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.

Fell School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	900 W. Oregon Ave.	Enrollment	571
	Philadelphia, Pa 19148	Grade Range	'00-08'
Phone/Fax	215-952-6237 / 215-952-6239	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Dnfell	Turnaround Model	N/A

Building/System FCI Tiers

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

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

Building and Grounds

	FCI	Repair Costs	Replacement Cost
Overall	**23.26%**	**$16,920,970**	**$72,753,511**
Building	37.16 %	$11,375,949	$30,611,251
Grounds	29.80 %	$262,369	$880,570

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	00.00 %	$0	$756,783
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.72 %	$16,145	$2,251,510
Windows (Shows functionality of exterior windows)	119.42 %	$1,311,997	$1,098,610
Exterior Doors (Shows condition of exterior doors)	00.00 %	$0	$88,450
Interior Doors (Classroom doors)	13.00 %	$27,828	$214,110
Interior Walls (Paint and Finishes)	08.88 %	$85,671	$965,020
Plumbing Fixtures	09.51 %	$78,464	$824,720
Boilers	133.32 %	$1,518,308	$1,138,870
Chillers/Cooling Towers	48.39 %	$722,673	$1,493,280
Radiators/Unit Ventilators/HVAC	39.64 %	$1,039,480	$2,622,390
Heating/Cooling Controls	158.90 %	$1,308,575	$823,500
Electrical Service and Distribution	136.97 %	$810,428	$591,700
Lighting	31.19 %	$659,854	$2,115,480
Communications and Security (Cameras, Pa System and Fire Alarm)	29.48 %	$233,600	$792,390

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

S219001;Fell and Thomas

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):	143,000
Year Built:	1922
Last Renovation:	
Replacement Value:	$72,753,511
Repair Cost:	$16,920,970.41
Total FCI:	23.26 %
Total RSLI:	61.98 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 2 / Tm 3
Status:	Accepted by SDP	Team:	Tm 3
Site ID:	S219001		

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.

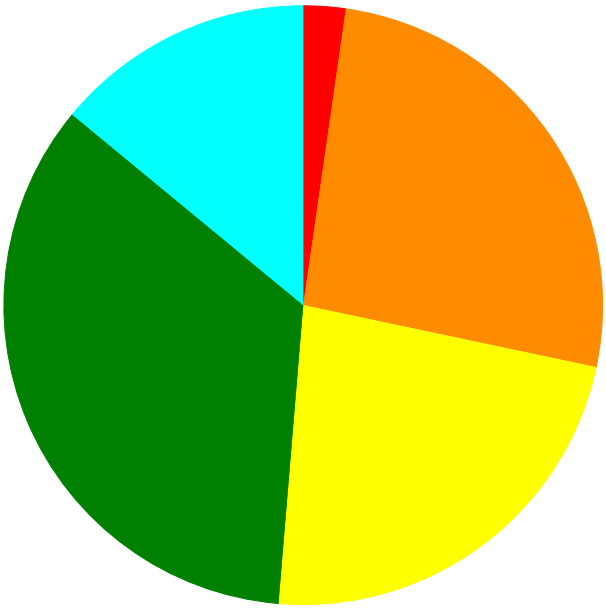
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	1.94 %	$45,596.46
B10 - Superstructure	37.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	45.65 %	32.55 %	$2,897,632.21
B30 - Roofing	54.98 %	44.78 %	$677,640.22
C10 - Interior Construction	42.67 %	4.10 %	$143,904.28
C20 - Stairs	37.00 %	15.21 %	$30,674.24
C30 - Interior Finishes	70.80 %	6.67 %	$490,530.07
D10 - Conveying	76.14 %	192.47 %	$1,012,601.25
D20 - Plumbing	60.85 %	49.81 %	$1,438,872.95
D30 - HVAC	87.62 %	42.85 %	$6,816,410.51
D40 - Fire Protection	82.04 %	75.71 %	$872,633.65
D50 - Electrical	83.16 %	22.55 %	$1,895,219.07
E10 - Equipment	75.80 %	14.19 %	$323,055.06
E20 - Furnishings	52.97 %	4.54 %	$13,831.55
G20 - Site Improvements	57.17 %	21.19 %	$142,278.16
G40 - Site Electrical Utilities	52.95 %	57.40 %	$120,090.73
Totals:	**61.98 %**	**23.26 %**	**$16,920,970.41**

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)
B215001;Thomas	82,000	12.80	$32,316.31	$120,665.41	$793,500.71	$3,867,864.26	$468,305.38
B219001;Fell	61,000	37.16	$352,323.98	$4,215,792.96	$2,906,685.78	$1,996,731.75	$1,904,414.98
G219001;Grounds	48,100	29.80	$0.00	$71,018.25	$191,350.64	$0.00	$0.00
Total:		**23.26**	**$384,640.29**	**$4,407,476.62**	**$3,891,537.13**	**$5,864,596.01**	**$2,372,720.36**

Deficiencies By Priority



1 - Response Time (< 2 yr) - $384,640.29
2 - Response Time (2-3 yrs) - $4,407,476.62
3 - Response Time (3-4 yrs) - $3,891,537.13
4 - Response Time (4-5 yrs) - $5,864,596.01
5 - Response Time (> 5 yrs) - $2,372,720.36

Budget Estimate Total: $16,920,970.41

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:	Middle Secondary
Gross Area (SF):	82,000
Year Built:	1921
Last Renovation:	
Replacement Value:	$41,261,690
Repair Cost:	$5,282,652.07
Total FCI:	12.80 %
Total RSLI:	58.08 %

Description:

Facility Assessment
September 2015

School District of Philadelphia
Mastery Charter George C Thomas Middle School
927 Johnston St.
Philadelphia, PA 19148

82,000 SF / 567 Students / LN 01

The Mastery George C. Thomas Junior High School is one of the older schools in service to the Philadelphia communities. The school is currently being run by the Mastery Charter system and is identified as B215001 and was originally designated as the George C. Thomas Junior High School, serving residential neighborhoods of Marconi Plaza, Lower Moyamensing, and Packer Park. Mastery assumed the facility in the fall of 2006. This facility is located at 927 Johnston Street, Philadelphia, PA. The late Gothic Revival design of the rectangular-shaped, concrete and steel-framed building includes brick facades with a concrete foundation. Constructed in 1920 the school has had one major addition added to the northern exterior completed in 1951.

The main entrance faces the Southern exterior facing Johnston Street. General parking is north of the school resting between The Fell School with a fence dividing the parking areas for each school. This School serves students in grades 7 to 9 and has a basement with three stories consisting of a total gross square footage of 82,000 GSF.

This school has several classrooms, a library, kitchen and student commons, Gym, Auditorium and cafeteria, with supporting administrative spaces; science, Music, Art Department and Therapy Area for special needs students.

The following information is listed in the Historical Register for this school.

"It was designed by Irwin T. Catharine and built in 1920-1921. It is a three-story, eight-bay by three-bay, brick building on a raised basement in the Colonial Revival-style. An addition was built in 1952. It features two projecting entrances with stone surrounds and a brick parapet.

The school was named for George Clifford Thomas, a notable person in American history of the mid-19th century. He was a prominent banker, Protestant church and civic leader, philanthropist and collector of art, rare books and manuscripts.

The school was added to the National Register of Historic Places in 1988."

The information for this report was collected during a site visit on September 18, 2015.

Mr. Adam Walker, Building Engineer, accompanied the assessment team on a tour of the school and provided detailed information on the building systems and maintenance history. Mr. Dean Dickos, Assistant Principal of Operations, also participated in the interview and shared information about the school with the assessment team.

ArchitecturaL / Structural Systems

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.

Overall the basement wall appears to be in good condition considering the age of the school.

There is evidence of water infiltration through the basement foundations wall facing the South Hutchinson street exterior. To improve the integrity of the basement wall excavation and waterproofing system upgrades are recommended. Improve the slope of the grade away from the foundation prior to restoring the landscaping system.

The exterior brick surfaces are generally in good condition for their age. The Northern wall facing the parking lot has a section that raises some concern. The bricks have cracked or spalled in the alcove and should be replaced. As indicated in the photos this area is a consistent line of degradation. 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 exterior windows have been upgraded from the original applications. The window system is estimated to have been installed in the 1990's. Several of the windows no longer work and will require attention prior to an overall effort. Overall, the windows are in good condition based on the year of installation or last renovation. 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 door system was reported to have been upgraded in 2006 during the renovation effort for this school. The exterior doors are well maintained and in very good condition. Included in this report is a deficiency for the service doors that were not considered during the renovation for upgrade.

The roof access exterior service doors are metal applications with metal frames. The service doors were not a part of the 2006 exterior door upgrade effort. The doors are in poor condition and aging at a faster rate than expected. The exterior service doors are recommended for upgrade. The new doors are expected to retain their dimensions and profiles, but that incorporate updated energy-efficient features.

There are a number of roof sections and different roof elevations ranging from the main roof to the mechanical roof. The built up application was reported to have been installed in the early 1980'S. As indicated in the photos several repairs were recently completed however, the current age and condition of the roofing systems warrant universal upgrades. This deficiency provides a budgetary consideration for removal and replacement of the Built Up roofing system.

Special consideration for those that may be physically challenged was a main factor in the 2006 renovation. The main entrance serves as the exterior ADA entrance complete with access ramp and automated access controlled from the front desk. The path of travel is very clear from that entrance of the school and from the access points. The interior path of travel is supported by a complaint interior ramp and single level ADA wheelchair lift. As well as lever actuated door hardware, hand and guard rails, ADA restroom accommodation that meet the needs of the physically challenged. The building sets the example for construction efforts to support the ADA guidelines.

Interior wall finishes are typically painted CMU, plaster or brick. Other wall finishes include and ceramic tile at restrooms. Wall finishes are generally in very good condition and were reported to have been upgraded during the 2006 renovation effort. Interior floor finishes are typically VCT in classrooms and corridors. Other floor finishes include: concrete, marble and wood floors. Interior ceilings are typically 2 x 4 acoustical tile in metal grid that were also a part of the renovation. Other ceiling finishes include: exposed/painted structure with gypsum wallboard.

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 mechanical room has several penetrations and as indicted in the photos an industrial window that has been compromised with several holes for equipment. Also, note the electrical modifications recently completed at this school has left several closet penetrations open. This deficiency provides a budgetary consideration to properly enclose the areas and to meet the current fire life safety requirements for mechanical spaces.

There are several transom lites and sidelights constructed into hallway wall systems. It is recommended that the lites and sidelights be removed and replaced with a fire rated wall construction. The deficiency provides a budgetary consideration to correct the hallway, transoms, lites and sidelights.

Interior doors are typically wood in wood frames with glass glazing. Other interior doors include hollow metal in hollow metal frames at some of the stairwells and exit ways, access doors. Doors are generally in like new condition as the system was upgraded as part of an interior renovation effort in 2006. A few doors appear to have been low priority during this effort such as the doors in the store room area and Gym. This deficiency provides a budgetary consideration to replace a portion of the interior doors overlooked during that effort.

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

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). It appears as if the entire hand and guard rail system was upgraded during the 2006 renovation effort. However, the rail extensions were not included in this effort. This deficiency provides a budgetary consideration for rail extension on each floor.

Elevators are present at this school.

Institutional equipment includes: library equipment; stage equipment; instrumental equipment; A/V equipment; and gym equipment – basketball backstops, scoreboards, etc. Other equipment includes kitchen equipment; loading dock bumpers/levelers.

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 sections and the track is not functioning properly, overall the system is in poor 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.

Furnishings include: fixed casework; window shades/blinds fixed auditorium seating and fixed benches with shelves all in like new condition. Sports equipment such as basketball backboards and score boards. There were no issues that surfaced during the time of the inspection therefore no recommendations are required at this time.

MECHANICAL SYSTEMS

PLUMBING- Plumbing fixtures are standard china commercial quality with wall mounted lavatories, urinals and water closets. Lavatories have single handle faucets. Urinals and water closets have manual flush valves with lever operators. Custodial closets have mop basins. There are dual level stainless steel water coolers with integral refrigeration. The kitchen waste is piped through an above floor grease trap in the kitchen. There is an eighty gallon electric Bradford White water heater exposed in the kitchen office for that area. There are twenty gallon electric water heaters above ceilings for each set of toilet rooms. The mechanical room has two duplex sump pumps that are not operational. There is another ground water sump pump in a crawl space that is functional. This same crawl space has a six inch water service with a backflow preventer. A duplex domestic booster pump system is also in this space.

Water piping is insulated rigid copper. Sanitary, waste, vent and rainwater piping is original installation hub and spigot cast iron. Fuel oil piping is black steel with screwed fittings.

Plumbing fixtures in toilet rooms were replaced in 2006 and should be serviceable twenty five more years. The water heaters should be serviceable for fifteen more years. The cast iron piping has exceeded the anticipated service life. Rainwater and vent piping should continue functioning, but the sanitary and waste piping should be inspected to determine condition and replace damaged portions. Supply piping should have remaining service life of fifteen years.

HVAC-Heating is provided by steam and hot water. The primary steam source is fed from boilers located in Fels School and piped to this building. A secondary oil fired boiler is located in the mechanical room of this building. This unit is a Burnham v1111 sixty five hp sectional cast iron low pressure steam boiler. There are inherent operational issues having a shared heating plant which should be addressed. A space adjacent to the boiler area contains a shell and tube steam/water heat exchanger to provide heating water to water source heat pump units in the building. An Armstrong cast iron condensate receiver system with two pumps is in this space. A double wall insulated stainless steel factory fabricated flue is connected to the boiler. Oil storage is two 300 gallon steel tanks in the boiler room. A duplex fuel oil pump system provides circulation.

The building is heated by water source heat pumps, with older steam radiation units at entrances and electric baseboard radiation in corridors and toilet rooms. Classrooms have horizontal units with exposed spiral ductwork. The cafeteria, auditorium and gymnasium each have two fifteen ton Trane heat pump units suspended from the structure. The gymnasium and cafeteria have exposed spiral ductwork and the auditorium supply air is ducted to ceiling diffusers. The larger units have connections to outside air louvers. Classroom unit outside air requirements are supplied from Greenheck roof mounted air energy recovery units, ducted to each unit. Toilet rooms have mechanical exhaust with inline fans and ducted exhaust registers to exterior louvers.

An Evapco closed circuit cooler is located on the roof to provide condenser water to the heat pump system. Two 40 hp Paco end suction pumps in the mechanical room circulate through the heat pump water loop. These pumps are each controlled by Intellipak variable frequency drives. Heat pump piping is black steel with Victaulic couplings. There is a chemical treatment system and a solid filtration unit.

There is no central building automation system. The boilers are controlled by the Powerflame control panels and there are controls for the heat pump loop. The heat pumps are controlled by individual Honeywell programmable thermostats.

The boiler and heat pump system were installed in 2006. The boiler should remain serviceable twenty five more years. The heat pump system and distribution should have a remaining service life of ten to fifteen years.

FIRE PROTECTION-There is a complete automatic sprinkler system for the building. An electric fire pump is in a separate space in the mechanical room. The pump is an Aurora 750 gpm, 75 hp unit. Fire service is a six inch line from S. Hutchinson St. Sprinkler heads are semi recessed or exposed. The fire protection system should have a remaining service life of twenty five years.

ELECTRICAL SYSTEMS

Electrical Service--The building is served by PECO Energy Company from a utility-owned pad-mounted transformer located on the north side Main Electrical Room. Secondary 480/277V, 3 phase, 4 wire service is routed to a junction box in the Main Electrical Room, which serves 4000A, 208/120V, 3 phase, 4 wire General Electric Spectra Series Switchboard SW1A via a 1200A main circuit breaker and 750 kVA step-down transformer. Switchboard SW1A feeds the auditorium, elevator, kitchen panel and three risers serving panelboards on Floors 1, 2 and 3. The incoming service also feeds 1200A, 480/277V, 3 phase, 4 wire General Electric Spectra Series Switchboard SW1B, which feeds mechanical equipment and the cooling tower. All of the distribution equipment in the Main Electrical Room was installed in 2006 and is in good condition, with an estimated remaining useful life of more than 21 years.

Panel E1 is a 225A, 208/120V panelboard on stage left in the auditorium that serves the stage and auditorium house lighting. It is

original equipment and has exceeded its useful life and needs to be replaced. All other panelboards were replaced in the renovation project and are in good condition.

Receptacles-- Classrooms are supplied with an adequate quantity of receptacles. Ground-fault circuit-interrupting (GFCI) type receptacles were observed in all locations where required by code.

Lighting-- Lighting fixtures in most areas of the building were replaced when the building was renovated in 2008. There are only a few spaces, such as the mechanical/electrical rooms in the Basement, that still have some fluorescent fixtures with T12 lamps. All other areas with linear fluorescent fixtures have T8 lamps.

There are a number of different types of lighting fixtures used throughout the building. The main entrance has pendant mounted, shallow dome fixtures with compact fluorescent lamps and low voltage track lighting. Corridors have 2x4 recessed grid fluorescent troffers with acrylic prismatic lenses and low voltage track lighting at the end of the corridor by the stairwells. Classrooms are provided with continuous rows of cable suspended, direct/indirect, 3 lamp fixtures with parabolic blade baffles. Multiple switches are provided in classrooms for control of lighting fixtures.

The cafeteria and gymnasium have stem-mounted, industrial type metal halide lighting fixtures. The auditorium is illuminated with pendant mounted, opal shaped fixtures with compact fluorescent lamps. There is also one row of electrics above the stage and a wall mounted lighting position on each side of the auditorium, each with four (4) theatrical spot lights. There are two (2) ETC Smartpack dimmer panels that control the auditorium house and stage lighting fixtures.

The kitchen and restrooms have lay-in grid ceilings with recessed fluorescent troffers with acrylic lenses. Industrial 4 foot fluorescent fixtures are used in mechanical/electrical spaces and 4 foot fluorescent wraparounds in stairwells.

Exterior lighting is provided by building mounted HID and LED floodlighting fixtures. There are (10) wall pack fixtures on the front of the building that uplight the façade. LED wall packs are provided at exit discharges. The exterior LED fixtures were installed in 2014.

Fire Alarm System-- The fire alarm system is an addressable type by General Electric that was installed in 2009. The GE EST 2 fire alarm control panel (FACP) is located in the Main Electrical Room. The system consists of pull stations, smoke and heat detectors, and audible and visual notification appliances. Automatic detection devices are provided in the elevator lobbies and machine room. Notification appliances are provided in all classrooms, restrooms and multi-occupant rooms. The fire alarm system complies with current NFPA codes and ADA guidelines, and has a remaining useful life that extends beyond this report.

Telephone/LAN-- A data outlet and telephone is provided in each classroom. Wireless access points are provided in the corridors and throughout the entire school for Wi-Fi service. The Main Distribution Frame and Telecommunications Room is located on the Third Floor, across the corridor from Room 305.

Public Address/Paging/Sound Systems-- The paging system is accessed through the telephone system. Paging speakers are provided in classrooms and throughout the building; recessed speakers in lay-in ceiling grids and surface mounted where there is exposed structure. Horn type speakers are used in the cafeteria, gymnasium and outside. Obsolete wall mounted speakers still remain in many rooms. The paging system is in good condition with an estimated remaining useful life of 13 years.

There is a separate sound cabinet and speaker system for the Auditorium.

Clock and Program System-- There is no clock system in this school. Individual battery-operated clocks are provided in classrooms and other rooms, as needed. Classrooms use the paging speakers for announcements and program system.

