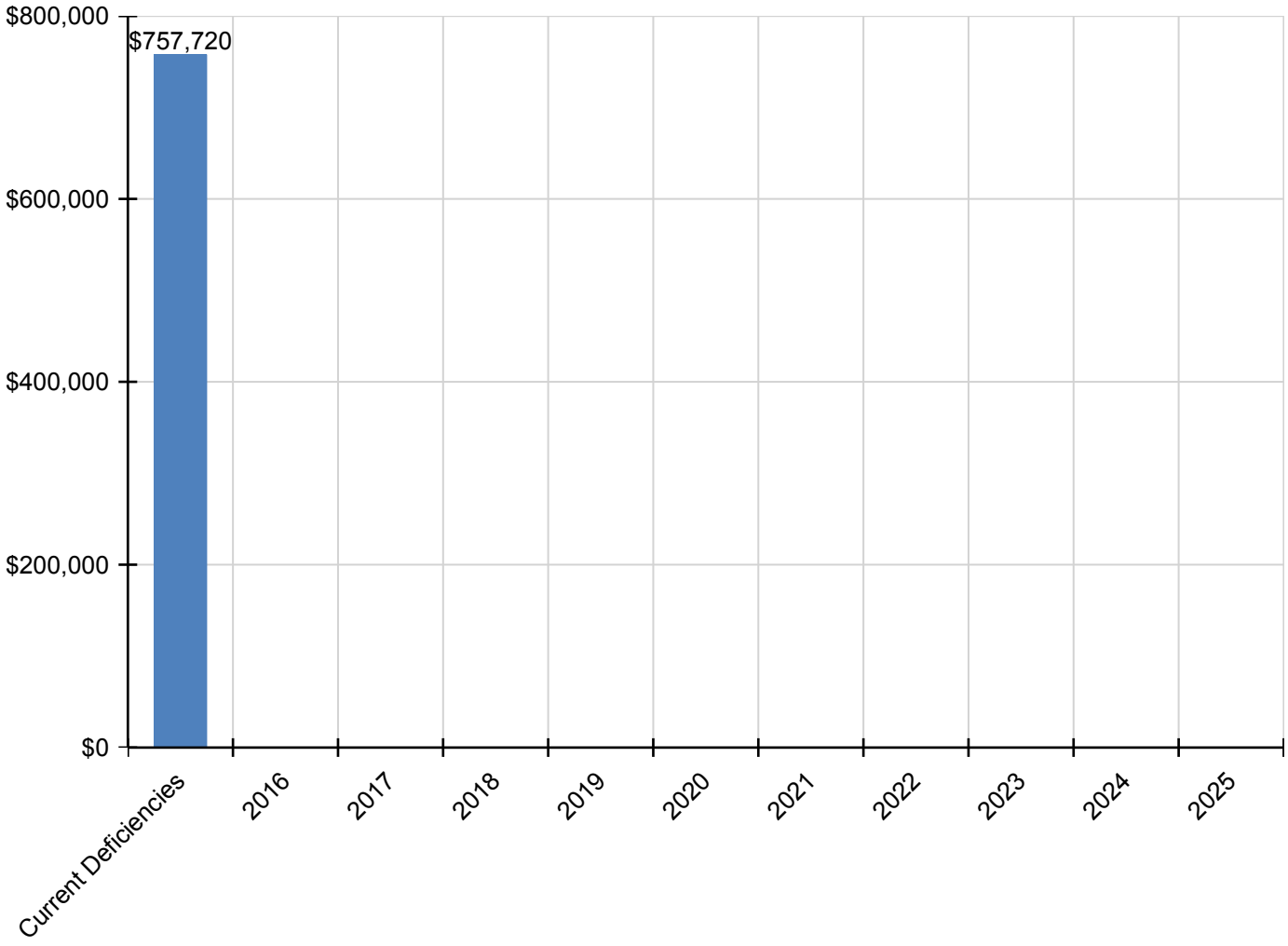
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$757,720**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$757,720**
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**
G2020 - Parking Lots	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2030 - Pedestrian Paving	$721,428	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$721,428**
G2040 - Site Development	$18,853	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$18,853**
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	$17,440	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$17,440**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