Video Surveillance and Security Systems-- Interior video surveillance cameras provide coverage of all corridors, auditorium, gymnasium, cafeteria and stairwells. Exterior cameras are building mounted and provide coverage of the site, entrances and paved parking/play areas. There are approximately 18 cameras that are monitored on a laptop computer. The video surveillance cameras were reported to be approximately 10 years old and need to be replaced. An allowance for replacement of 12 interior cameras is included in this report.

Motion sensors are provided in corridors. Magnetic door contacts are provided on many doors. All of the exterior doors are provided with magnetic door locks.

Emergency Power System--There is no standby generator in this facility. There is no recommendation at this time to add a standby generator.

Emergency Lighting System / Exit Lighting—Battery-powered emergency lighting units (ELUs) provide emergency lighting. . ELUs are located in all classrooms, corridors, cafeteria, gymnasium, auditorium, restrooms and other spaces. Remote emergency lighting heads are also used in smaller rooms and on the building exterior at exit discharges. Exit signs are LED type and provided with battery backup. Exit sign locations meet code, except for the exit signs located above the west stairwell door on each floor that are not visible when viewed looking down the corridor. An additional exit sign and ELU should be provided at the west end of the corridor on Floors 1, 2, 3 and 4.

Lightning Protection System --There is no lightning protection system for this building.

Conveying System--There is one ThyssenKrupp passenger elevator with hydraulic power unit and 2500 pound capacity rating that serves all floors. The machine room is located in the Basement and is provided with elevator and cab lighting disconnect switches and has smoke and heat detectors, as required by code. The elevator was installed in 2006 and has a remaining useful life that extends beyond this report. There is also a one person vertical platform lift at the gymnasium for physically disabled persons.

GROUNDS

The parking area was recently resurfaced and re-stripped as part of the recovery effort of 2006. There were no issues that surfaced during the time of the inspection therefore no recommendations are required at this time.

The fence system consists of a metal picket fence that was recently repainted as reported during the time of the inspection. This fence system is expected to have a normal life cycle that extends beyond the purview of this report. There are no deficiencies required at this time.

This school is one of the areas that sets the example for dumpster isolation. This dumpster is isolated in a fenced in secure location away from the students and the general public.

The exterior stairs have a very modern design of hand and guard railing that meets the current legislation and provides a safe egress point. However, considering the exit points around this school, one minor issue remains. Some of the single exit doors at ground level or near ground level have a single step. Care should be taken to ensure that the single stair and exit door do not create a pinch point between the door and the stair.

The sidewalk system is original to the buildings construction. There are a several areas of cracking concrete but no tripping hazards. The sidewalk system is expected to expire in the near future. Removal of the entire system is recommended. Universal upgrades are required and should include all aspects of current ADA legislation.

The landscaping is in good condition and well maintained but with no irrigation system. The area near South Hutchinson Street will require upgrading after the recommended basement wall sealing recommendation included in this report. This deficiency provides a budgetary consideration for the installation and care of new landscaping and of an irrigation system for this site.

Site Lighting— Site lighting for the north paved parking lot and play areas is provided from building mounted LED floodlighting fixtures that were installed in 2014. There are no pole mounted lighting fixtures in the parking lot and play areas.

Site video surveillance—there are six (6) cameras mounted on the exterior of the building to provide surveillance of building entrances, parking lot and site. Cameras are approximately 10 years old and need to be replaced.

RECOMMENDATIONS

- Remove VAT and replace with VCT
- Remove and replace stage curtain
- Replace inadequate or install proper stair railing - select appropriate material
- Replace missing or damaged signage
- Remove and replace interior doors
- Install fire rated walls and door where required
- Add firestopping - per penetration
- Remove and Replace Built Up Roof
- Remove and replace exterior doors
- Remove and replace aluminum windows
- Repair cracks in masonry
- Waterproof basement or foundation walls

- Replace landscape beds - including irrigation
- Remove and replace concrete sidewalk or paving
- Inspect old cast iron sanitary piping including camera observation and replace damaged sections.
- Install new building automation system with remote computer control capability.
- Replace two older duplex sump pumps in space adjacent to boiler room.
- Install two new sixty five hp sectional cast iron hot water oil fired boilers in mechanical room to replace shared capacity currently used from adjacent school. Connect to existing hot water system.
- Replace 225A Panelboard E1 on stage left in the auditorium that serves the stage and auditorium house lighting.
- Provide an allowance for the replacement of (20) fluorescent lighting fixtures with T12 lamps with new fixtures having T8 or T5 lamps.
- Provide an allowance for the replacement of 12 interior video surveillance cameras. Provide a monitor and 16 channel DVR with IP protocol and hard drive in the Main Server Room.
- Provide a battery-powered exit sign and emergency lighting unit (ELU) at the west end of the corridor on Floors 1, 2, 3 and 4. Exit signs are not visible when viewed looking down the corridor and the ELUs are located too far from the stairwell doors.
- Provide an allowance for the replacement of 6 exterior video surveillance cameras.

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B215001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S219001		

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	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	3.86 %	$45,596.46
B10 - Superstructure	37.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	50.68 %	28.73 %	$1,569,490.01
B30 - Roofing	59.97 %	89.59 %	$677,640.22
C10 - Interior Construction	47.94 %	5.38 %	$108,252.97
C20 - Stairs	37.00 %	26.53 %	$30,674.24
C30 - Interior Finishes	73.73 %	0.71 %	$30,333.34
D10 - Conveying	74.29 %	0.00 %	$0.00
D20 - Plumbing	72.75 %	24.93 %	$409,593.65
D30 - HVAC	72.62 %	24.42 %	$2,227,374.32
D40 - Fire Protection	74.29 %	0.00 %	$0.00
D50 - Electrical	63.53 %	3.52 %	$169,865.31
E10 - Equipment	74.29 %	0.00 %	$0.00
E20 - Furnishings	77.50 %	7.92 %	$13,831.55
Totals:	**58.08 %**	**12.80 %**	**$5,282,652.07**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
A1010	Standard Foundations	$23.16	S.F.	82,000	100	1921	2021	2052	37.00 %	0.00 %	37			$1,899,120
A1030	Slab on Grade	$5.17	S.F.	82,000	100	1921	2021	2052	37.00 %	0.00 %	37			$423,940
A2010	Basement Excavation	$4.36	S.F.	82,000	100	1921	2021	2052	37.00 %	0.00 %	37			$357,520
A2020	Basement Walls	$10.05	S.F.	82,000	100	1921	2021	2052	37.00 %	5.53 %	37		$45,596.46	$824,100
B1010	Floor Construction	$85.94	S.F.	82,000	100	1921	2021	2052	37.00 %	0.00 %	37			$7,047,080
B1020	Roof Construction	$9.26	S.F.	20,000	100	1921	2021	2052	37.00 %	0.00 %	37			$185,200
B2010	Exterior Walls	$43.78	S.F.	82,000	100	1921	2021	2052	37.00 %	1.35 %	37		$48,434.21	$3,589,960
B2020	Exterior Windows	$21.40	S.F.	82,000	40	2006	2046		77.50 %	85.64 %	31		$1,502,841.16	$1,754,800
B2030	Exterior Doors	$1.45	S.F.	82,000	25	2007	2032		68.00 %	15.32 %	17		$18,214.64	$118,900
B3010105	Built-Up	$37.76	S.F.	20,000	20	1980	2000	2027	60.00 %	89.73 %	12		$677,640.22	$755,200
B3020	Roof Openings	$0.06	S.F.	20,000	30	1980	2010	2027	40.00 %	0.00 %	12			$1,200
C1010	Partitions	$17.91	S.F.	82,000	100	1921	2021	2052	37.00 %	2.38 %	37		$34,988.12	$1,468,620
C1020	Interior Doors	$3.51	S.F.	82,000	40	2006	2046		77.50 %	6.63 %	31		$19,082.35	$287,820
C1030	Fittings	$3.12	S.F.	82,000	40	2006	2046		77.50 %	21.18 %	31		$54,182.50	$255,840
C2010	Stair Construction	$1.41	S.F.	82,000	100	1921	2021	2052	37.00 %	26.53 %	37		$30,674.24	$115,620
C3010230	Paint & Covering	$13.21	S.F.	82,000	10	2006	2016	2027	120.00 %	0.00 %	12			$1,083,220
C3010232	Wall Tile	$2.63	S.F.	82,000	30	2006	2036		70.00 %	0.00 %	21			$215,660
C3020412	Terrazzo & Tile	$75.52	S.F.	5,000	50	1921	1971	2027	24.00 %	0.00 %	12			$377,600

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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 $
C3020413	Vinyl Flooring	$9.68	S.F.	62,000	20	2006	2026		55.00 %	5.05 %	11		$30,333.34	$600,160
C3020414	Wood Flooring	$22.27	S.F.	12,000	25	2006	2031		64.00 %	0.00 %	16			$267,240
C3020415	Concrete Floor Finishes	$0.97	S.F.	3,000	50	2006	2056		82.00 %	0.00 %	41			$2,910
C3030	Ceiling Finishes	$20.97	S.F.	82,000	25	2006	2031		64.00 %	0.00 %	16			$1,719,540
D1010	Elevators and Lifts	$2.25	S.F.	82,000	35	2006	2041		74.29 %	0.00 %	26			$184,500
D2010	Plumbing Fixtures	$13.52	S.F.	82,000	35	2006	2041		74.29 %	0.00 %	26			$1,108,640
D2020	Domestic Water Distribution	$1.68	S.F.	82,000	25	2006	2031		64.00 %	0.00 %	16			$137,760
D2030	Sanitary Waste	$2.52	S.F.	82,000	30			2047	106.67 %	198.22 %	32		$409,593.65	$206,640
D2040	Rain Water Drainage	$2.32	S.F.	82,000	30	1921	1951	2025	33.33 %	0.00 %	10			$190,240
D3020	Heat Generating Systems	$18.67	S.F.	82,000	35	2006	2041	2048	94.29 %	30.59 %	33		$468,305.38	$1,530,940
D3030	Cooling Generating Systems	$24.48	S.F.	82,000	30	2006	2036		70.00 %	0.00 %	21			$2,007,360
D3040	Distribution Systems	$42.99	S.F.	82,000	25	2006	2031		64.00 %	0.00 %	16			$3,525,180
D3050	Terminal & Package Units	$11.60	S.F.	82,000	20	2006	2026		55.00 %	0.00 %	11			$951,200
D3060	Controls & Instrumentation	$13.50	S.F.	82,000	20	2006	2026	2033	90.00 %	158.90 %	18		$1,759,068.94	$1,107,000
D4010	Sprinklers	$7.05	S.F.	82,000	35	2006	2041		74.29 %	0.00 %	26			$578,100
D4020	Standpipes	$1.01	S.F.	82,000	35	2006	2041		74.29 %	0.00 %	26			$82,820
D5010	Electrical Service/Distribution	$9.70	S.F.	82,000	30	2006	2036		70.00 %	4.18 %	21		$33,221.99	$795,400
D5020	Lighting and Branch Wiring	$34.68	S.F.	82,000	20	2008	2028		65.00 %	0.73 %	13		$20,725.55	$2,843,760
D5030	Communications and Security	$12.99	S.F.	82,000	15	2008	2023		53.33 %	9.62 %	8		$102,439.03	$1,065,180
D5090	Other Electrical Systems	$1.41	S.F.	82,000	30	2008	2038		76.67 %	11.66 %	23		$13,478.74	$115,620
E1020	Institutional Equipment	$4.82	S.F.	82,000	35	2006	2041		74.29 %	0.00 %	26			$395,240
E1090	Other Equipment	$11.10	S.F.	82,000	35	2006	2041		74.29 %	0.00 %	26			$910,200
E2010	Fixed Furnishings	$2.13	S.F.	82,000	40	2006	2046		77.50 %	7.92 %	31		$13,831.55	$174,660
								Total	**58.08 %**	**12.80 %**			**$5,282,652.07**	**$41,261,690**

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: Wall Tile 1%
Painted finish 60%
Brick / Unfinished 39%

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

Note: Marble Tile 6%
Vinyl 75%
Wood 14%
Concrete 5%

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

Note: There is one (1) 750 kVA, 480-208/120V step-down transformer and no other secondary transformers.

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:	**$5,282,652**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,484,272**	**$0**	**$281,233**	**$7,048,157**
*** 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	$45,596	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$45,596**
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	$48,434	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$48,434**
B2020 - Exterior Windows	$1,502,841	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,502,841**
B2030 - Exterior Doors	$18,215	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$18,215**
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	$677,640	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$677,640**
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	$34,988	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$34,988**
C1020 - Interior Doors	$19,082	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$19,082**
C1030 - Fittings	$54,183	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$54,183**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

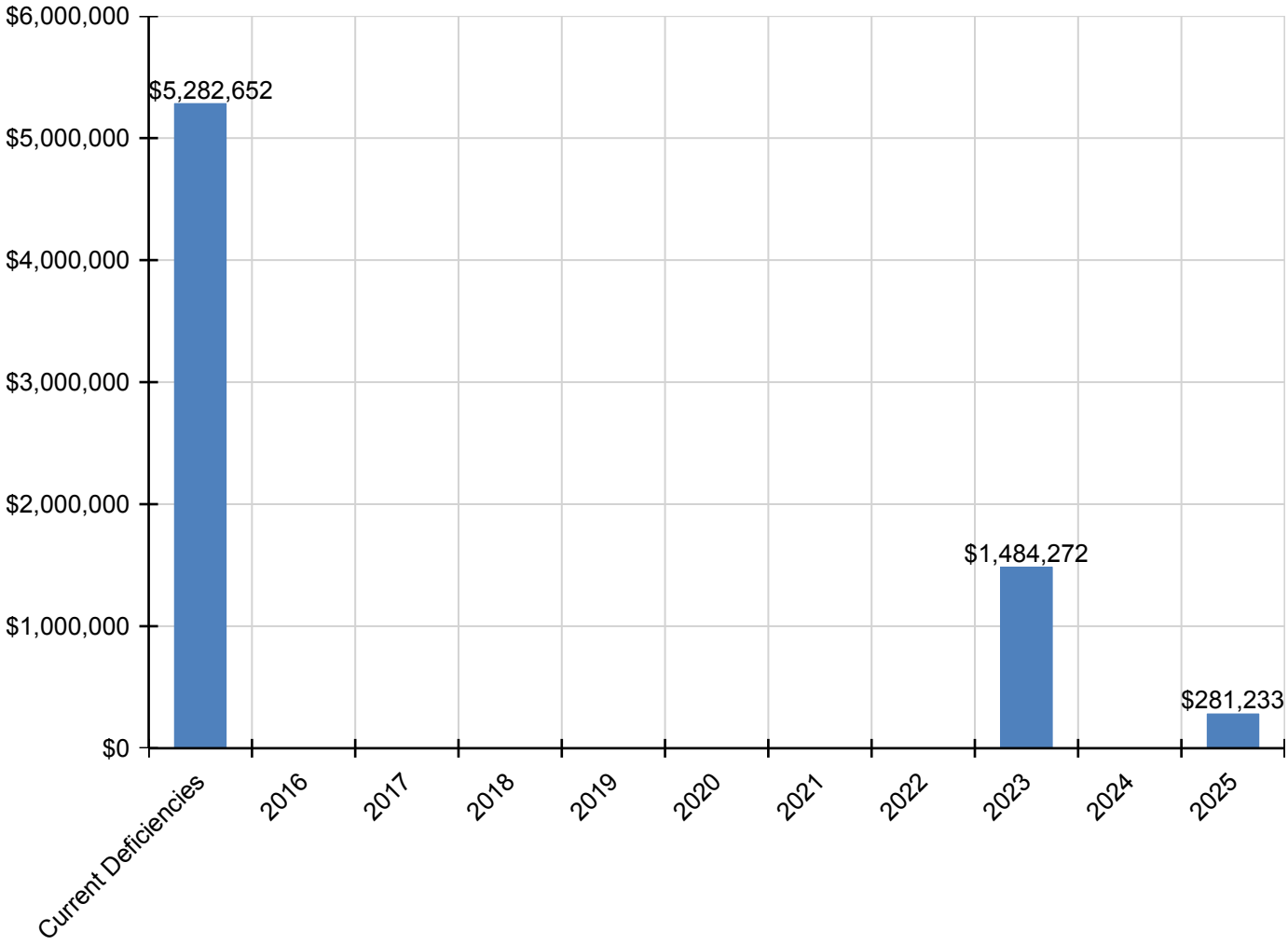
C2010 - Stair Construction	$30,674	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$30,674**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$30,333	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$30,333**
C3020414 - Wood Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D10 - Conveying	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D1010 - Elevators and Lifts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2020 - Domestic Water Distribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2030 - Sanitary Waste	$409,594	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$409,594**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$281,233	**$281,233**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$468,305	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$468,305**
D3030 - Cooling Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3040 - Distribution Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,759,069	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,759,069**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4020 - Standpipes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D50 - Electrical	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution	$33,222	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$33,222**
D5020 - Lighting and Branch Wiring	$20,726	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$20,726**
D5030 - Communications and Security	$102,439	$0	$0	$0	$0	$0	$0	$0	$1,484,272	$0	$0	**$1,586,711**
D5090 - Other Electrical Systems	$13,479	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$13,479**

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	$13,832	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$13,832**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

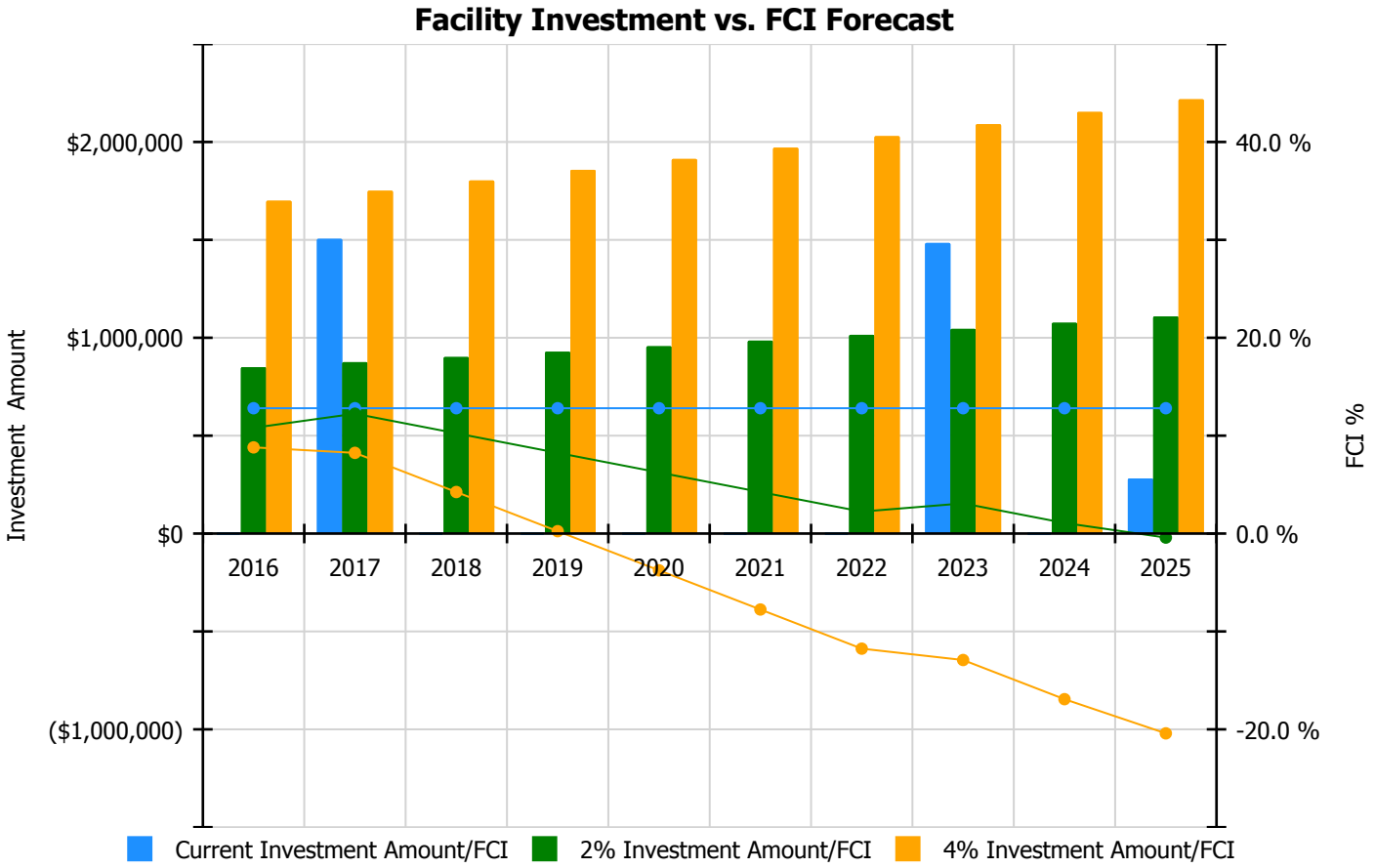
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

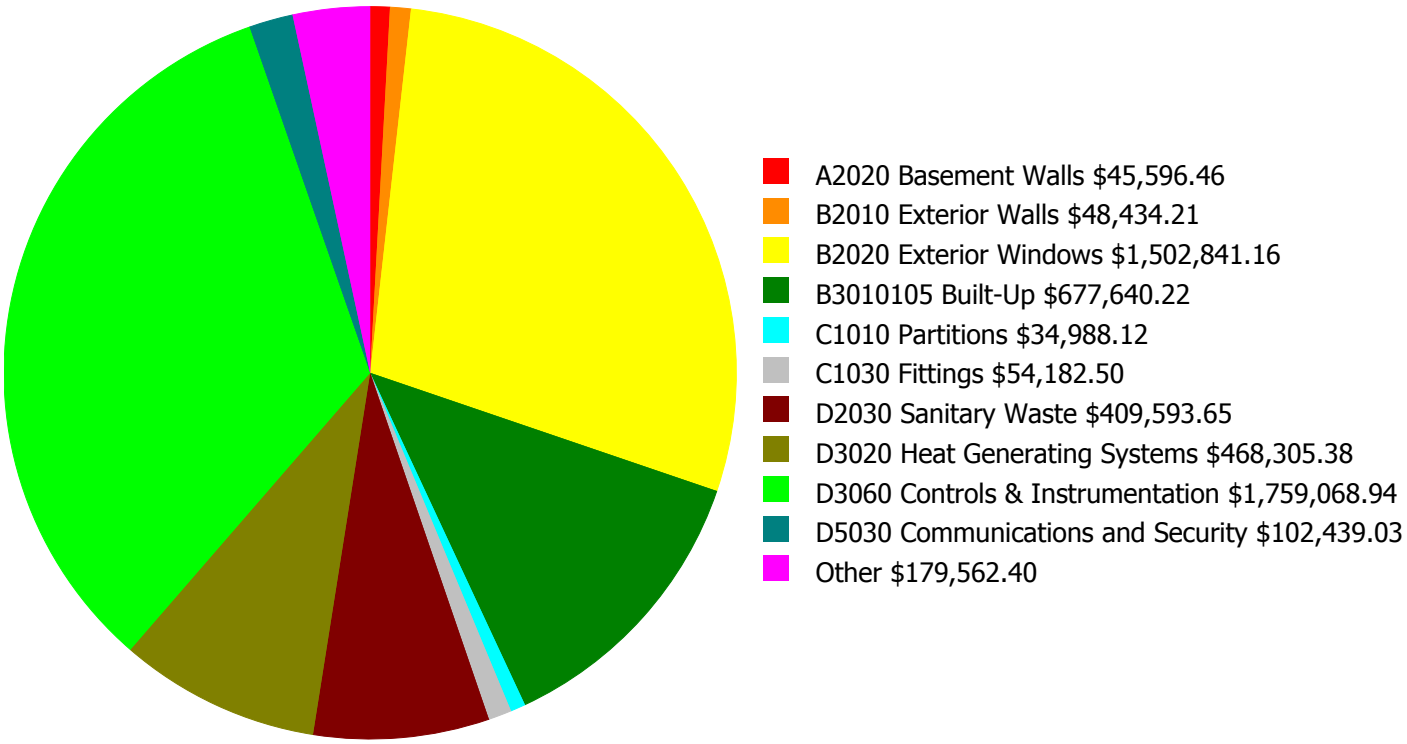
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 12.8%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$849,991.00	10.80 %	$1,699,982.00	8.80 %
2017	$1,505,254	$875,491.00	12.24 %	$1,750,981.00	8.24 %
2018	$0	$901,755.00	10.24 %	$1,803,511.00	4.24 %
2019	$0	$928,808.00	8.24 %	$1,857,616.00	0.24 %
2020	$0	$956,672.00	6.24 %	$1,913,344.00	-3.76 %
2021	$0	$985,372.00	4.24 %	$1,970,745.00	-7.76 %
2022	$0	$1,014,933.00	2.24 %	$2,029,867.00	-11.76 %
2023	$1,484,272	$1,045,381.00	3.08 %	$2,090,763.00	-12.92 %
2024	$0	$1,076,743.00	1.08 %	$2,153,486.00	-16.92 %
2025	$281,233	$1,109,045.00	-0.41 %	$2,218,090.00	-20.41 %
Total:	**$3,270,759**	**$9,744,191.00**		**$19,488,385.00**	

Deficiency Summary by System

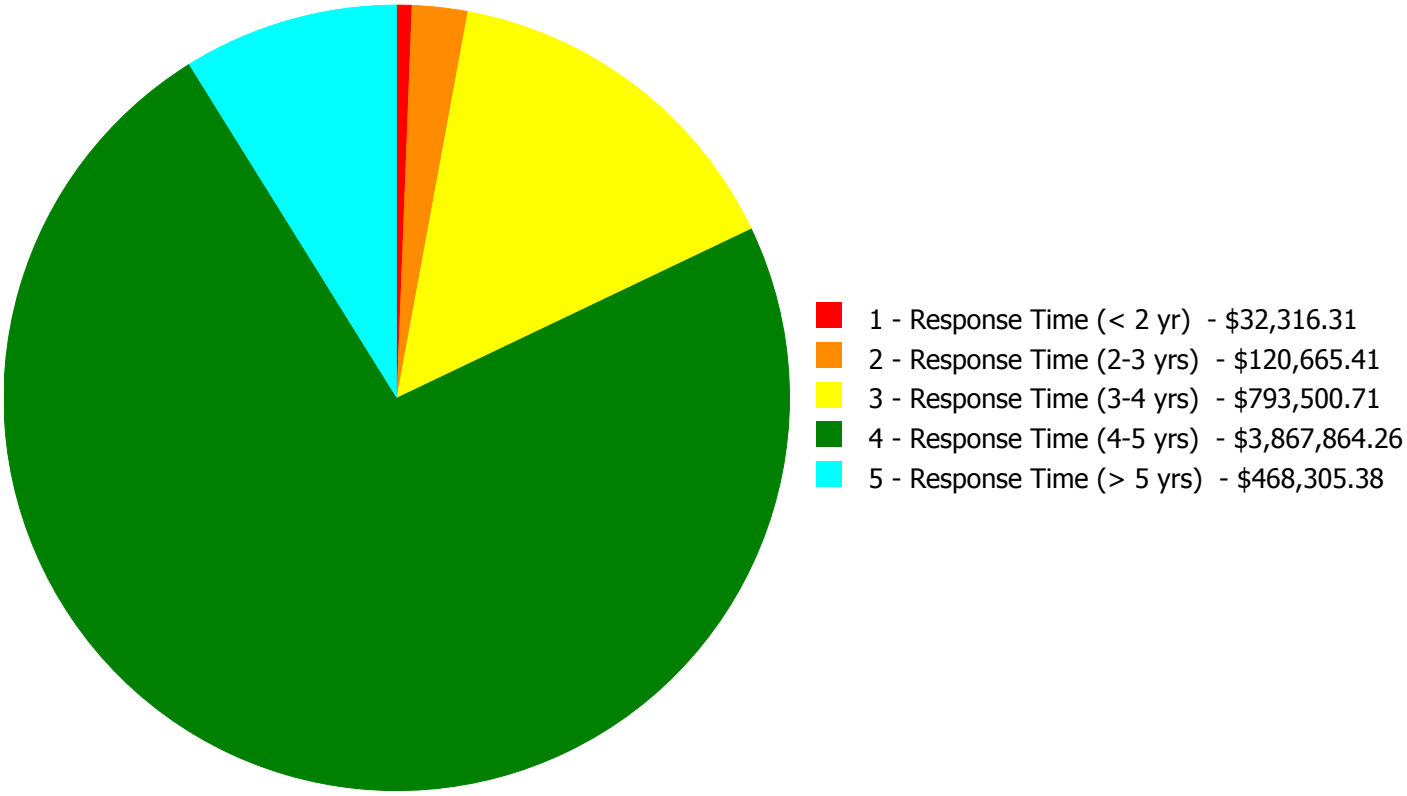
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $5,282,652.07

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: $5,282,652.07

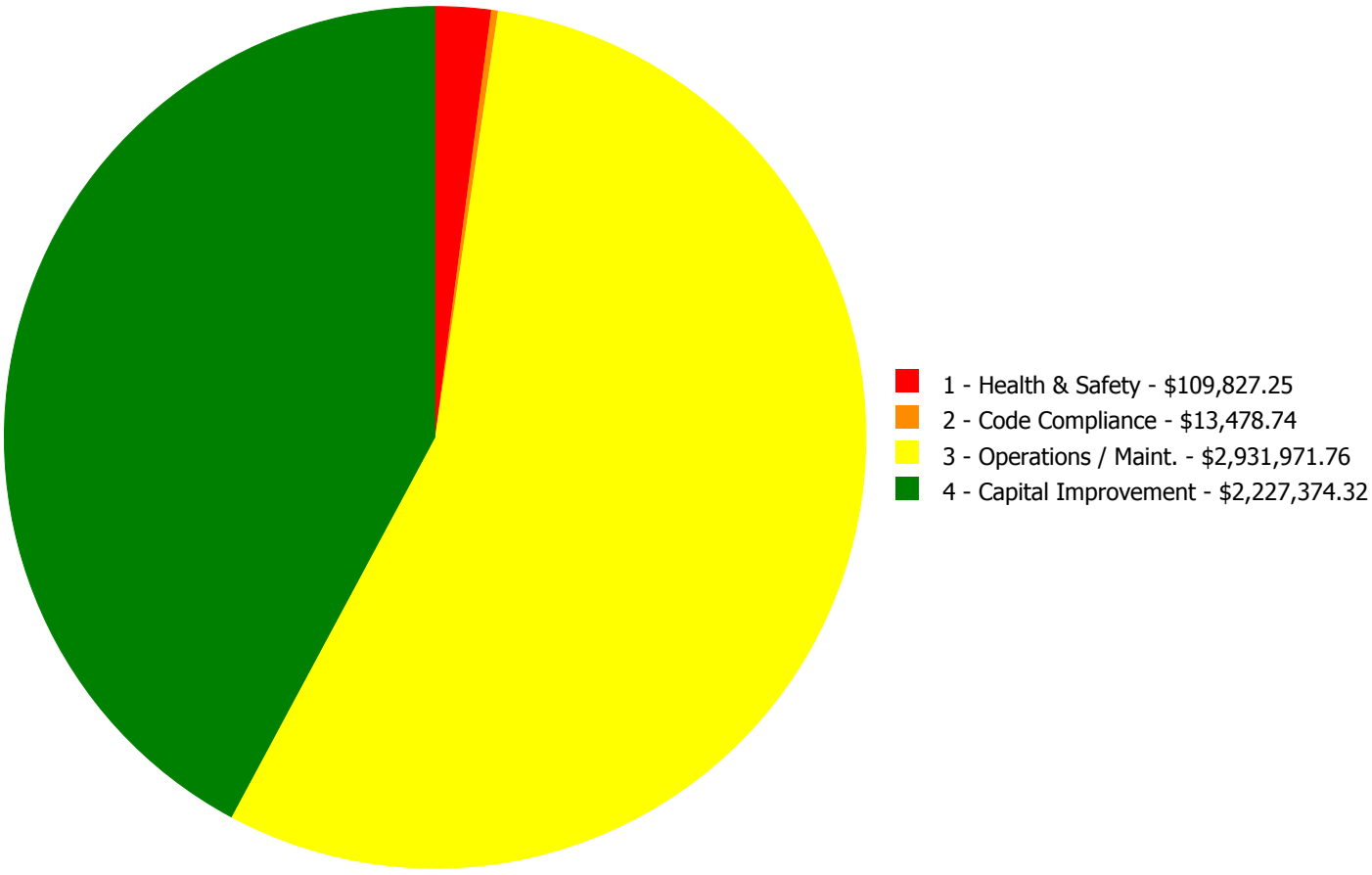
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
A2020	Basement Walls	$0.00	$45,596.46	$0.00	$0.00	$0.00	$45,596.46
B2010	Exterior Walls	$0.00	$0.00	$48,434.21	$0.00	$0.00	$48,434.21
B2020	Exterior Windows	$0.00	$0.00	$0.00	$1,502,841.16	$0.00	$1,502,841.16
B2030	Exterior Doors	$0.00	$18,214.64	$0.00	$0.00	$0.00	$18,214.64
B3010105	Built-Up	$0.00	$0.00	$677,640.22	$0.00	$0.00	$677,640.22
C1010	Partitions	$32,316.31	$2,671.81	$0.00	$0.00	$0.00	$34,988.12
C1020	Interior Doors	$0.00	$0.00	$0.00	$19,082.35	$0.00	$19,082.35
C1030	Fittings	$0.00	$54,182.50	$0.00	$0.00	$0.00	$54,182.50
C2010	Stair Construction	$0.00	$0.00	$0.00	$30,674.24	$0.00	$30,674.24
C3020413	Vinyl Flooring	$0.00	$0.00	$0.00	$30,333.34	$0.00	$30,333.34
D2030	Sanitary Waste	$0.00	$0.00	$0.00	$409,593.65	$0.00	$409,593.65
D3020	Heat Generating Systems	$0.00	$0.00	$0.00	$0.00	$468,305.38	$468,305.38
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$1,759,068.94	$0.00	$1,759,068.94
D5010	Electrical Service/Distribution	$0.00	$0.00	$33,221.99	$0.00	$0.00	$33,221.99
D5020	Lighting and Branch Wiring	$0.00	$0.00	$20,725.55	$0.00	$0.00	$20,725.55
D5030	Communications and Security	$0.00	$0.00	$0.00	$102,439.03	$0.00	$102,439.03
D5090	Other Electrical Systems	$0.00	$0.00	$13,478.74	$0.00	$0.00	$13,478.74
E2010	Fixed Furnishings	$0.00	$0.00	$0.00	$13,831.55	$0.00	$13,831.55
	Total:	$32,316.31	$120,665.41	$793,500.71	$3,867,864.26	$468,305.38	$5,282,652.07

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: $5,282,652.07

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: C1010 - Partitions

Location: Hallways

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Install fire rated walls and door where required - insert number of doors

Qty: 1,400.00

Unit of Measure: S.F.

Estimate: $32,316.31

Assessor Name: Craig Anding

Date Created: 12/28/2015

Notes: There are several transom lites and sidelights constructed into hallway wall systems. It is recommended that the lites and sidelights be removed and replaced with a fire rated wall construction. The deficiency provides a budgetary consideration to correct the hallway, transoms, lites and sidelights.

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

System: A2020 - Basement Walls

Location: Basement Wall

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Waterproof basement or foundation walls - excavate, waterproof and backfill per LF based on 5' of depth

Qty: 75.00

Unit of Measure: L.F.

Estimate: $45,596.46

Assessor Name: Craig Anding

Date Created: 12/28/2015

Notes: There is evidence of water infiltration through the basement foundations wall facing the South Hutchinson Street exterior. To improve the integrity of the basement wall excavation and waterproofing system upgrades are recommended. Improve the slope of the grade away from the foundation prior to restoring the landscaping system.

System: B2030 - Exterior Doors

Location: Roof

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 2.00

Unit of Measure: Ea.

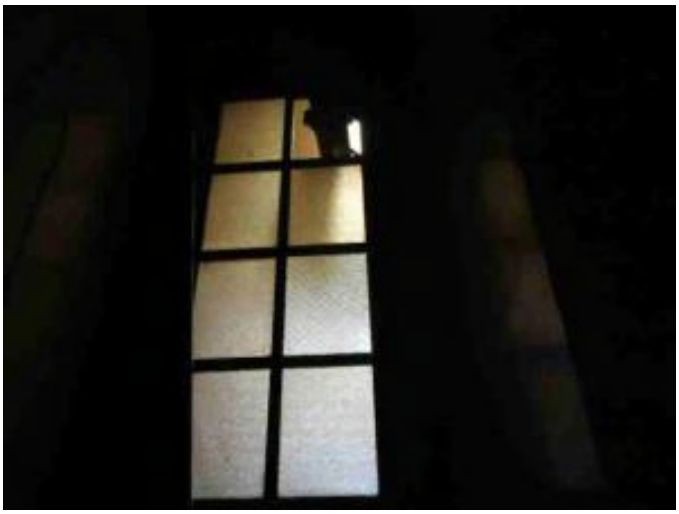
Estimate: $18,214.64

Assessor Name: Craig Anding

Date Created: 12/28/2015

Notes: The roof access exterior service doors are metal applications with metal frames. The service doors were not a part of the 2006 exterior door upgrade effort. The doors are in poor condition and aging at a faster rate than expected. The exterior 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: C1010 - Partitions



Location: Mechanical Room

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Add firestopping - per penetration - pick the type of penetration and insert the quantities in the estimate including finish restoration

Qty: 1.00

Unit of Measure: Ea.

Estimate: $2,671.81

Assessor Name: Craig Anding

Date Created: 12/28/2015

Notes: The mechanical room has several penetrations and as indicted in the photos an industrial window that has been compromised with several holes for equipment. Also, note the electrical modifications recently completed at this school has left several closet penetrations open. This deficiency provides a budgetary consideration to properly enclose the areas and to meet the current fire life safety requirements for mechanical spaces.

System: C1030 - Fittings

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 2 - Response Time (2-3 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: Craig Anding

Date Created: 12/28/2015

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.

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

System: B2010 - Exterior Walls

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 1,500.00

Unit of Measure: S.F.

Estimate: $48,434.21

Assessor Name: Craig Anding

Date Created: 12/28/2015

Notes: The exterior brick surfaces are generally in good condition for their age. The Northern wall facing the parking lot has a section that raises some concern. The bricks have cracked or spalled in the alcove and should be replaced. As indicated in the photos this area is a consistent line of degradation. 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: 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: 20,000.00

Unit of Measure: S.F.