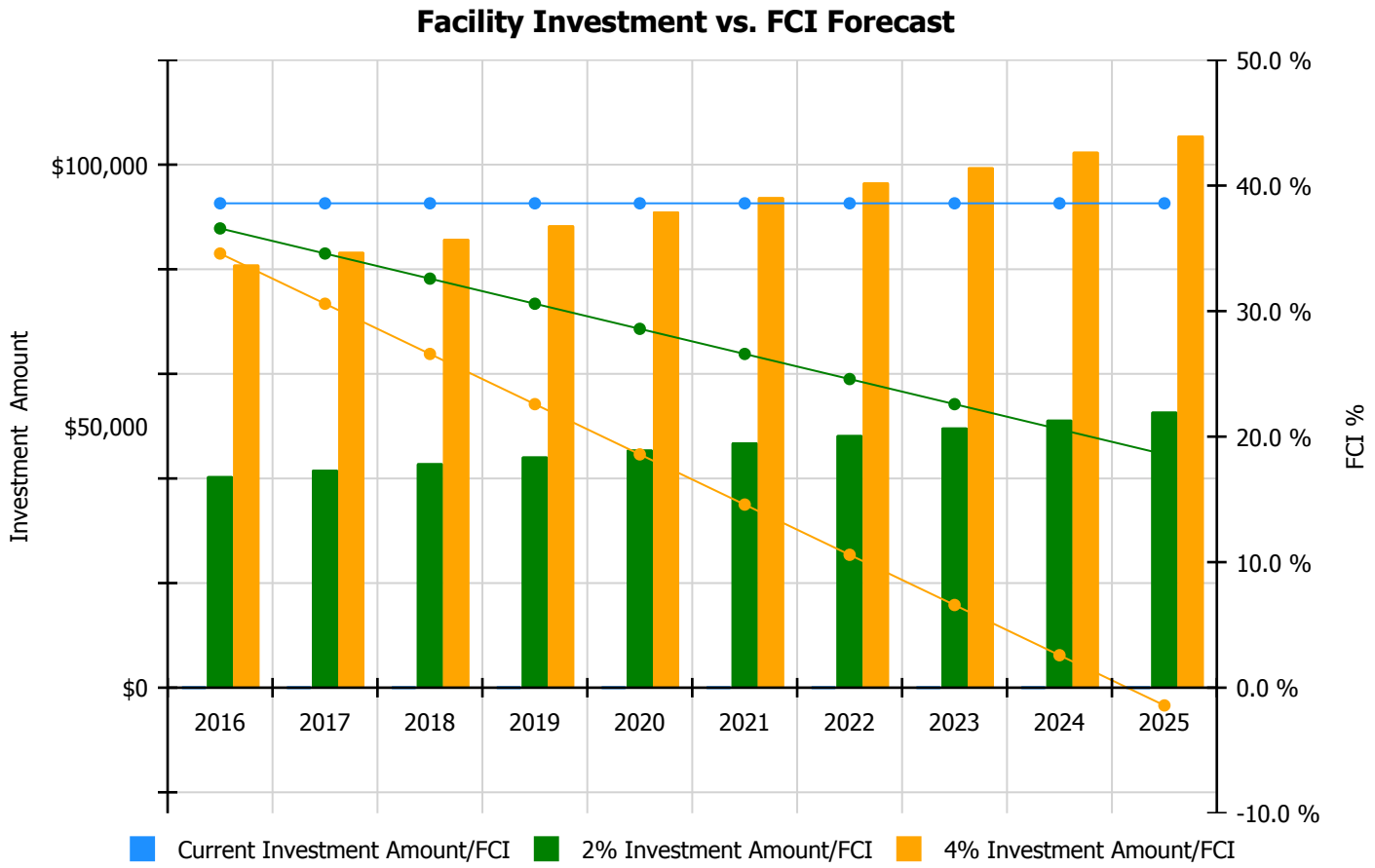
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