Estimate: $677,640.22

Assessor Name: Craig Anding

Date Created: 12/28/2015

Notes: There are a number of roof sections and different roof elevations ranging from the main roof to the mechanical roof. The built up application was reported to have been installed in the early 1980'S. As indicated in the photos several repairs were recently completed however, the current age and condition of the roofing systems warrant universal upgrades. This deficiency provides a budgetary consideration for removal and replacement of the Built Up roofing system.

System: D5010 - Electrical Service/Distribution

Location: Auditorium Stage

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Panelboard

Qty: 1.00

Unit of Measure: Ea.

Estimate: $33,221.99

Assessor Name: Craig Anding

Date Created: 12/15/2015

Notes: Replace 225A Panelboard E1 on stage left in the auditorium that serves the stage and auditorium house lighting.

System: D5020 - Lighting and Branch Wiring

Location: Mechanical/electrical rooms

Distress: Obsolete

Category: 3 - Operations / Maint.

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

Correction: Replace lighting fixtures

Qty: 20.00

Unit of Measure: Ea.

Estimate: $20,725.55

Assessor Name: Craig Anding

Date Created: 12/15/2015

Notes: Provide an allowance for the replacement of (20) fluorescent lighting fixtures with T12 lamps with new fixtures having T8 or T5 lamps.

System: D5090 - Other Electrical Systems

Location: West end of Floors 1 to 4

Distress: Life Safety / NFPA / PFD

Category: 2 - Code Compliance

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

Correction: Add Emergency/Exit Lighting

Qty: 8.00

Unit of Measure: Ea.

Estimate: $13,478.74

Assessor Name: Craig Anding

Date Created: 12/15/2015

Notes: Provide a battery-powered exit sign and emergency lighting unit (ELU) at the west end of the corridor on Floors 1, 2, 3 and 4. Exit signs are not visible when viewed looking down the corridor and the ELUs are located too far from the stairwell doors.

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

System: B2020 - Exterior Windows

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 250.00

Unit of Measure: Ea.

Estimate: $1,502,841.16

Assessor Name: Craig Anding

Date Created: 12/28/2015

Notes: The exterior windows have been upgraded from the original applications. The window system is estimated to have been installed in the 1990's. Several of the windows no longer work and will require attention prior to an overall effort. Overall, the windows are in good condition based on the year of installation or last renovation. 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: C1020 - Interior Doors

Location: Gym

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 4.00

Unit of Measure: Ea.

Estimate: $19,082.35

Assessor Name: Craig Anding

Date Created: 12/28/2015

Notes: Interior doors are typically wood in wood frames with glass glazing. Other interior doors include hollow metal in hollow metal frames at some of the stairwells and exit ways, access doors. Doors are generally in like new condition as the system was upgraded as part of an interior renovation effort in 2006. A few doors appear to have been low priority during this effort such as the doors in the store room area and Gym. This deficiency provides a budgetary consideration to replace a portion of the interior doors overlooked during that effort.

System: C2010 - Stair Construction

Location: Stairs

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

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

Qty: 1.00

Unit of Measure: L.F.

Estimate: $30,674.24

Assessor Name: Craig Anding

Date Created: 12/28/2015

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). It appears as if the entire hand and guard rail system was upgraded during the 2006 renovation effort. However, the rail extensions were not included in this effort. This deficiency provides a budgetary consideration for rail extension on each floor.

System: C3020413 - Vinyl Flooring

Location: Classroom

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: 2,000.00

Unit of Measure: S.F.

Estimate: $30,333.34

Assessor Name: Craig Anding

Date Created: 12/28/2015

Notes: 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: 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: 82,000.00

Unit of Measure: S.F.

Estimate: $348,221.74

Assessor Name: Craig Anding

Date Created: 11/28/2015

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: 2.00

Unit of Measure: Ea.

Estimate: $61,371.91

Assessor Name: Craig Anding

Date Created: 11/28/2015

Notes: Replace two older duplex sump pumps in space adjacent to boiler room.

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: 82,000.00

Unit of Measure: S.F.

Estimate: $1,759,068.94

Assessor Name: Craig Anding

Date Created: 11/28/2015

Notes: Install new building automation system with remote computer control capability.

System: D5030 - Communications and Security

Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Add/Replace Video Surveillance System

Qty: 12.00

Unit of Measure: Ea.

Estimate: $102,439.03

Assessor Name: Craig Anding

Date Created: 12/15/2015

Notes: Provide an allowance for the replacement of 12 interior video surveillance cameras. Provide a monitor and 16 channel DVR with IP protocol and hard drive in the Main Server Room.

System: E2010 - Fixed Furnishings

Location: Stage

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 4 - Response Time (4-5 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: Craig Anding

Date Created: 12/28/2015

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 poor 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 5 - Response Time (> 5 yrs):

System: D3020 - Heat Generating Systems

Location: mechanical room

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace boiler, cast iron sectional (50 HP)

Qty: 2.00

Unit of Measure: Ea.

Estimate: $468,305.38

Assessor Name: Craig Anding

Date Created: 11/28/2015

Notes: Install two new sixty five hp sectional cast iron hot water oil fired boilers in mechanical room to replace shared capacity currently used from adjacent school. Connect to existing hot water system.

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D1010 Elevators and Lifts	Elevators/Lifts, residential, wheelchair lift, max	1.00	Ea.	Gymnasium	Porch-Lift	NA	NA		35	2006	2041	$23,653.40	$26,018.74
D1010 Elevators and Lifts	Hydraulic, passenger elevator, 2500 lb, 5 floors, 100 FPM	1.00	Ea.	Basement Elevator Machine Room	ThyssenKrupp TAC	EP 15025	Motor SN: 092106132640		30	2006	2036	$142,170.00	$156,387.00
D2020 Domestic Water Distribution	Pump, pressure booster system, 3 HP pump, includes diaphragm tank, control and pressure switch	1.00	Ea.	crawl space	plad				25	2006	2031	$9,861.00	$10,847.10
D3020 Heat Generating Systems	Boiler, oil fired, flame retention burner, cast iron, steam, gross output, 2175 MBH, includes standard controls and insulated flush jacket, packaged	1.00	Ea.	mechanical room	burnham	v1111			35	2006	2041	$35,185.50	$38,704.05
D3030 Cooling Generating Systems	Cooling tower, packaged unit, galvanized steel, blow through, centrifugal type, 200 ton, includes standard controls, excludes pumps and piping	1.00	Ea.	roof	evapco				30	2006	2036	$34,884.30	$38,372.73
D3040 Distribution Systems	Pump, general utility, centrifugal, end suction, horizontal base mounted, horizontal split case, rated @ 100' head, single stage, 1000 GPM, 40 H.P., 5" discharge, includes drip proof motor	2.00	Ea.	mechanical room	paco				25	2006	2031	$19,380.00	$42,636.00
D4010 Sprinklers	Fire pumps, electric, 1250 GPM, 75 psi, 75 HP, 1770 RPM, 5" pump, including controller, fittings and relief valve	1.00	Ea.	mechanical room	aurora	6139359			35	2006	2041	$31,950.70	$35,145.77
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NEHB, 277/480 V, 400 A, 1 stories, 25' horizontal	1.00	Ea.	Main Electrical Room	General Electric	Spectra Series II	NA		30	2006	2036	$17,698.50	$19,468.35
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NQOD, 120/208 V, 400 A, 1 stories, 25' horizontal	1.00	Ea.	Kitchen	General Electric	Spectra Series II	NA		30	2006	2036	$12,109.50	$13,320.45
D5010 Electrical Service/Distribution	Switchboards, pressure switch, 4 wire, 120/208 V, 4000 amp, incl CT compartment, excl CT's or PT's	1.50	Ea.	Main Electrical Room	General Electric	Spectra Series	NA		30	2006	2036	$69,552.00	$114,760.80
D5010 Electrical Service/Distribution	Switchgear installation, incl switchboard, panels & circuit breaker, 277/480 V, 1200 A	1.50	Ea.	Main Electrical Room	General Electric	Spectra Series	NA		30	2006	2036	$41,172.30	$67,934.30
D5010 Electrical Service/Distribution	Switchgear installation, incl switchboard, panels & circuit breaker, 277/480 V, 1200 A	1.00	Ea.	Main Electrical Room	General Electric	Spectra Series	NA		30	2006	2036	$41,172.30	$45,289.53
D5090 Other Electrical Systems	Variable frequency drives, enclosed, 460 volt, 40 HP motor size, NEMA 1	2.00	Ea.	mechanical room	intellipak				30	2006	2036	$12,047.40	$26,504.28
												Total:	**$635,389.10**

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):	61,000
Year Built:	1922
Last Renovation:	
Replacement Value:	$30,611,251
Repair Cost:	$11,375,949.45
Total FCI:	37.16 %
Total RSLI:	67.40 %

Description:

Facility Assessment

August 17th, 2015

School District of Philadelphia

D. Newlin Fell Elementary School

900 W. Oregon Avenue

Philadelphia, PA 19148

61,000 SF / 556 Students / LN 01

GENERAL

Mr. Dave Loftus FAC, provided input to the assessment team on current problems. Mr. Kevin Carolina Building Engineer accompanied us on our tour of the school and provided us with detailed information on the building systems and maintenance history. Mr. Carolina has been in the school less than a year.

The 4 story, 61,000 square foot building was originally constructed in 1922. The building has a multi-level basement.

ARCHITECHURAL/STRUCTURAL SYSTEMS

The building typically rests on concrete foundations and bearing walls that are not showing signs of settlement damage. The main structure typically consists of cast-in-place concrete columns, beams, and concrete one way ribbed slab. The main roof structure consists of concrete one-way slab supported by main structural frame. Main roofing is built up application in good condition. The building envelope is typically masonry and concrete with face brick in fair condition with cracks near roof drain outlets in need of repair. Elevations are enhanced minimally with decorative stonework around entrances. The original windows were replaced in the early 1990s with extruded aluminum, double hung sliding and single hung tilt windows, Lexan Plexiglas with insect/security screens. All windows are generally in poor condition with heavy hazing. Exterior doors are typically hollow metal in good condition. Public access doors have granite stoops and stairs. The building is not accessible per ADA requirements due to failing access ramp at auditorium.

Partition walls are plastered ceramic hollow blocks in good condition. Interior doors are generally wood frame and rail and stile wood with glazing doors and transoms in fair condition. Doors leading to exit stairways are hollow metal frame and doors in good condition. Most interior doors do not have lever type handles. Fittings include: toilet accessories in good condition; marble toilet partitions with composite plastic doors in good condition; and handrails and ornamental metals, generally in fair condition. Toilet partitions and accessories are not ADA accessible. Interior identifying signage is typically engraved plastic slider plaques on door surfaces in fair condition. Stair construction is generally concrete with cast iron nosing in good condition and marble staircases at auditorium entrances. Stair railings are cast iron balusters and wood railing in fair condition.

The interior wall finishes include: painted plaster with wood panel wainscot in auditorium and auditorium entrances in good condition; ceramic tile wainscot in toilets in good condition; and glazed brick wainscot in gym, kitchen, fire towers, and basement areas in good condition. Paint is generally in good condition with large damaged plaster area in auditorium and small areas throughout building due to water intrusion. Flooring includes patterned or bare concrete in stairways, corridors, toilets, storage, cafeteria, gym, and basement service areas in good condition; hardwood in most classrooms, auditorium, and stage in fair condition with some rooms in need of refinishing; and vinyl flooring in some office areas and some classrooms in good condition. Ceiling finishes include: suspended acoustic tile system in classrooms, corridors, cafeteria, and office areas in varying condition with some new and some beyond service life and in need of replacement; and painted plaster or structural concrete in toilets, stairways, gym, and auditorium, stage, and basement areas in good condition.

The building has no elevator and one lift from auditorium to first floor hallway.

Commercial and Institutional equipment includes: stage equipment in good condition, and gym equipment in fair condition. Other equipment includes: food service equipment in good condition.

Fixed furnishings include: fixed casework in classrooms, corridors and library, generally in fair to good condition; and fixed auditorium seating for 400 generally in fair condition.

MECHANICAL SYSTEMS

Toilet room fixtures throughout the building include original some 1920s toilets as well as contemporary replacements in the restrooms on each floor with floor mounted water closets, wall hung urinals and lavatories. The plumbing supplying the flush and faucet valves is exposed making it susceptible to physical damage. Basement boys and girls gang toilets have wall hung water closets with piping behind the walls. First floor kindergarten rooms have stainless steel, cabinet mounted lavatories with lever knob mixing faucets. These are not the original equipment, and their age is approximately 25 years old, but they are in fair condition and should provide reliable service for at least the next 5 years. Flush and faucet valves are in good condition and leak free. Valves can be expected to last 5 more years minimum.

The basement cafeteria kitchen has a stainless steel, three basin, floor standing, commercial, dish washing sink with commercial faucet and chemical sanitization injection system. The cafeteria sink drains to a grease trap. The sink is in good condition and will easily last 10 more years. The second floor teachers' lounge has the original enameled cast iron single basin kitchen sink, however the original gas range has been removed. The sink is not currently in use and the room is used for storage.

Service sinks are located in cleaning closets on each floor. They are cast iron with integral backsplash and trap. Faucets are lever handle operated with short neck mixing spout including vacuum breaker. Service sinks are of unknown age and some are stained but they don't leak and they drain well, so they will last at least 5 more years.

Hallways on the upper floors and kindergarten rooms have porcelain wall mounted fountains. The basement has stainless steel, wall mounted, triple basin gang fountain. They should all be upgraded to accessible fountains with integrated coolers.

Domestic water distribution piping is soldered copper. Surface corrosion is visible most areas where pipe is exposed. Exact age is unknown but is estimated to be over 25 years old, and piping should be replaced based upon age. Water service enters the building in the basement in a storage closet at the back of the dining room along the 9th Street side of the building. The 4" water line has a bronze compound 4" meter and a single swing check valve for backflow prevention. The check valve is not code compliant. There is a 2" copper bypass line for the meter and check valve. The bypass line does not have any backflow prevention and its block valve does not appear to be sealed shut. The building water entry piping should be upgraded to comply with current codes by adding double backflow prevention valves on the meter line and bypass line. The domestic water connection to the steam system has a proper double backflow preventer. There is a single 75 gallon Bradford White gas fired water heater installed in March 2010. It has 5 years useful life remaining. Hot water is circulated by an Armstrong brand pump. There is no thermal expansion tank for the hot water system, and one should be added.

Sanitary waste piping is threaded galvanized steel pipe with hubless banded cast iron repairs. Lavatory, kitchen, and lab sinks have copper traps. Roof drain piping is

similarly threaded galvanized steel pipe. Due to age and material, both drain pipe systems should be replaced. There is a floor drain sump in the boiler room with a single pump. A second pump should be installed for redundancy.

The building was originally heated using a combination of forced air from a single air handler and radiators. The air handler is no longer in use. The Fell school boiler system also supplies steam to heat George C. Thomas Junior High located to the south.

There are three boilers: H.B. Smith model 450 Mills, 18 section, cast iron, steam boiler with 4,658 MBH capacity each. They are equipped with PowerFlame gas only burners. They were installed in 1981. There is severe corrosion on the feed water supply pipe to boiler #3. The boilers should be replaced due to age. The boiler feed water tank has 3 primary pumps, each with its own feed line to a single boiler. There is a condensate collection tank with two pumps for the steam supply line to Thomas school, and the condensate return line from Thomas is pumped as well. These lines are directly buried; there is not a utility trench. There is a chemical injection system and a water softener. Combustion intake air enters the boiler room from outside through automatically controlled louvers on the south side of the building.

There is no central cooling generating system. Classrooms and offices are equipped with a total of 13 window unit air-conditioners. These units are insufficient, so a central cooling system with 150 ton capacity should be installed to replace them.

There is one air handling unit located built into the basement mechanical room. It is original to the building and includes metal screen intake filter, fan, and steam heating coils. The filter section is 12 feet wide and 12 feet tall and is heavily coated with dust. The entire air supply comes from outside through a pneumatically controlled dampers on the west side of the auditorium; there is no recirculation of building air. The air handler it is obsolete and should be replaced with a new unit including cooling coils, humidification, and dehumidification sections. Uninsulated sheet metal ductwork along the basement ceiling and clay block vertical ducts supply conditioned air to the classrooms, auditorium, and larger offices. The metal duct should be replaced with insulated duct when cooling is added to the building. Room exhaust air discharges through clay block vertical ducts to the attic plenum and exits the building through gravity vents in the roof. Toilet rooms have no exhaust ducts. The only ventilation is provided by opening windows and doors. Through wall exhaust fans should be installed. The cafeteria does not have any fuel burning appliances, and there is no fume hood. There is a through-wall propeller fan for exhausting hot air.

Steam distribution and condensate return piping is threaded steel of unknown age. The janitorial assistant did not report any problems. However, given the age of the building and the existing piping condition in the boiler room, the steam distribution piping should be examined more thoroughly and repaired as needed. There is no history of steam trap maintenance, so a steam trap survey should be conducted.

Classrooms, offices, toilet rooms, and hallways in the building have cast iron radiators with thermostatic steam traps. The auditorium has cast iron convection units built into the air supply ducts along the sides and beneath the stage. Some class rooms have threaded steel pipe radiators. The radiators are beyond their expected lifespan with some showing severe rust or vandalism. They should all be replaced with convection units. Toilet room heaters should be relocated from floor to ceilings to reduce the likelihood of rust.

The building is equipped with a pneumatic control system for heating. Classrooms have wall mounted thermostats, but many are broken. Radiators have pneumatic steam flow control valves but some have been replaced with manual angle globe valves. The control system is obsolete and inoperable. It should be completely replaced with a modern digital control system.

The building does not have sprinklers or stand pipes. A sprinkler system should be added including a fire pump if needed.

ELECTRICAL SYSTEMS

Most probably a pole mounted transformer provides the electrical service to this school. The electrical room is located in the basement on NW corner of the building. The electrical room houses the utility main disconnect switch, utility metering No 219MUC 14447 and 600A 120/240V distribution section. The existing service has no extra capacity for expansion or new Heating, Ventilation, Air Conditioning (HVAC) system. The electrical service entrance needs to be upgraded. The new service will be 480V/277V, 3 phase power, approximate 1000 Amperes and will be located in the vicinity of the existing electrical service. The new electrical service would feed a 480V Motor Control Center (MCC) and HVAC (Heating, Ventilation and Air Conditioning) equipment, and a 480V 3 phase to 120V/208V 3 phase 225 KVA step-down transformer to feed receptacles, lighting and other smaller loads.

There are 120/240V, original, recessed mounted panel-boards in each floor for lighting and receptacles and surface mounted panel-boards for window type air conditioning units. The recessed mounted panel-boards and associated wiring have exceeded the end of their useful life. The surface mounted panel-boards are sized to absorb the window type AC units only, with minimum spare capacity to absorb additional loads. All panel-boards need to be replaced. There are (1) 50KVA, (1) 37.5KVA and 25KVA phase converters from 240V to 120/208V which normally feeds newest mechanical equipment. Panel-board's doors at corridors are not locked and represent a potential hazard for students. As a safety issue all panel-boards at corridor or in areas where students are present must be provided with lockable devices.

The number of receptacles in 20% of the classrooms are inadequate. The teacher's whiteboard wall and the opposite of it need to be provided with double compartment surface raceways with receptacles 24" on center, the other two walls with minimum two-duplex outlets each, when feasible.

Classrooms and corridors are illuminated with recessed mounted fluorescent fixtures, with T-12 lamps. The auditorium is illuminated with pendant mounted architectural fixture with most probably incandescent lamps. The Gymnasium is illuminated with surface mounted fixtures with T-8 lamps. Approximately 90% of the fixtures need to be replaced.

The Fire Alarm system is approximately 30 years old. The present Fire Alarm system does not meet current code and needs to be replaced. Fire alarm system is

tested every day in the morning.

The present telephone system is adequate.

An independent and separate PA system does not exist, or is not working. School uses the telephone systems for public announcement. This system is working adequately for most part. The obsolete, non-functional devices should be removed from all rooms.

The present clock/ bell system is by Sapling synchronized clock system. System is working properly.

There is not television system.

The security system consists of CCTV cameras at corridors and stairways. There are missing CCTV cameras at the gym, auditorium, third floor and basement. Provide additional CCTV cameras.

The emergency power system consists of a diesel powered generator, manufactured by MTU on site Energy, 43KVA/35KW, 120/208V. The present emergency power system serves the corridor, exit signs, fire tower, boiler /generator/electrical room, gymnasium, lunch room, and auditorium. The diesel powered generator was installed around 2010 and is expected to provide 15 more years of useful service life.

There is adequate UPS in the IT room.

The emergency lighting is obtained with dedicated fixtures connected to the emergency generator. Exit signs are located at each exit door and corridors and are connected to the school emergency system.

The lightning protection is obtained with air terminals mounted on the school chimney. A study should be conducted to determine if the existing lightning system provide the proper protection to the school building.

The stage theatrical lighting is composed of a pendant mounted one single row of downlights that are ON/OFF from local panel-board. Provide a dimming panel and additional theatrical lighting.

The auditorium is provided with a sound system manufactured by Peavey and works properly. Sound system is approximately 10 years old and is expected to provide 5 more years of useful service life.

GROUNDS SYSTEMS

The site surrounds the building on all four sides which is set back from the street. Play yard on southeast corner is concrete paving in good condition. Yard area on the southwest side is asphalt paving in fair condition. Parking for staff vehicles is off-site or on street. Metal and chain link fence surrounding site is in good condition, however lacking vehicle security gate at Hutchinson St. Play structure in yard is in fair condition with fall protection in poor condition and failing. Landscaping includes mature trees along public sidewalks in good condition and covers 10% of the site.

Accessibility: the building does have an accessible ramp at the auditorium and accessible routes, however due to settling damage the ramp entrance is unusable as an accessible entrance. Toilets are not equipped with accessible fixtures, partitions and accessories, such as grab bars and accessible partitions. Most of the doors in the building do not have lever type door handles.

The school exit doors, building perimeter and playground/parking lot are illuminated from wall mounted High Intensity discharge (HID) fixtures. No additional fixtures are required.

CCTV cameras are provided facing the playground/parking lot. To provide a complete coverage of the building perimeter additional cameras are required.

There are wall mounted loud speakers facing the playground/parking lot. No additional loud speakers are required.

RECOMMENDATIONS

- Repair and re-point brickwork around roof drain outlets – allowing water intrusion
- Replace Plexiglas window – hazed
- Replace interior door handles with lever type handles and latch sets
- Install accessible toilet partitions and accessories
- Repair and paint interior plaster walls – damaged (10% of plaster area)
- Refinish wood floor – 30% of wood floor area
- Replace suspended acoustic tile ceiling system – beyond service life (50% of suspended ceiling)
- Install elevator for accessibility
- Repair accessible ramp at auditorium entrance
- Install vehicle access gate

- Replace drinking fountains with refrigerated, accessible fountains.
- Replace domestic water distribution piping due to age.
- Install double back flow prevention valves at water entry to comply with codes.
- Add thermal expansion tank to hot water system.
- Replace sanitary drain piping due to age.
- Replace roof drain piping due to age.
- Install second sump pump.
- Replace all three boilers due to age and corrosion.
- Install 150 ton air-conditioning system to replace inadequate window units.
- Replace obsolete air handler including uninsulated ductwork.
- Install exhaust fans in toilet rooms (10).
- Conduct steam trap survey and replace as needed and replace cast iron radiators with finned tube units due to age and rust.
- Upgrade obsolete pneumatic control system to digital.
- Install fire sprinkler system with fire pump if needed
- Provide a new electrical service 480V/277V, 3 phase power, approximate 1000 Amperes and will be located in the vicinity of the existing electrical service.
- Replace the entire distribution system with new panels and new wiring/conduits. Approximate (16) 208/120V panel boards.
- Provide (2)25 FT of surface raceways with 24" receptacles on center and two-duplex wall mount receptacles. Approximate 112
- Replace 90% of the existing lighting fixtures with up/down, recessed fluorescent fixtures with T8 lamps in classroom/offices and corridors.
- Replace old fire alarm system with addressable type with audio/visual devices at corridors and classrooms. Approximate 82 devices
- Add CCTV cameras to provide a full coverage of the building interior. Approximate 18 CCTV cameras
- Prepare a study to determine if the existing lightning system provide the proper protection to the school building.
- Provide a dimming system and additional theatrical lighting.Provide 8 CCTV cameras to provide complete coverage of the building exterior.

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B219001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S219001		

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	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	0.00 %	$0.00
B10 - Superstructure	37.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	37.65 %	38.62 %	$1,328,142.20
B30 - Roofing	50.00 %	0.00 %	$0.00
C10 - Interior Construction	35.59 %	2.38 %	$35,651.31
C20 - Stairs	37.00 %	0.00 %	$0.00
C30 - Interior Finishes	66.76 %	14.91 %	$460,196.73
D10 - Conveying	77.14 %	296.43 %	$1,012,601.25
D20 - Plumbing	45.14 %	82.63 %	$1,029,279.30
D30 - HVAC	107.77 %	67.63 %	$4,589,036.19
D40 - Fire Protection	92.47 %	177.49 %	$872,633.65
D50 - Electrical	109.55 %	48.12 %	$1,725,353.76
E10 - Equipment	77.82 %	33.27 %	$323,055.06
E20 - Furnishings	20.00 %	0.00 %	$0.00
Totals:	**67.40 %**	**37.16 %**	**$11,375,949.45**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
A1010	Standard Foundations	$18.40	S.F.	61,000	100	1922	2022	2052	37.00 %	0.00 %	37			$1,122,400
A1030	Slab on Grade	$7.73	S.F.	61,000	100	1922	2022	2052	37.00 %	0.00 %	37			$471,530
A2010	Basement Excavation	$6.55	S.F.	61,000	100	1922	2022	2052	37.00 %	0.00 %	37			$399,550
A2020	Basement Walls	$12.70	S.F.	61,000	100	1922	2022	2052	37.00 %	0.00 %	37			$774,700
B1010	Floor Construction	$75.10	S.F.	61,000	100	1922	2022	2052	37.00 %	0.00 %	37			$4,581,100
B1020	Roof Construction	$13.88	S.F.	61,000	100	1922	2022	2052	37.00 %	0.00 %	37			$846,680
B2010	Exterior Walls	$36.91	S.F.	61,000	100	1922	2022	2052	37.00 %	0.72 %	37		$16,144.74	$2,251,510
B2020	Exterior Windows	$18.01	S.F.	61,000	40	1990	2030		37.50 %	119.42 %	15		$1,311,997.46	$1,098,610
B2030	Exterior Doors	$1.45	S.F.	61,000	25	2004	2029		56.00 %	0.00 %	14			$88,450
B3010105	Built-Up	$37.76	S.F.	19,945	20	2005	2025		50.00 %	0.00 %	10			$753,123
B3020	Roof Openings	$0.06	S.F.	61,000	20	2005	2025		50.00 %	0.00 %	10			$3,660
C1010	Partitions	$17.91	S.F.	61,000	100	1922	2022	2052	37.00 %	0.00 %	37			$1,092,510
C1020	Interior Doors	$3.51	S.F.	61,000	40	1983	2023		20.00 %	13.00 %	8		$27,828.47	$214,110
C1030	Fittings	$3.12	S.F.	61,000	40	1993	2033		45.00 %	4.11 %	18		$7,822.84	$190,320
C2010	Stair Construction	$1.41	S.F.	61,000	100	1922	2022	2052	37.00 %	0.00 %	37			$86,010
C3010230	Paint & Covering	$14.25	S.F.	61,000	10	2011	2021		60.00 %	9.86 %	6		$85,670.76	$869,250
C3010232	Wall Tile	$1.57	S.F.	61,000	30	1993	2023		26.67 %	0.00 %	8			$95,770
C3020413	Vinyl Flooring	$9.68	S.F.	15,250	20	2005	2025		50.00 %	0.00 %	10			$147,620
C3020414	Wood Flooring	$22.27	S.F.	30,500	25	2005	2030		60.00 %	14.50 %	15		$98,517.50	$679,235
C3020415	Concrete Floor Finishes	$0.97	S.F.	15,250	50	1993	2043		56.00 %	0.00 %	28			$14,793
C3030	Ceiling Finishes	$20.97	S.F.	61,000	25	2010	2035		80.00 %	21.58 %	20		$276,008.47	$1,279,170
D1010	Elevators and Lifts	$5.60	S.F.	61,000	35	2007	2042		77.14 %	296.43 %	27		$1,012,601.25	$341,600
D2010	Plumbing Fixtures	$13.52	S.F.	61,000	35	1924	1959	2021	17.14 %	9.51 %	6		$78,464.48	$824,720
D2020	Domestic Water Distribution	$1.68	S.F.	61,000	25	1924	1949	2040	100.00 %	360.83 %	25		$369,780.98	$102,480
D2030	Sanitary Waste	$2.90	S.F.	61,000	25	1924	1949	2040	100.00 %	175.54 %	25		$310,533.61	$176,900
D2040	Rain Water Drainage	$2.32	S.F.	61,000	30	1924	1954	2045	100.00 %	191.14 %	30		$270,500.23	$141,520
D3020	Heat Generating Systems	$18.67	S.F.	61,000	35	1981	2016	2052	105.71 %	133.32 %	37		$1,518,307.89	$1,138,870
D3030	Cooling Generating Systems	$24.48	S.F.	61,000	30			2047	106.67 %	48.39 %	32		$722,672.71	$1,493,280
D3040	Distribution Systems	$42.99	S.F.	61,000	25	1924	1949	2042	108.00 %	39.64 %	27		$1,039,480.49	$2,622,390
D3050	Terminal & Package Units	$11.60	S.F.	61,000	20	1924	1944	2037	110.00 %	0.00 %	22			$707,600
D3060	Controls & Instrumentation	$13.50	S.F.	61,000	20	1965	1985	2037	110.00 %	158.90 %	22		$1,308,575.10	$823,500
D4010	Sprinklers	$7.05	S.F.	61,000	35			2052	105.71 %	202.91 %	37		$872,633.65	$430,050
D4020	Standpipes	$1.01	S.F.	61,000	35				0.00 %	0.00 %				$61,610
D5010	Electrical Service/Distribution	$9.70	S.F.	61,000	30	1924	1954	2047	106.67 %	136.97 %	32		$810,428.00	$591,700
D5020	Lighting and Branch Wiring	$34.68	S.F.	61,000	20	1924	1944	2037	110.00 %	31.19 %	22		$659,853.58	$2,115,480
D5030	Communications and Security	$12.99	S.F.	61,000	15	1924	1939	2032	113.33 %	29.48 %	17		$233,599.88	$792,390
D5090	Other Electrical Systems	$1.41	S.F.	61,000	30	2010	2040		83.33 %	24.96 %	25		$21,472.30	$86,010
E1020	Institutional Equipment	$4.82	S.F.	61,000	35	1983	2018	2052	105.71 %	109.88 %	37		$323,055.06	$294,020
E1090	Other Equipment	$11.10	S.F.	61,000	35	2003	2038		65.71 %	0.00 %	23			$677,100
E2010	Fixed Furnishings	$2.13	S.F.	61,000	40	1983	2023		20.00 %	0.00 %	8			$129,930
								Total	**67.40 %**	**37.16 %**			**$11,375,949.45**	**$30,611,251**

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: 90% - Paint & Coverings
10% - Wall Tile (8% glazed brick, 2% ceramic)

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

Note: 25% - Vinyl Flooring
50% - Wood Flooring
25% - Concrete Floor Finishes

System: D5010 - Electrical Service/Distribution

Note: (1) 50KVA, (1) 37.5 and (1) 25KVA phase converters , 240V-120/208V

Renewal Schedule

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

Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$11,375,949**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,224,958**	**$0**	**$612,852**	**$0**	**$1,336,987**	**$15,550,746**
*** 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	$16,145	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$16,145**
B2020 - Exterior Windows	$1,311,997	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,311,997**
B2030 - Exterior Doors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B30 - Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010 - Roof Coverings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010105 - Built-Up	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,113,349	**$1,113,349**
B3020 - Roof Openings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,411	**$5,411**
C - Interiors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C10 - Interior Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1010 - Partitions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1020 - Interior Doors	$27,828	$0	$0	$0	$0	$0	$0	$0	$298,351	$0	$0	**$326,179**
C1030 - Fittings	$7,823	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$7,823**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

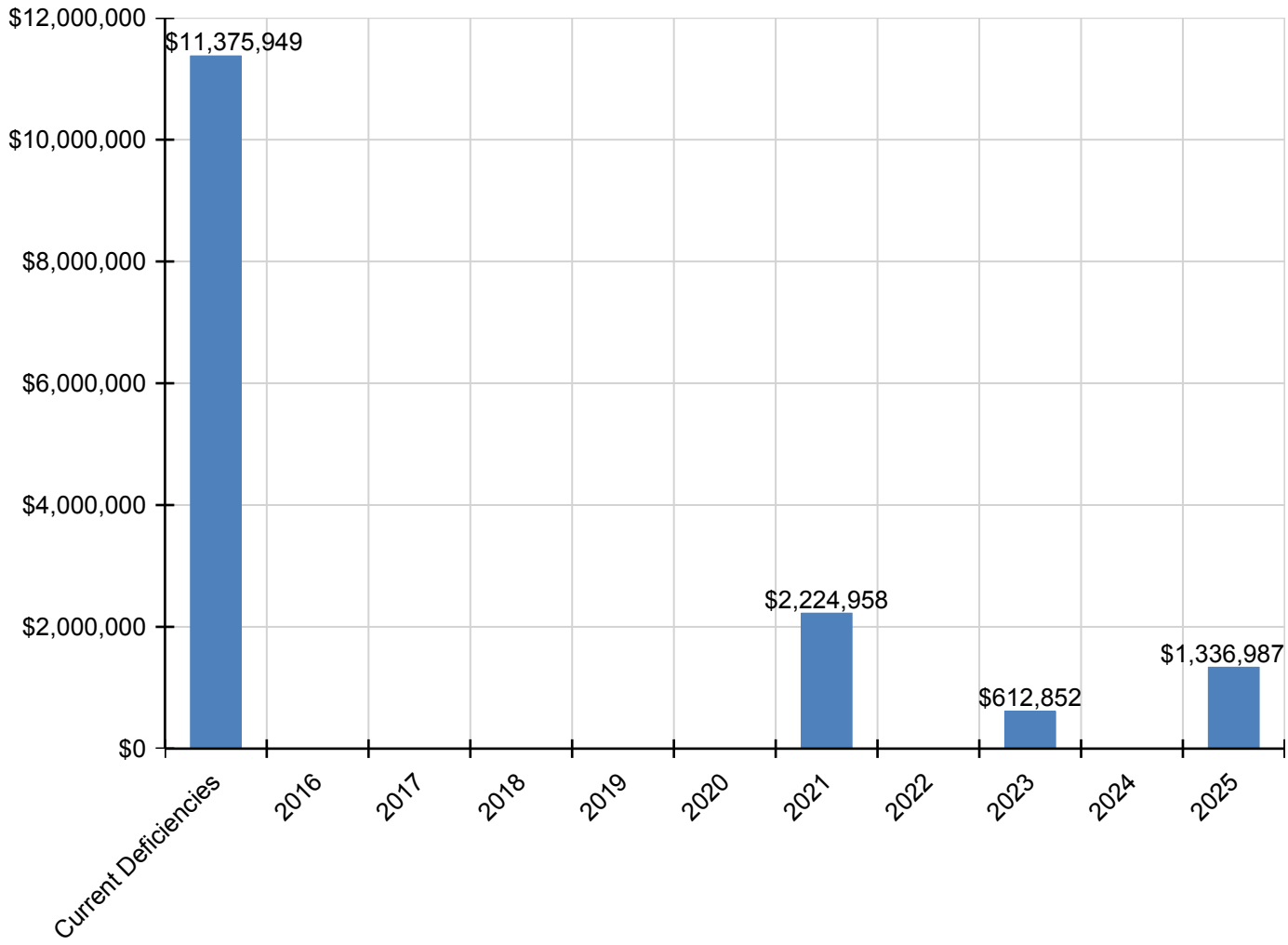
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$85,671	$0	$0	$0	$0	$0	$1,141,723	$0	$0	$0	$0	**$1,227,394**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$133,450	$0	$0	**$133,450**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$218,228	**$218,228**
C3020414 - Wood Flooring	$98,518	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$98,518**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$276,008	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$276,008**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D10 - Conveying	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D1010 - Elevators and Lifts	$1,012,601	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,012,601**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$78,464	$0	$0	$0	$0	$0	$1,083,235	$0	$0	$0	$0	**$1,161,699**
D2020 - Domestic Water Distribution	$369,781	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$369,781**
D2030 - Sanitary Waste	$310,534	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$310,534**
D2040 - Rain Water Drainage	$270,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$270,500**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$1,518,308	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,518,308**
D3030 - Cooling Generating Systems	$722,673	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$722,673**
D3040 - Distribution Systems	$1,039,480	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,039,480**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,308,575	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,308,575**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$872,634	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$872,634**
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	$810,428	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$810,428**
D5020 - Lighting and Branch Wiring	$659,854	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$659,854**
D5030 - Communications and Security	$233,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$233,600**
D5090 - Other Electrical Systems	$21,472	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$21,472**
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	$323,055	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$323,055**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$181,051	$0	$0	**$181,051**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