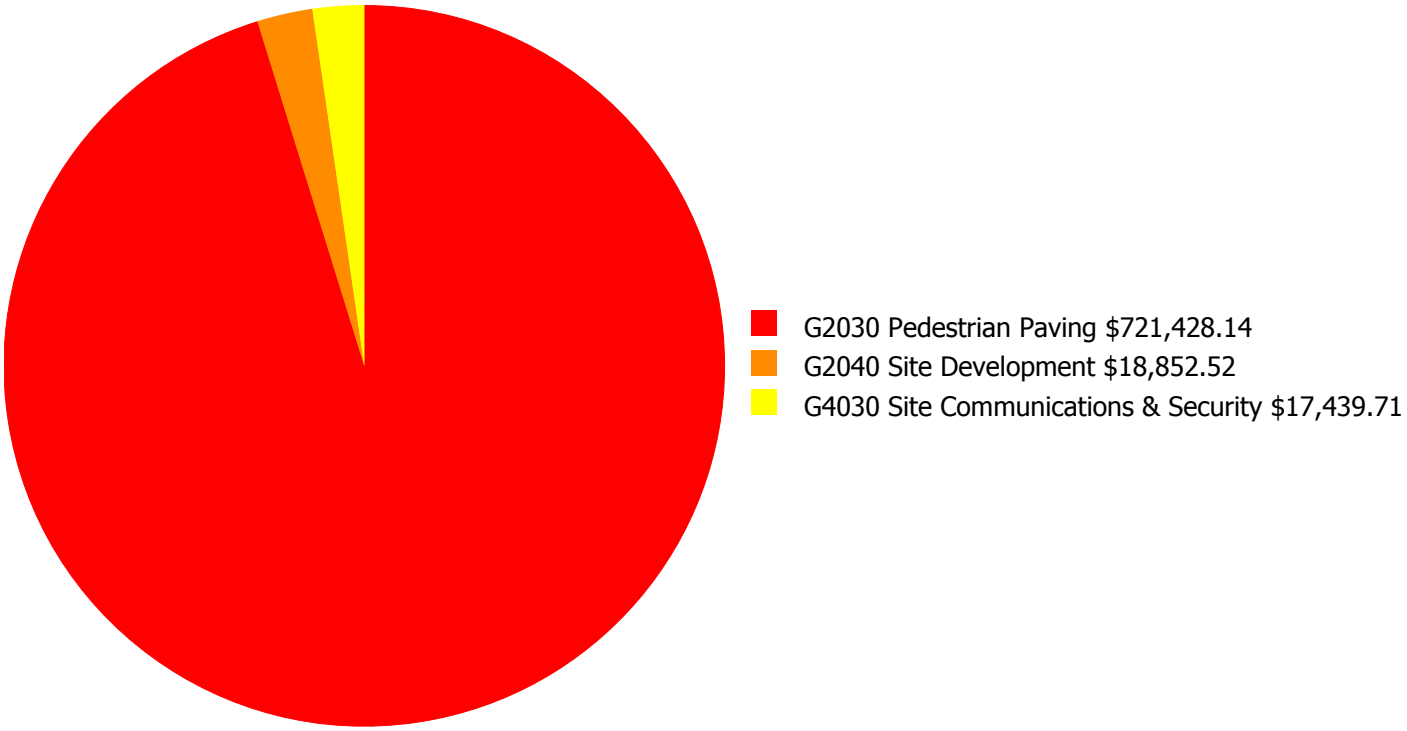
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 38.59%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$40,452.00	36.59 %	$80,904.00	34.59 %
2017	$0	$41,666.00	34.59 %	$83,331.00	30.59 %
2018	$0	$42,916.00	32.59 %	$85,831.00	26.59 %
2019	$0	$44,203.00	30.59 %	$88,406.00	22.59 %
2020	$0	$45,529.00	28.59 %	$91,058.00	18.59 %
2021	$0	$46,895.00	26.59 %	$93,790.00	14.59 %
2022	$0	$48,302.00	24.59 %	$96,604.00	10.59 %
2023	$0	$49,751.00	22.59 %	$99,502.00	6.59 %
2024	$0	$51,243.00	20.59 %	$102,487.00	2.59 %
2025	$0	$52,781.00	18.59 %	$105,562.00	-1.41 %
Total:	**$0**	**$463,738.00**		**$927,475.00**	