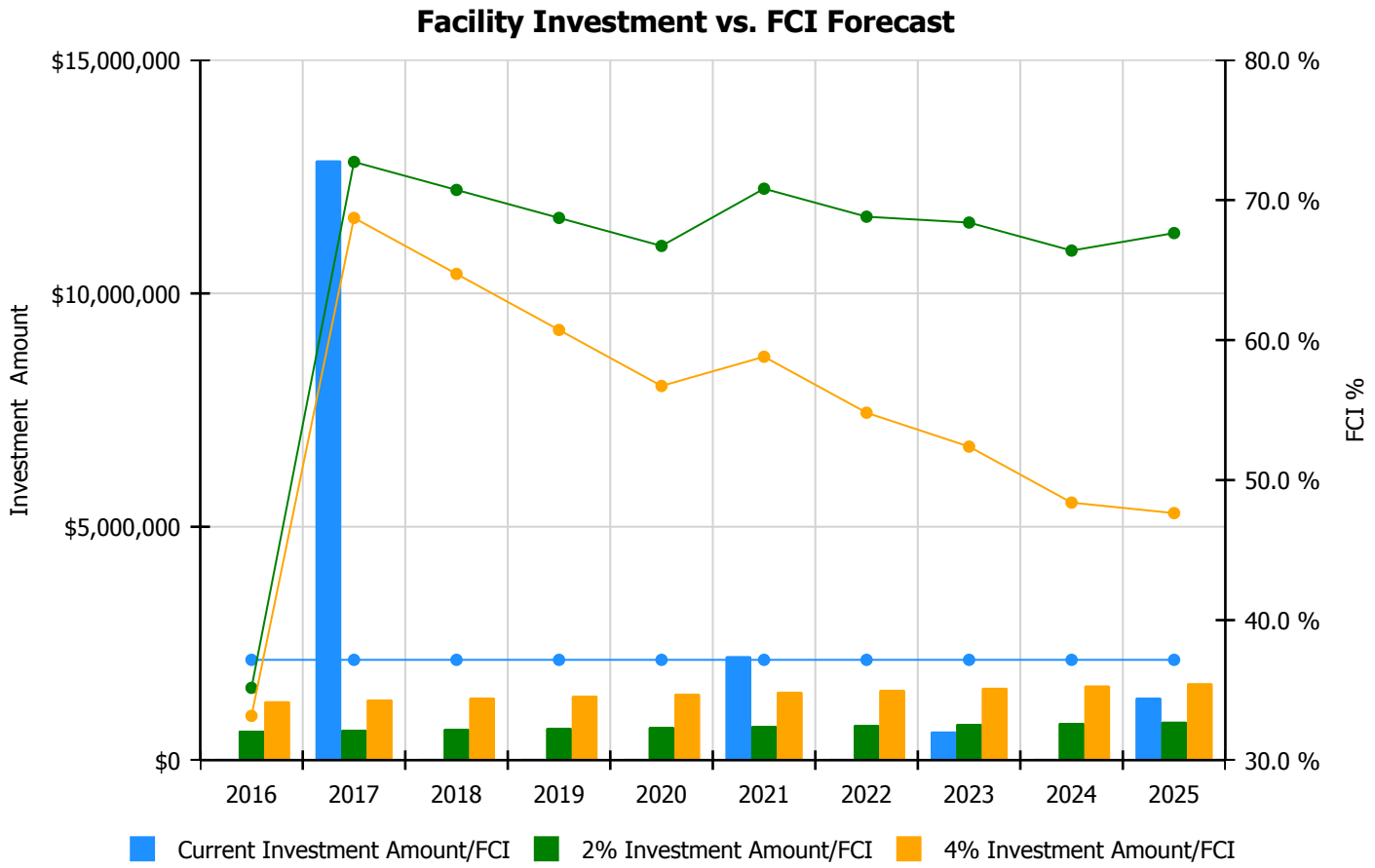
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

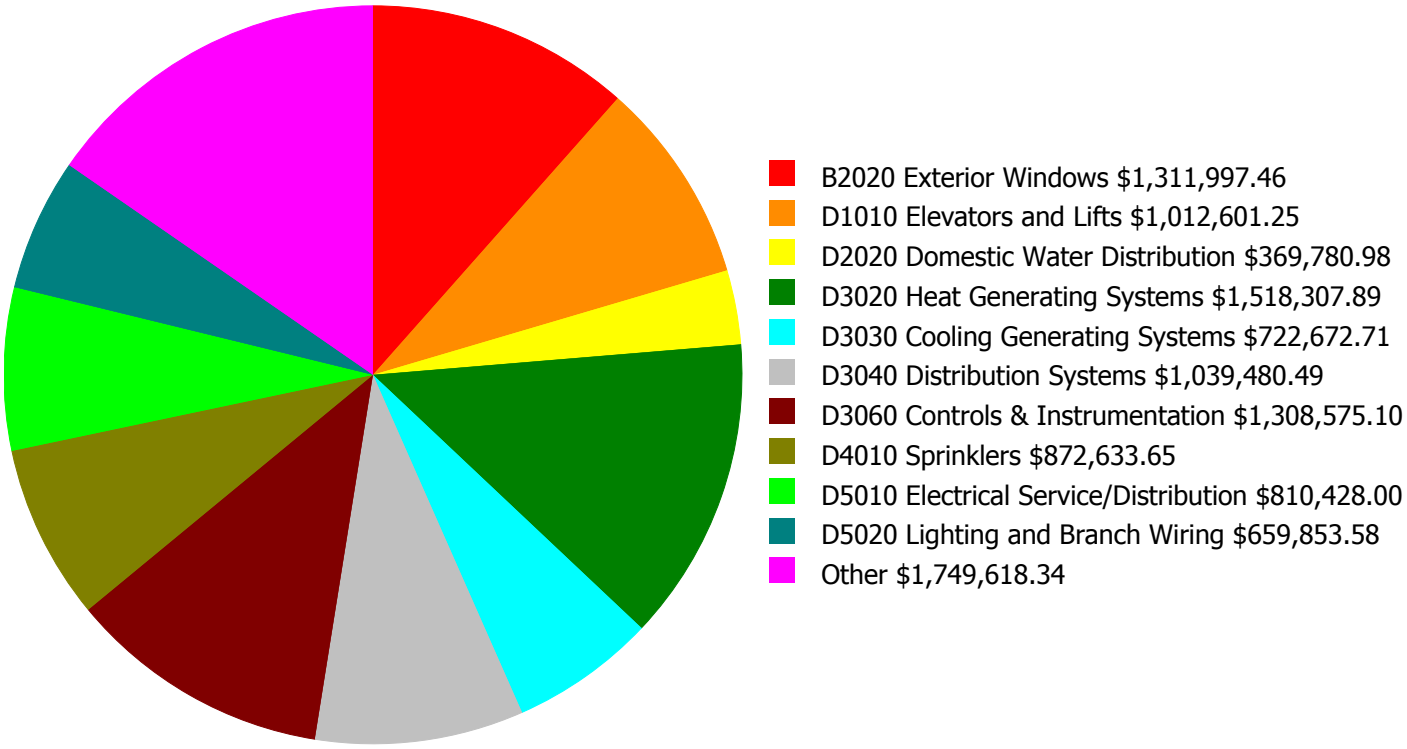
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 37.16%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$630,592.00	35.16 %	$1,261,184.00	33.16 %
2017	$12,847,720	$649,510.00	72.72 %	$1,299,019.00	68.72 %
2018	$0	$668,995.00	70.72 %	$1,337,990.00	64.72 %
2019	$0	$689,065.00	68.72 %	$1,378,129.00	60.72 %
2020	$0	$709,737.00	66.72 %	$1,419,473.00	56.72 %
2021	$2,224,958	$731,029.00	70.81 %	$1,462,057.00	58.81 %
2022	$0	$752,960.00	68.81 %	$1,505,919.00	54.81 %
2023	$612,852	$775,548.00	68.39 %	$1,551,097.00	52.39 %
2024	$0	$798,815.00	66.39 %	$1,597,630.00	48.39 %
2025	$1,336,987	$822,779.00	67.64 %	$1,645,558.00	47.64 %
Total:	**$17,022,516**	**$7,229,030.00**		**$14,458,056.00**	

Deficiency Summary by System

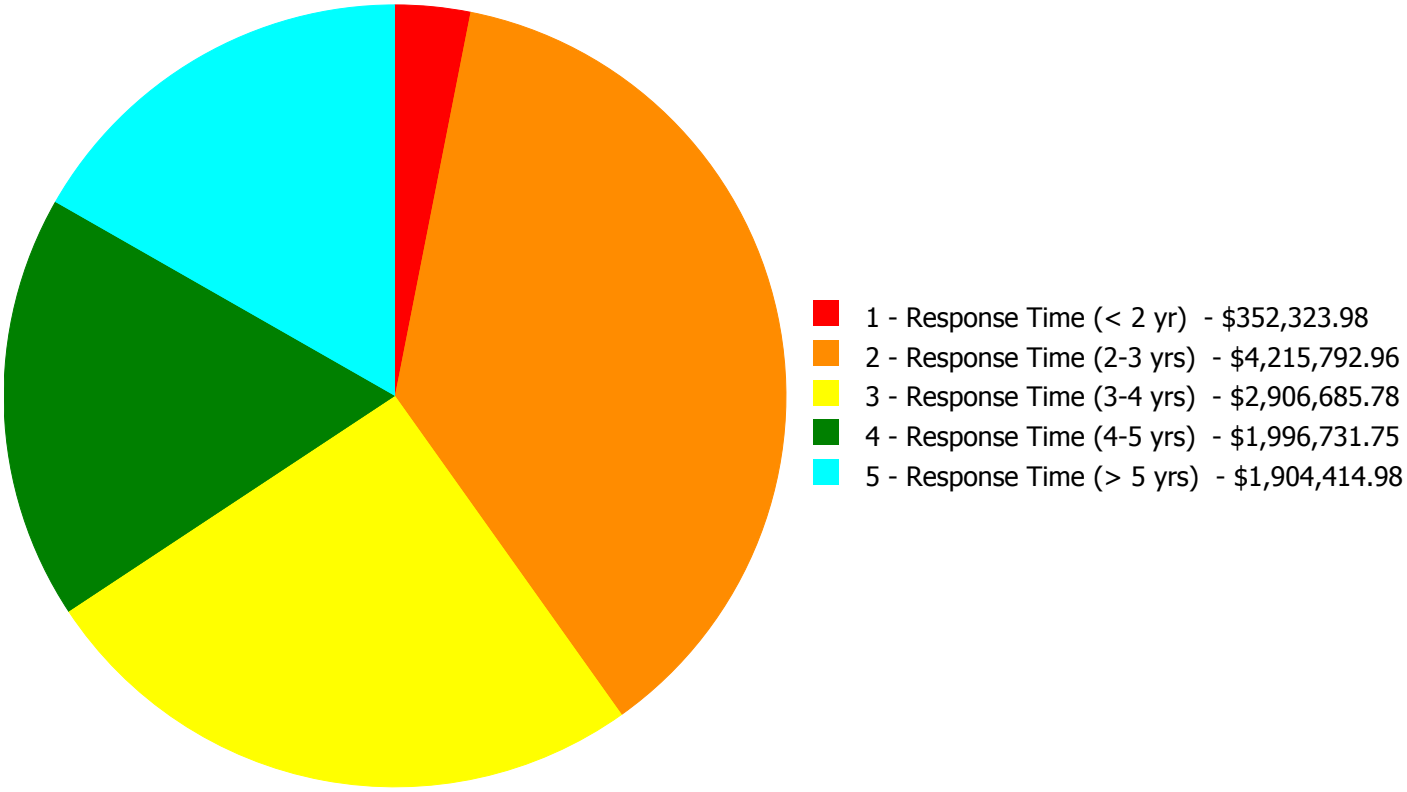
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $11,375,949.45

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: $11,375,949.45

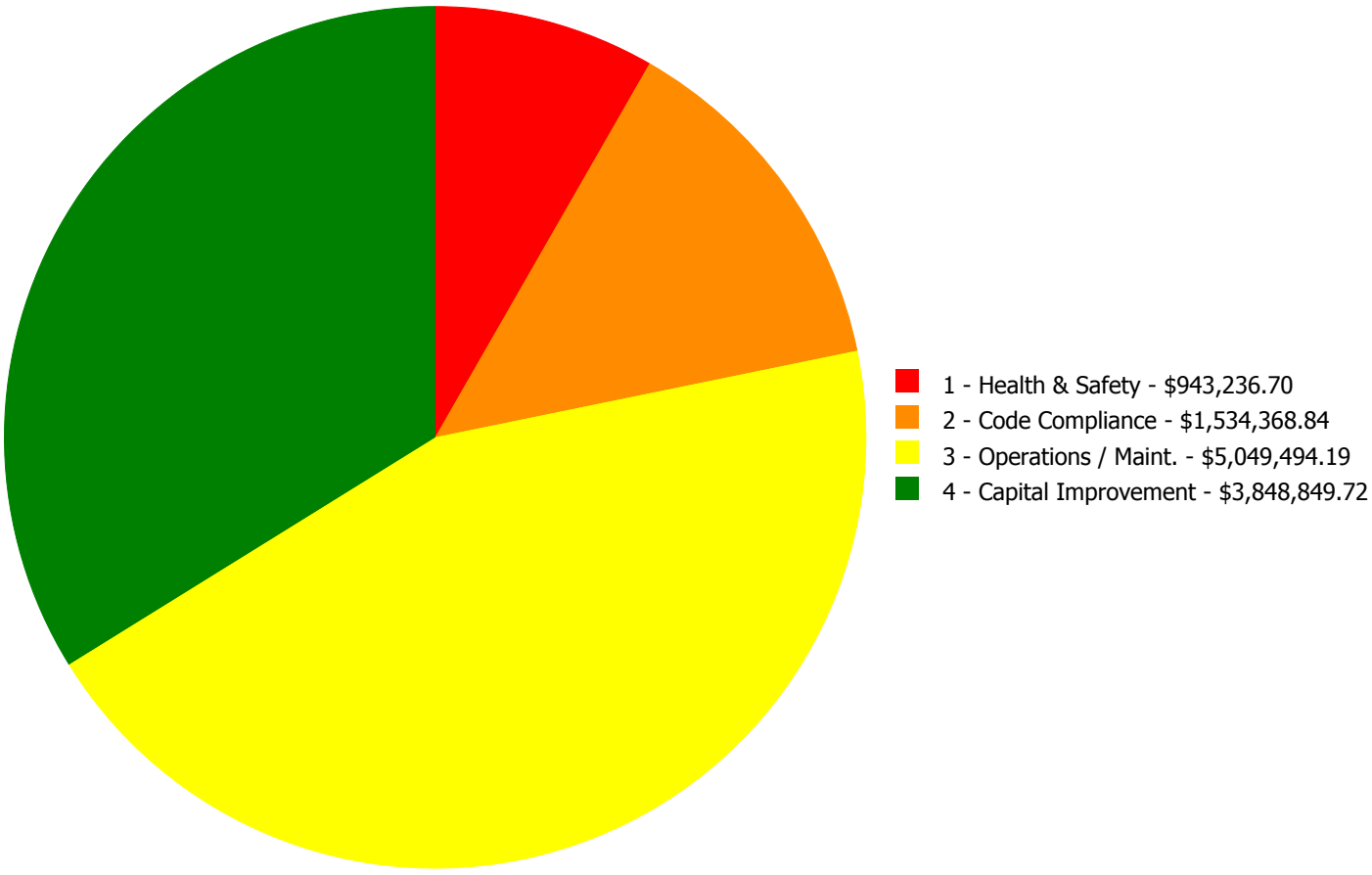
Deficiency By Priority Investment Table

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	$16,144.74	$0.00	$0.00	$0.00	$16,144.74
B2020	Exterior Windows	$0.00	$0.00	$0.00	$1,311,997.46	$0.00	$1,311,997.46
C1020	Interior Doors	$0.00	$27,828.47	$0.00	$0.00	$0.00	$27,828.47
C1030	Fittings	$0.00	$7,822.84	$0.00	$0.00	$0.00	$7,822.84
C3010230	Paint & Covering	$0.00	$0.00	$0.00	$85,670.76	$0.00	$85,670.76
C3020414	Wood Flooring	$0.00	$0.00	$98,517.50	$0.00	$0.00	$98,517.50
C3030	Ceiling Finishes	$0.00	$0.00	$0.00	$276,008.47	$0.00	$276,008.47
D1010	Elevators and Lifts	$0.00	$1,012,601.25	$0.00	$0.00	$0.00	$1,012,601.25
D2010	Plumbing Fixtures	$0.00	$78,464.48	$0.00	$0.00	$0.00	$78,464.48
D2020	Domestic Water Distribution	$9,560.11	$51,112.25	$0.00	$0.00	$309,108.62	$369,780.98
D2030	Sanitary Waste	$0.00	$11,282.80	$299,250.81	$0.00	$0.00	$310,533.61
D2040	Rain Water Drainage	$0.00	$270,500.23	$0.00	$0.00	$0.00	$270,500.23
D3020	Heat Generating Systems	$0.00	$0.00	$1,518,307.89	$0.00	$0.00	$1,518,307.89
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$722,672.71	$722,672.71
D3040	Distribution Systems	$342,763.87	$172,070.42	$524,646.20	$0.00	$0.00	$1,039,480.49
D3060	Controls & Instrumentation	$0.00	$1,308,575.10	$0.00	$0.00	$0.00	$1,308,575.10
D4010	Sprinklers	$0.00	$0.00	$0.00	$0.00	$872,633.65	$872,633.65
D5010	Electrical Service/Distribution	$0.00	$415,067.67	$395,360.33	$0.00	$0.00	$810,428.00
D5020	Lighting and Branch Wiring	$0.00	$659,853.58	$0.00	$0.00	$0.00	$659,853.58
D5030	Communications and Security	$0.00	$162,996.83	$70,603.05	$0.00	$0.00	$233,599.88
D5090	Other Electrical Systems	$0.00	$21,472.30	$0.00	$0.00	$0.00	$21,472.30
E1020	Institutional Equipment	$0.00	$0.00	$0.00	$323,055.06	$0.00	$323,055.06
	Total:	$352,323.98	$4,215,792.96	$2,906,685.78	$1,996,731.75	$1,904,414.98	$11,375,949.45

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: $11,375,949.45

Deficiency Details by Priority

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

Priority 1 - Response Time (< 2 yr):

System: D2020 - Domestic Water Distribution

Location: Boiler room

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 1 - Response Time (< 2 yr)

Correction: Provide expansion tank for water heater.

Qty: 1.00

Unit of Measure: Ea.

Estimate: $9,560.11

Assessor Name: System

Date Created: 10/18/2015

Notes: Add thermal expansion tank to hot water system.

System: D3040 - Distribution Systems

Location: Entire building

Distress: Maintenance Required

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Conduct a steam trap survey and replace failed units.

Qty: 61,000.00

Unit of Measure: S.F.

Estimate: $342,763.87

Assessor Name: System

Date Created: 10/18/2015

Notes: Conduct steam trap survey and replace as needed and replace cast iron radiators with finned tube units due to age and rust.

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

System: B2010 - Exterior Walls

Location: Exterior walls

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 500.00

Unit of Measure: S.F.

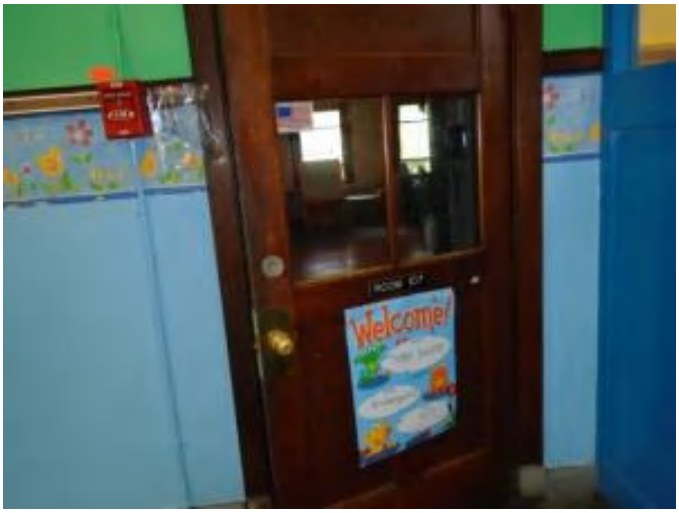
Estimate: $16,144.74

Assessor Name: System

Date Created: 09/16/2015

Notes: Repair and re-point brickwork around roof drain outlets – allowing water intrusion

System: C1020 - Interior Doors



Location: Throughout

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Replace door knobs with compliant lever type

Qty: 50.00

Unit of Measure: Ea.

Estimate: $27,828.47

Assessor Name: System

Date Created: 09/16/2015

Notes: Replace interior door handles with lever type handles and latch sets

System: C1030 - Fittings

Location: Toilets

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Remove and replace damaged toilet paritions - handicap units

Qty: 8.00

Unit of Measure: Ea.

Estimate: $7,822.84

Assessor Name: System

Date Created: 09/16/2015

Notes: Install accessible toilet partitions and accessories

System: D1010 - Elevators and Lifts

Location: TBD

Distress: Accessibility

Category: 2 - Code Compliance

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $1,012,601.25

Assessor Name: System

Date Created: 09/16/2015

Notes: Install elevator for accessibility

System: D2010 - Plumbing Fixtures

Location: Hallways

Distress: Accessibility

Category: 2 - Code Compliance

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

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

Qty: 5.00

Unit of Measure: Ea.

Estimate: $78,464.48

Assessor Name: System

Date Created: 10/18/2015

Notes: Replace drinking fountains with refrigerated, accessible fountains.

System: D2020 - Domestic Water Distribution

Location: Cafeteria dining room closet.

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 2 - Response Time (2-3 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: 10/18/2015

Notes: Install double back flow prevention valves at water entry to comply with codes.

System: D2030 - Sanitary Waste

Location: Boiler room

Distress: Inadequate

Category: 4 - Capital Improvement

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $11,282.80

Assessor Name: System

Date Created: 10/18/2015

Notes: Install second sump pump.

System: D2040 - Rain Water Drainage

Location: Entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Inspect internal rain water drainage piping and replace pipe - based on SF of multi-story building - insert SF of building

Qty: 61,000.00

Unit of Measure: S.F.

Estimate: $270,500.23

Assessor Name: System

Date Created: 10/18/2015

Notes: Replace roof drain piping due to age.

System: D3040 - Distribution Systems

Location: Toilet rooms

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Provide inline centrifugal fan and wall outlet louver for restroom exhaust (4 plbg fixtures)

Qty: 10.00

Unit of Measure: Ea.

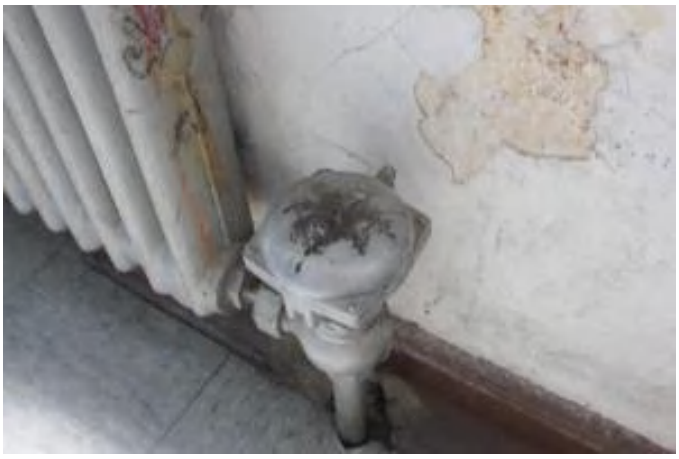
Estimate: $172,070.42

Assessor Name: System

Date Created: 10/18/2015

Notes: Install exhaust fans in toilet rooms (10).

System: D3060 - Controls & Instrumentation



Location: Entire building

Distress: Obsolete

Category: 3 - Operations / Maint.

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

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 61,000.00

Unit of Measure: S.F.

Estimate: $1,308,575.10

Assessor Name: System

Date Created: 10/18/2015

Notes: Upgrade obsolete pneumatic control system to digital.

System: D5010 - Electrical Service/Distribution

Location: Basement

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Replace Switchboard

Qty: 1.00

Unit of Measure: Ea.

Estimate: $415,067.67

Assessor Name: System

Date Created: 10/20/2015

Notes: Provide a new electrical service 480V/277V, 3 phase power, approximate 1000 Amperes and will be located in the vicinity of the existing electrical service.

System: D5020 - Lighting and Branch Wiring

Location: Entire Building

Distress: Energy Efficiency

Category: 4 - Capital Improvement

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

Correction: Replace lighting fixtures

Qty: 726.00

Unit of Measure: Ea.

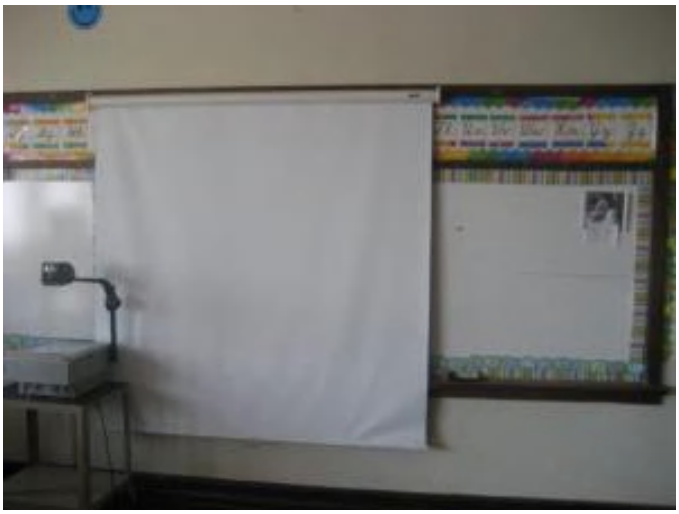
Estimate: $618,708.03

Assessor Name: System

Date Created: 10/20/2015

Notes: Replace 90% of the existing lighting fixtures with up/down, recessed fluorescent fixtures with T8 lamps in classroom/offices and corridors. Approximate 726

System: D5020 - Lighting and Branch Wiring



Location: Classrooms

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add wiring device

Qty: 112.00

Unit of Measure: Ea.

Estimate: $41,145.55

Assessor Name: System

Date Created: 10/20/2015

Notes: Provide (2)25 FT of surface raceways with 24" receptacles on center and two-duplex wall mount receptacles. Approximate 112

System: D5030 - Communications and Security

Location: Entire Building

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Replace fire alarm system

Qty: 1.00

Unit of Measure: S.F.

Estimate: $162,996.83

Assessor Name: System

Date Created: 10/20/2015

Notes: Replace old fire alarm system with addressable type with audio/visual devices at corridors and classrooms. Approximate 82 devices

System: D5090 - Other Electrical Systems

Location: Roof

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Provide Lightning Protection System

Qty: 1.00

Unit of Measure: LS

Estimate: $21,472.30

Assessor Name: System

Date Created: 10/20/2015

Notes: Prepare a study to determine if the existing lightning system provide the proper protection to the school building.

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

System: C3020414 - Wood Flooring

Location: Various

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Refinish wood floors

Qty: 9,150.00

Unit of Measure: S.F.

Estimate: $98,517.50

Assessor Name: System

Date Created: 09/16/2015

Notes: Refinish wood floor – 30% of wood floor area

System: D2030 - Sanitary Waste

Location: Entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 61,000.00

Unit of Measure: S.F.

Estimate: $299,250.81

Assessor Name: System

Date Created: 10/18/2015

Notes: Replace sanitary drain piping due to age.

System: D3020 - Heat Generating Systems

Location: Boiler room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 3.00

Unit of Measure: Ea.

Estimate: $1,518,307.89

Assessor Name: System

Date Created: 10/18/2015

Notes: Replace all three boilers due to age and corrosion.

System: D3040 - Distribution Systems

Location: Fan room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 800.00

Unit of Measure: Seat

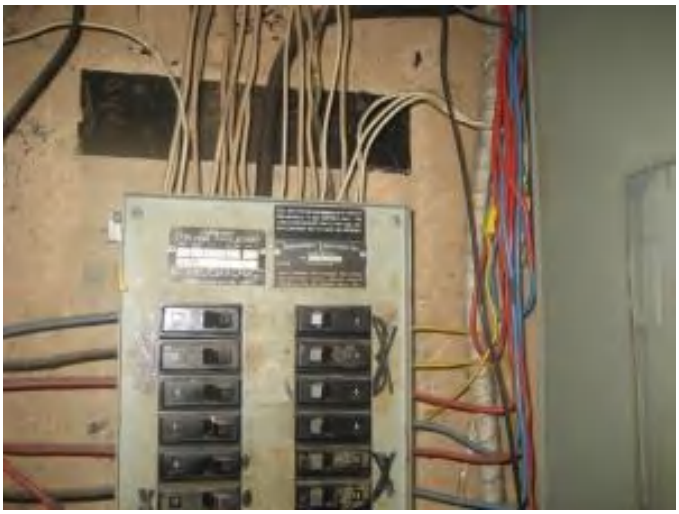
Estimate: $524,646.20

Assessor Name: System

Date Created: 01/21/2016

Notes: Replace obsolete air handler including uninsulated ductwork.

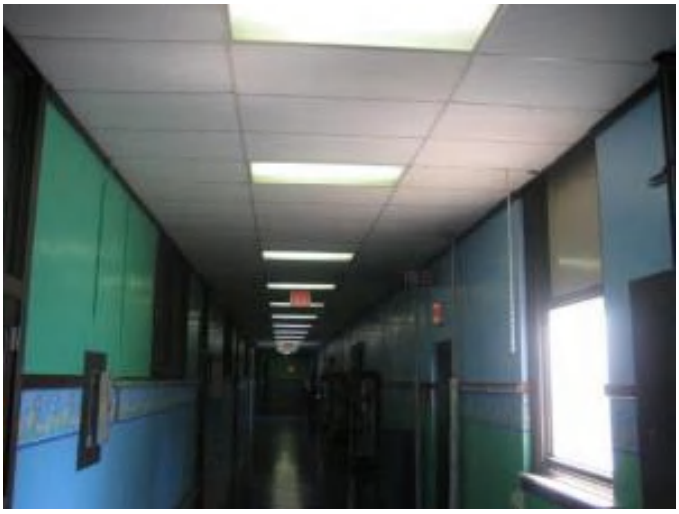
System: D5010 - Electrical Service/Distribution



Location: Entire Building
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace Panelboard
Qty: 16.00
Unit of Measure: Ea.
Estimate: $395,360.33
Assessor Name: System
Date Created: 10/20/2015

Notes: Replace the entire distribution system with new panels and new wiring/conduits. Approximate (16) 208/120V panel boards.

System: D5030 - Communications and Security



Location: Entire Building
Distress: Security Issue
Category: 1 - Health & Safety
Priority: 3 - Response Time (3-4 yrs)
Correction: Add/Replace Video Surveillance System
Qty: 18.00
Unit of Measure: Ea.
Estimate: $70,603.05
Assessor Name: System
Date Created: 10/20/2015

Notes: Add CCTV cameras to provide a full coverage of the building interior. Approximate 18 CCTV cameras

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

System: B2020 - Exterior Windows

Location: Windows

Distress: Energy Efficiency

Category: 4 - Capital Improvement

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

Correction: Remove and replace double slider windows

Qty: 260.00

Unit of Measure: Ea.

Estimate: $1,311,997.46

Assessor Name: System

Date Created: 09/16/2015

Notes: Replace Plexiglas window – hazed

System: C3010230 - Paint & Covering

Location: Throughout

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 10,000.00

Unit of Measure: S.F.

Estimate: $85,670.76

Assessor Name: System

Date Created: 09/16/2015

Notes: Repair and paint interior plaster walls – damaged (10% of plaster area)

System: C3030 - Ceiling Finishes

Location: Various

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 18,300.00

Unit of Measure: S.F.

Estimate: $276,008.47

Assessor Name: System

Date Created: 09/16/2015

Notes: Replace suspended acoustic tile ceiling system – beyond service life (50% of suspended ceiling)

System: E1020 - Institutional Equipment

Location: Auditorium

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add/Replace Stage Theatrical Lighting System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $323,055.06

Assessor Name: System

Date Created: 10/20/2015

Notes: Provide a dimming system and additional theatrical lighting.

Priority 5 - Response Time (> 5 yrs):

System: D2020 - Domestic Water Distribution

Location: Entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace domestic water piping (75 KSF)

Qty: 61,000.00

Unit of Measure: S.F.

Estimate: $309,108.62

Assessor Name: System

Date Created: 10/18/2015

Notes: Replace domestic water distribution piping due to age.

System: D3030 - Cooling Generating Systems

Location: Entire building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 45,000.00

Unit of Measure: S.F.

Estimate: $722,672.71

Assessor Name: System

Date Created: 10/18/2015

Notes: Install 150 ton air-conditioning system to replace inadequate window units.

System: D4010 - Sprinklers

This deficiency has no image.

Location:	Entire building
Distress:	Life Safety / NFPA / PFD
Category:	1 - Health & Safety
Priority:	5 - Response Time (> 5 yrs)
Correction:	Install a fire protection sprinkler system
Qty:	61,000.00
Unit of Measure:	S.F.
Estimate:	$872,633.65
Assessor Name:	System
Date Created:	10/19/2015

Notes: Install fire sprinkler system with fire pump if needed.

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D3020 Heat Generating Systems	Boiler, gas fired, natural or propane, cast iron, steam, gross output, 4720 MBH, includes standard controls and insulated jacket, packaged	3.00	Ea.	Boiler room					35	1981	2016	$103,881.00	$342,807.30
D3040 Distribution Systems	AHU, field fabricated, built up, cool/heat coils, filters, constant volume, 75,000 CFM	1.00	Ea.	Basement					25	1924	2042	$189,333.30	$208,266.63
D5010 Electrical Service/Distribution	Panelboards, 3 pole 3 wire, main lugs, 240 V, 400 amp, no main breaker	1.00	Ea.	Basement					30	1924	2047	$2,297.70	$2,527.47
												Total:	**$553,601.40**

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):	48,100
Year Built:	1924
Last Renovation:	
Replacement Value:	$880,570
Repair Cost:	$262,368.89
Total FCI:	29.80 %
Total RSLI:	56.17 %

Description:

Attributes:

General Attributes:

Bldg ID:	S219001	Site ID:	S219001

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	57.17 %	21.19 %	$142,278.16
G40 - Site Electrical Utilities	52.95 %	57.40 %	$120,090.73
Totals:	**56.17 %**	**29.80 %**	**$262,368.89**

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	$7.65	S.F.	14,500	30	2006	2036		70.00 %	0.00 %	21			$110,925
G2030	Pedestrian Paving	$11.52	S.F.	28,900	40	2000	2040		62.50 %	29.97 %	25		$99,783.95	$332,928
G2040	Site Development	$4.36	S.F.	48,100	25	2000	2025		40.00 %	2.86 %	10		$5,993.20	$209,716
G2050	Landscaping & Irrigation	$3.78	S.F.	4,700	15	1980	1995	2027	80.00 %	205.45 %	12		$36,501.01	$17,766
G4020	Site Lighting	$3.58	S.F.	48,100	30	2000	2030		50.00 %	0.00 %	15			$172,198
G4030	Site Communications & Security	$0.77	S.F.	48,100	30	2005	2035		66.67 %	324.25 %	20		$120,090.73	$37,037
								Total	**56.17 %**	**29.80 %**			**$262,368.89**	**$880,570**

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.

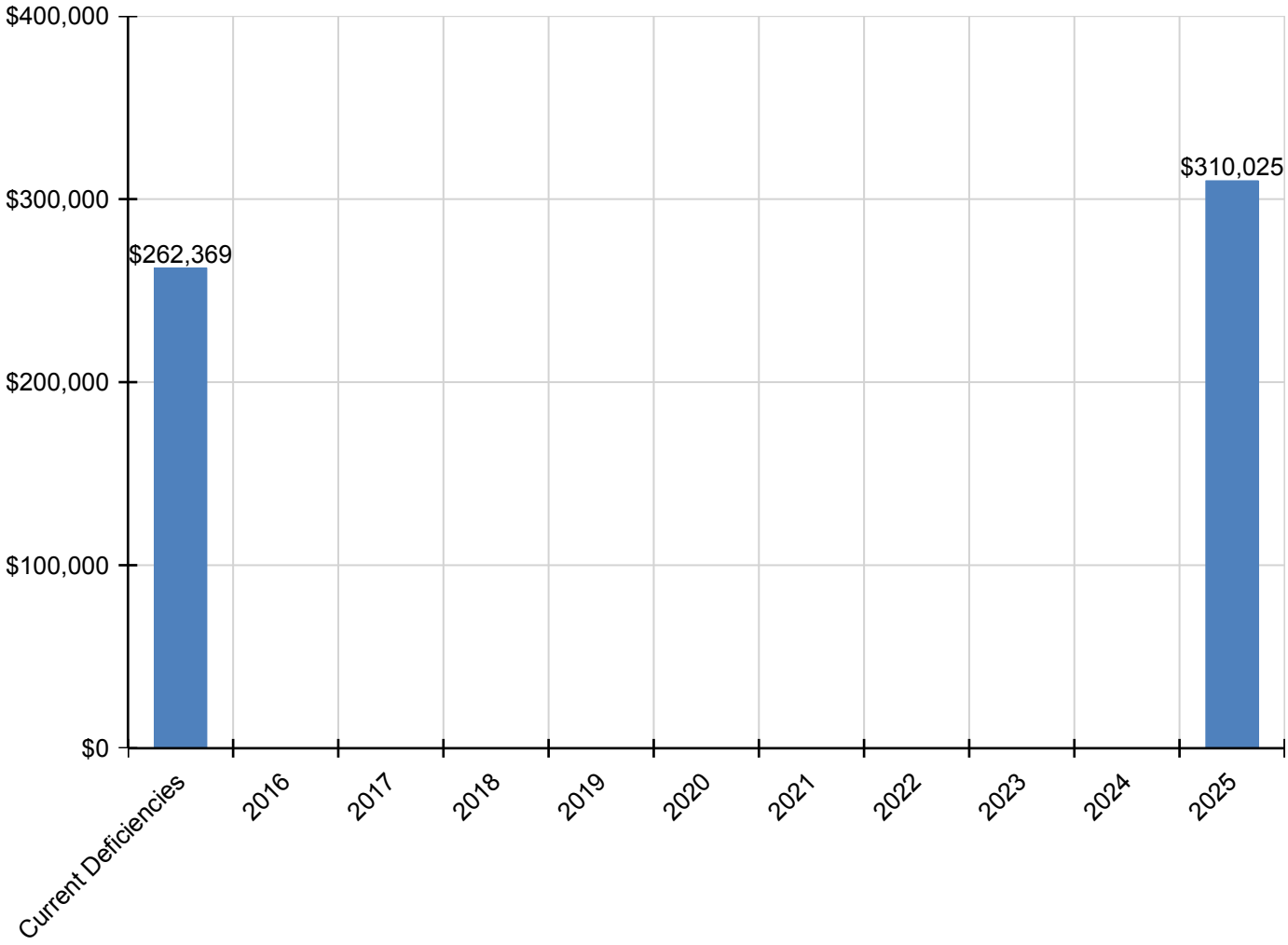
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$262,369**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$310,025**	**$572,394**
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	$99,784	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$99,784**
G2040 - Site Development	$5,993	$0	$0	$0	$0	$0	$0	$0	$0	$0	$310,025	**$316,019**
G2050 - Landscaping & Irrigation	$36,501	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$36,501**
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	$120,091	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$120,091**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