Deficiency Summary by System

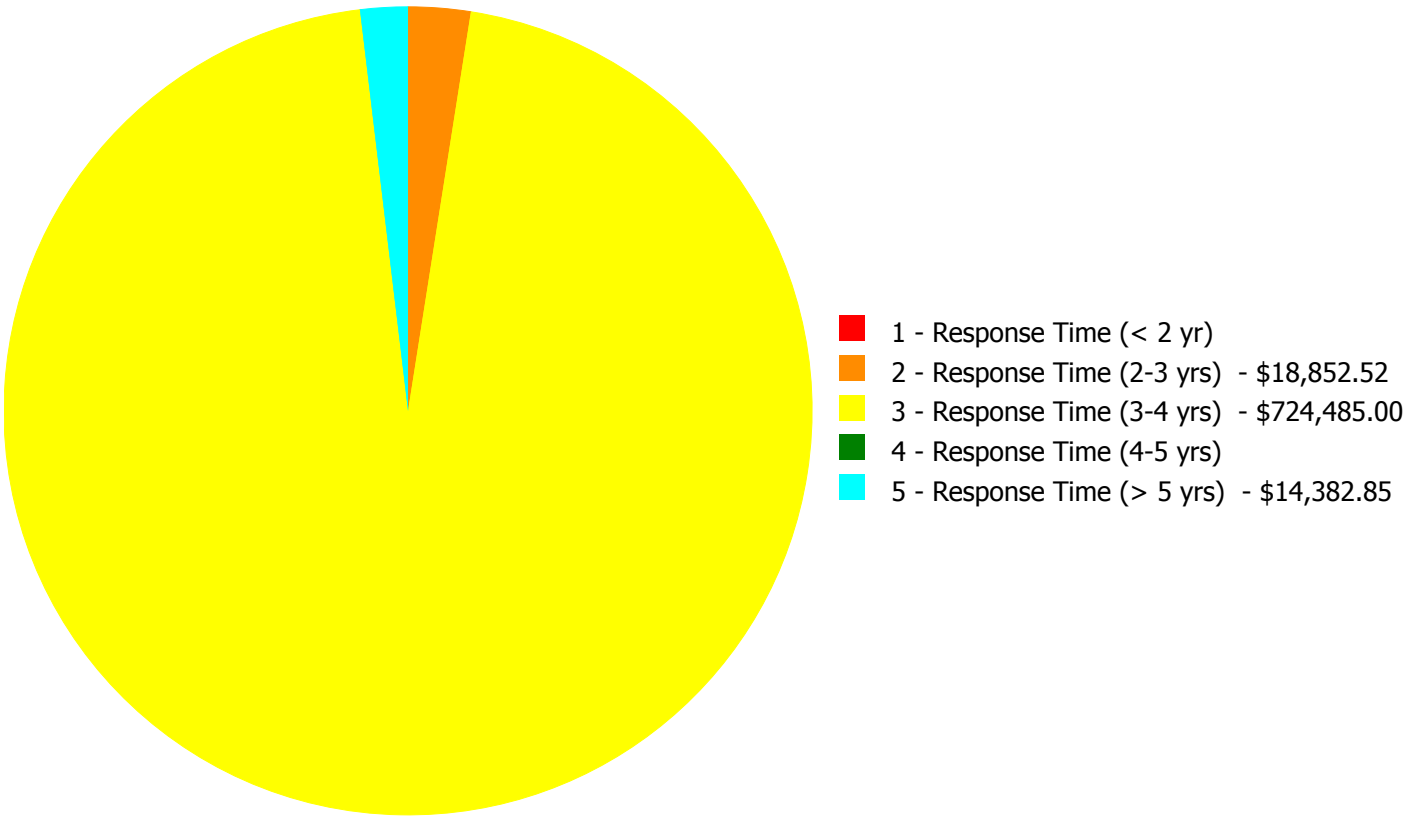
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $757,720.37