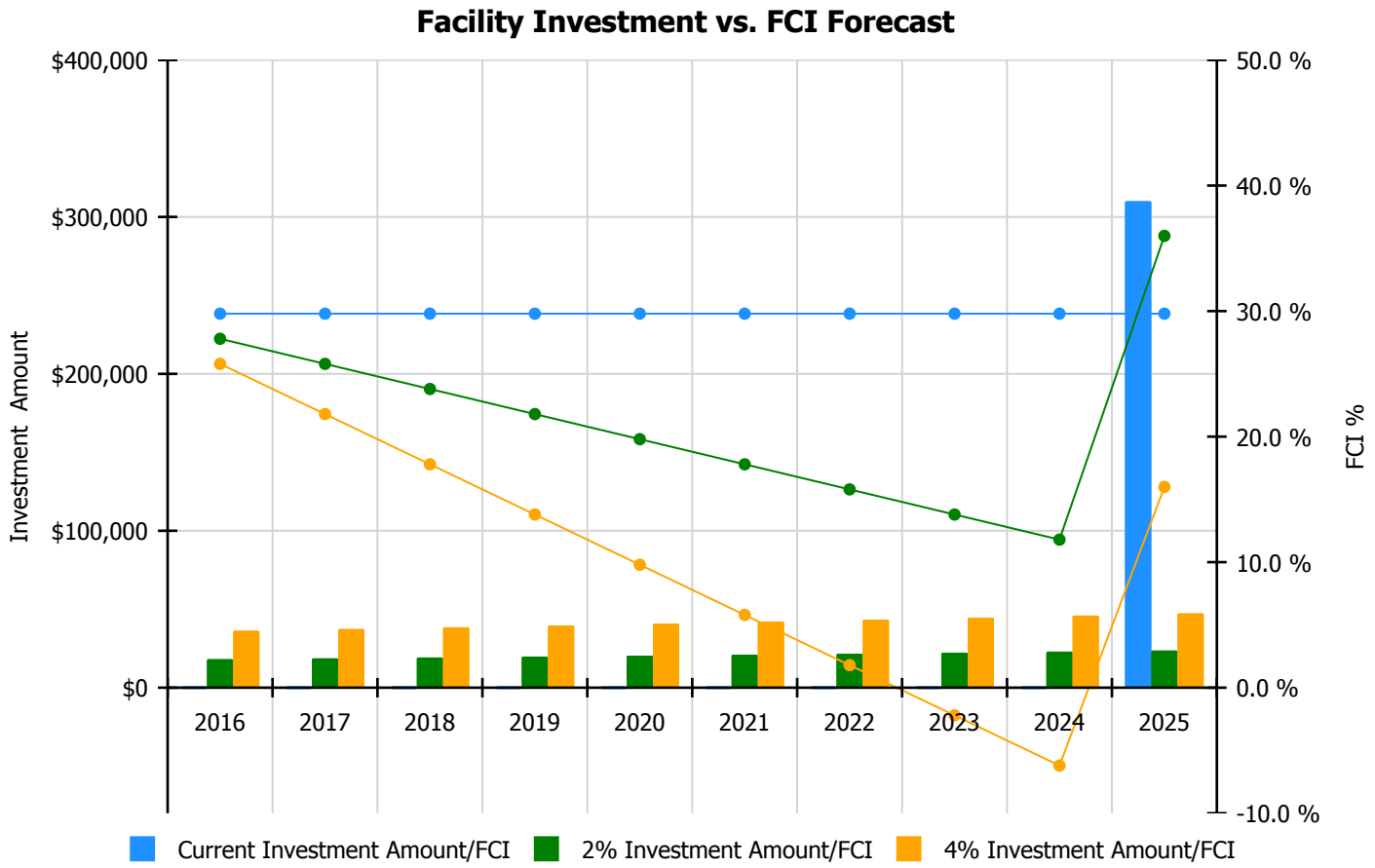
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

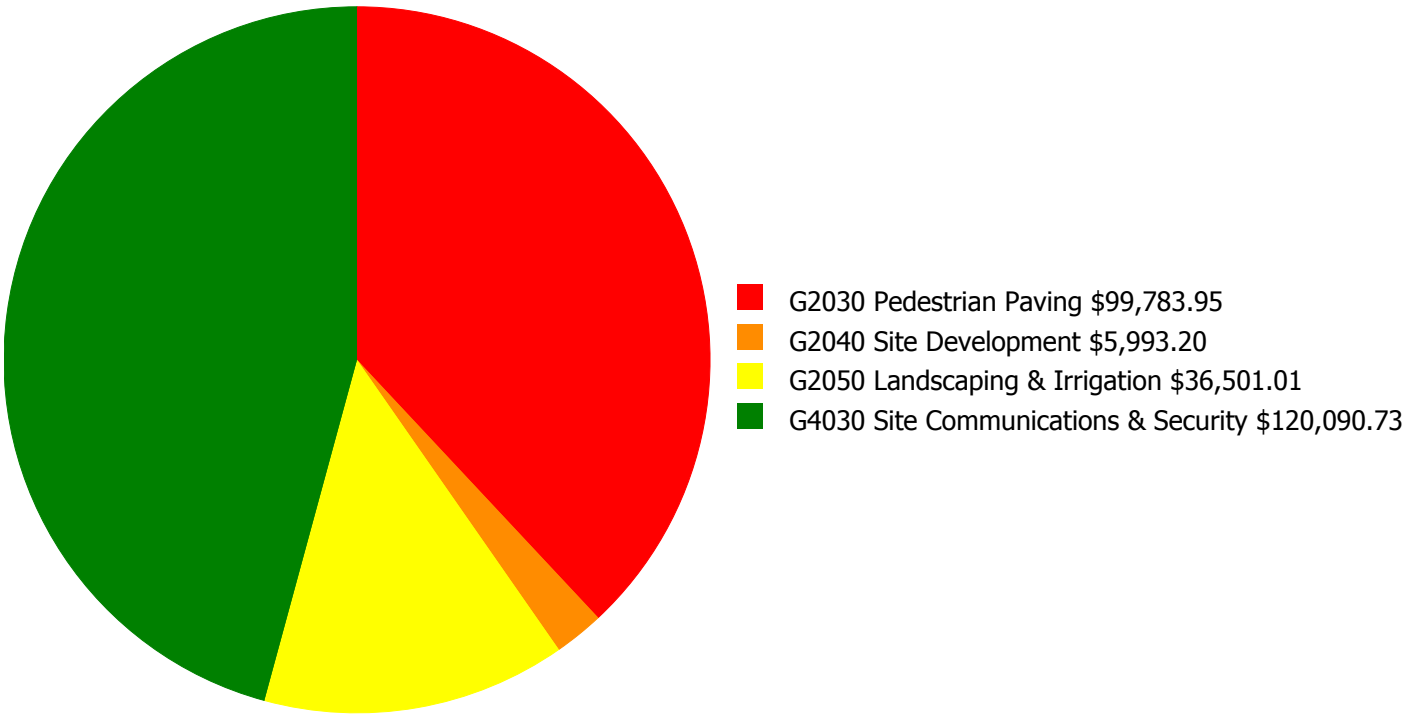
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 29.8%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$18,140.00	27.80 %	$36,279.00	25.80 %
2017	$0	$18,684.00	25.80 %	$37,368.00	21.80 %
2018	$0	$19,244.00	23.80 %	$38,489.00	17.80 %
2019	$0	$19,822.00	21.80 %	$39,644.00	13.80 %
2020	$0	$20,416.00	19.80 %	$40,833.00	9.80 %
2021	$0	$21,029.00	17.80 %	$42,058.00	5.80 %
2022	$0	$21,660.00	15.80 %	$43,320.00	1.80 %
2023	$0	$22,310.00	13.80 %	$44,619.00	-2.20 %
2024	$0	$22,979.00	11.80 %	$45,958.00	-6.20 %
2025	$310,025	$23,668.00	35.99 %	$47,336.00	15.99 %
Total:	**$310,025**	**$207,952.00**		**$415,904.00**	

Deficiency Summary by System

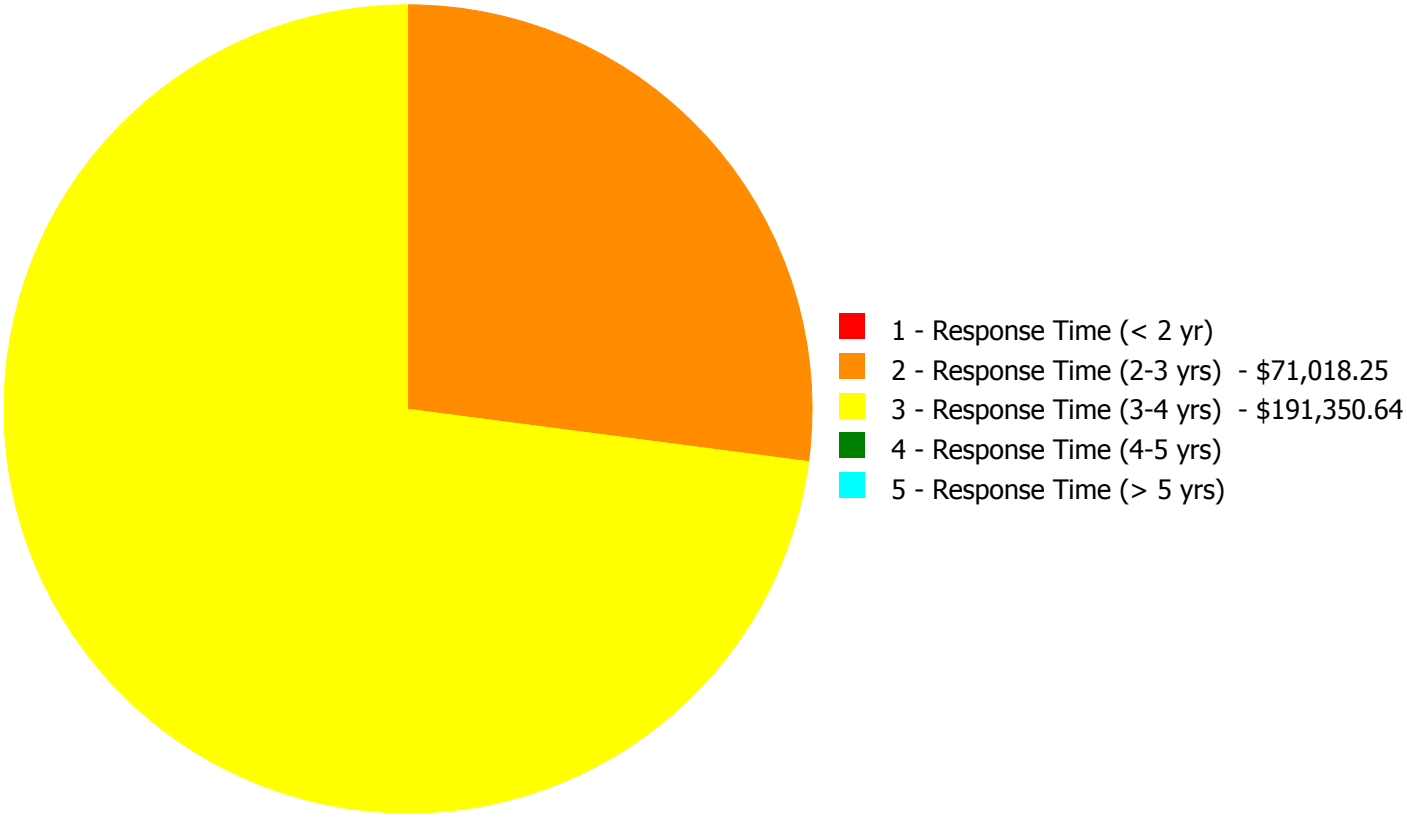
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $262,368.89

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: $262,368.89

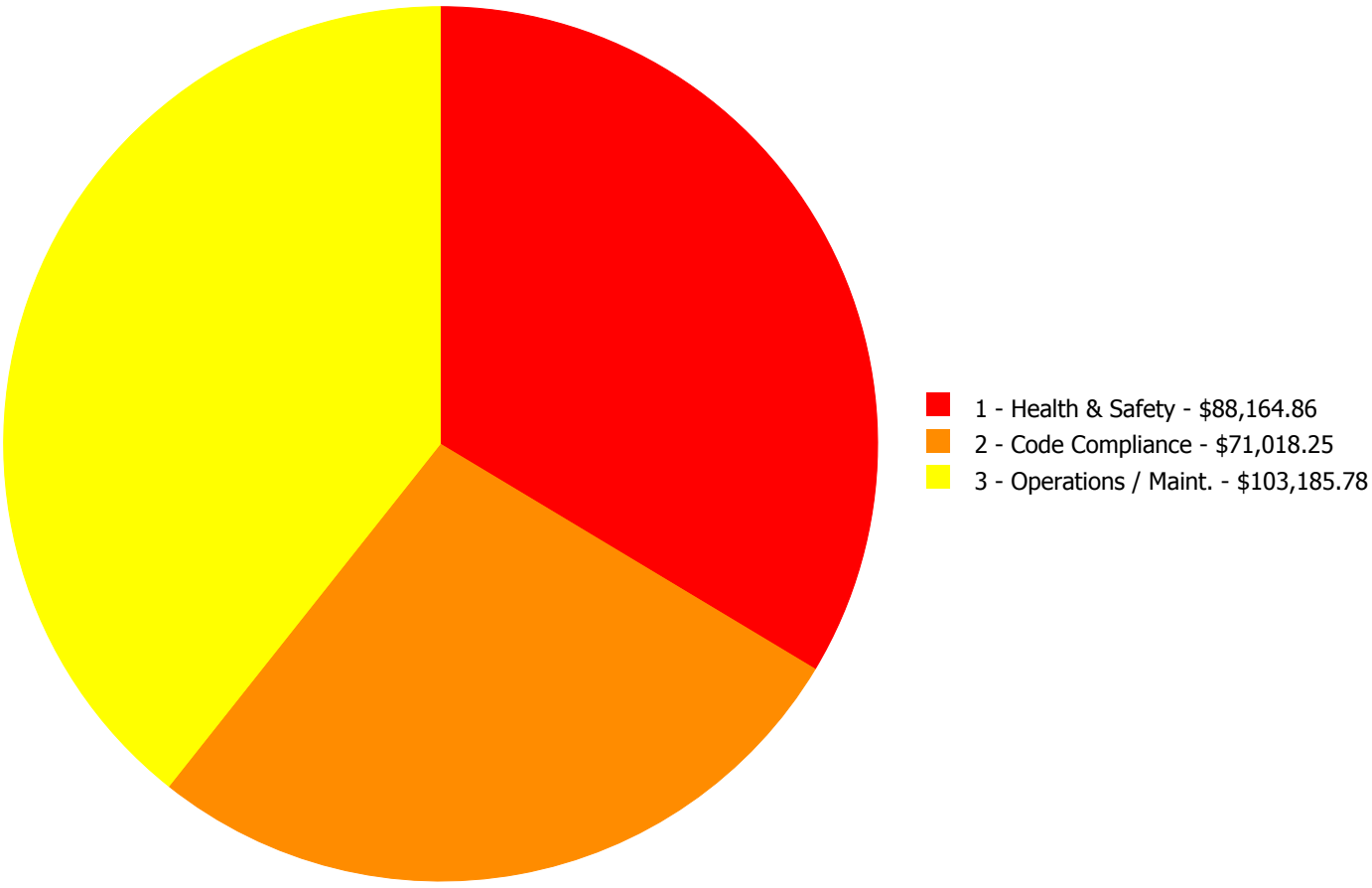
Deficiency By Priority Investment Table

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	$71,018.25	$28,765.70	$0.00	$0.00	$99,783.95
G2040	Site Development	$0.00	$0.00	$5,993.20	$0.00	$0.00	$5,993.20
G2050	Landscaping & Irrigation	$0.00	$0.00	$36,501.01	$0.00	$0.00	$36,501.01
G4030	Site Communications & Security	$0.00	$0.00	$120,090.73	$0.00	$0.00	$120,090.73
	Total:	$0.00	$71,018.25	$191,350.64	$0.00	$0.00	$262,368.89

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: $262,368.89

Deficiency Details by Priority

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

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

System: G2030 - Pedestrian Paving

Location: Auditorium Entrance

Distress: Accessibility

Category: 2 - Code Compliance

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

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

Qty: 30.00

Unit of Measure: L.F.

Estimate: $71,018.25

Assessor Name: Hayden Collins

Date Created: 09/16/2015

Notes: Repair accessible ramp at auditorium entrance

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

System: G2030 - Pedestrian Paving

Location: Thomas Site

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 2,000.00

Unit of Measure: S.F.

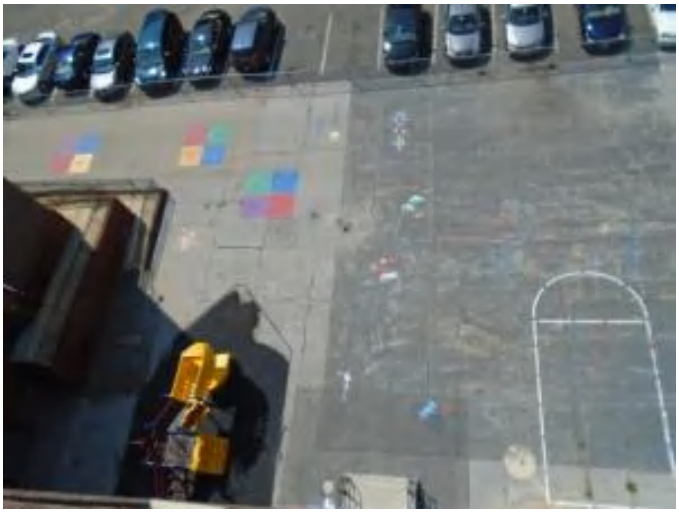
Estimate: $28,765.70

Assessor Name: Hayden Collins

Date Created: 12/28/2015

Notes: The sidewalk system is original to the buildings construction. There are a several areas of cracking concrete but no tripping hazards. The sidewalk system is expected to expire in the near future. Removal of the entire system is recommended. Universal upgrades are required and should include all aspects of current ADA legislation.

System: G2040 - Site Development



Location: Fell Play yard

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Remove and replace chain link gate - 8' high

Qty: 1.00

Unit of Measure: Ea.

Estimate: $5,993.20

Assessor Name: Hayden Collins

Date Created: 09/16/2015

Notes: Install vehicle access gate

System: G2050 - Landscaping & Irrigation

Location: Thomas Site

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace landscape beds - including irrigation - small areas

Qty: 2,000.00

Unit of Measure: S.F.

Estimate: $36,501.01

Assessor Name: Hayden Collins

Date Created: 12/28/2015

Notes: The landscaping is in good condition and well maintained but with no irrigation system. The area near South Hutchinson Street will require upgrading after the recommended basement wall sealing recommendation included in this report. This deficiency provides a budgetary consideration for the installation and care of new landscaping and of an irrigation system for this site.

System: G4030 - Site Communications & Security

Location: Fell- Building Perimeter

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Add Video Surveillance System

Qty: 8.00

Unit of Measure: Ea.

Estimate: $82,171.66

Assessor Name: Hayden Collins

Date Created: 10/20/2015

Notes: Provide 8 CCTV cameras to provide complete coverage of the building exterior.

System: G4030 - Site Communications & Security

Location: Site exterior at Thomas

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace video surveillance camera

Qty: 6.00

Unit of Measure: Ea.

Estimate: $37,919.07

Assessor Name: Hayden Collins

Date Created: 12/15/2015

Notes: Provide an allowance for the replacement of 6 exterior video surveillance cameras.

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