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: $757,720.37

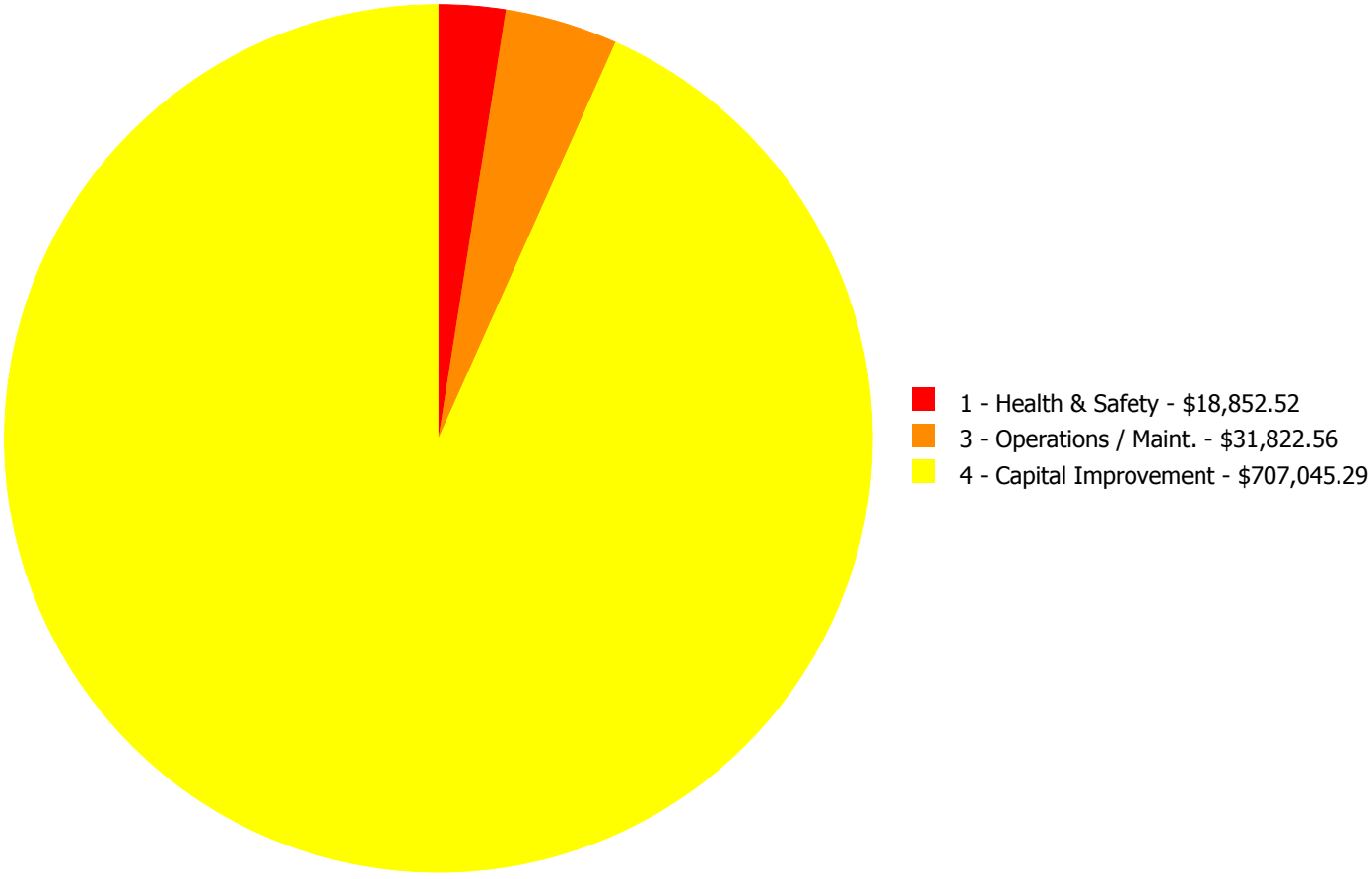
Deficiency By Priority Investment Table

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	$707,045.29	$0.00	$14,382.85	$721,428.14
G2040	Site Development	$0.00	$18,852.52	$0.00	$0.00	$0.00	$18,852.52
G4030	Site Communications & Security	$0.00	$0.00	$17,439.71	$0.00	$0.00	$17,439.71
	Total:	$0.00	$18,852.52	$724,485.00	$0.00	$14,382.85	$757,720.37

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: $757,720.37

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: G2040 - Site Development

Location: SIte

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Build secure trash dumpster enclosure

Qty: 1.00

Unit of Measure: Ea.

Estimate: $18,852.52

Assessor Name: Gerald Petric

Date Created: 02/05/2016

Notes: The trash dumpster is located in the parking lot open to the students and to the public. The exterior services are not protected. Upgrades to protect the exterior services and trash area is necessary for the safety of the students and the general public. Construction of a secure lockable dumpster area is recommended.

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

System: G2030 - Pedestrian Paving

Location: Site

Distress: Damaged

Category: 4 - Capital Improvement

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

Correction: Remove and replace AC paving

Qty: 50,000.00

Unit of Measure: S.F.

Estimate: $707,045.29

Assessor Name: Gerald Petric

Date Created: 02/05/2016

Notes: The parking play area has no assigned parking and limited markers for approved activity areas. No curb cuts for access to the sidewalks that lead to the ADA main entrance. The parking play lot is in fair condition, the harsh environmental conditions associated with snow removal have taken its toll on the asphalt surface. Also, there is no marked path of ingress to the main entrance. This project provides a budgetary consideration for a play, parking lot renewal program that includes all aspects of the current ADA legislation. Asphalt removal and replacement is recommended.

System: G4030 - Site Communications & Security

Location: Site

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace video surveillance camera

Qty: 4.00

Unit of Measure: Ea.

Estimate: $17,439.71

Assessor Name: Gerald Petric

Date Created: 02/12/2016

Notes: Replace two (2) exterior video surveillance cameras, one on the southeast corner of the building and one on the northeast corner of the west wing to provide coverage of the paved play area. It is recommended that two additional exterior cameras be provided, one at the Visitor Entrance and one on the north side of the east wing for enhanced coverage of the play area.

Priority 5 - Response Time (> 5 yrs):

System: G2030 - Pedestrian Paving

Location: SIte

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 1,000.00

Unit of Measure: S.F.

Estimate: $14,382.85

Assessor Name: Gerald Petric

Date Created: 02/05/2016

Notes: The existing sidewalk system is a mix of the original sidewalks installed during the construction of the school and sections that have been replaced over the years. There are a several areas of cracking concrete but no tripping hazards. Sections of the sidewalk system is expected to expire in the near future. Removal of the damaged sections is recommended. Upgrades are required and should include all aspects of current ADA legislation.

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