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.

Harrington School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	5300 Baltimore Ave. Philadelphia, Pa 19143	Enrollment Grade Range	492 '00-08'
Phone/Fax	215-471-2914 / 215-471-5087	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Harrington	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	**46.47%**	**$16,011,229**	**$34,454,153**
Building	46.27 %	$15,466,645	$33,424,654
Grounds	52.90 %	$544,584	$1,029,499

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	89.67 %	$887,966	$990,206
Exterior Walls (Shows condition of the structural condition of the exterior facade)	34.02 %	$835,006	$2,454,515
Windows (Shows functionality of exterior windows)	150.52 %	$1,802,775	$1,197,665
Exterior Doors (Shows condition of exterior doors)	07.11 %	$6,854	$96,425
Interior Doors (Classroom doors)	73.81 %	$172,280	$233,415
Interior Walls (Paint and Finishes)	02.17 %	$25,701	$1,181,705
Plumbing Fixtures	17.61 %	$158,356	$899,080
Boilers	63.14 %	$783,903	$1,241,555
Chillers/Cooling Towers	48.83 %	$794,940	$1,627,920
Radiators/Unit Ventilators/HVAC	85.12 %	$2,433,562	$2,858,835
Heating/Cooling Controls	158.90 %	$1,426,567	$897,750
Electrical Service and Distribution	93.15 %	$600,840	$645,050
Lighting	03.39 %	$78,070	$2,306,220
Communications and Security (Cameras, Pa System and Fire Alarm)	21.08 %	$182,095	$863,835

Please note that some FCIs may be over 100% because there are times when replacing a building system requires that other building systems be upgraded to complete the installation. A FCI of 0.0% represents that there are no current deficiencies with the associated system.

Facility Condition Assessment Summary Report

This report provides a summary of the Facility Condition Index (FCI) value of a school facility and select major building systems. The FCI calculation represents the cost of needed repairs divided by the replacement value. The FCI is a numerical value of condition and helps to identify the need for renewal or replacement of specific parts of the facility. The FCI is particularly useful when comparing similar facilities within the same portfolio.

Harrington Annex School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	5300 Baltimore Ave. Philadelphia, Pa 19143	Enrollment Grade Range	'00-08'
Phone/Fax	215-471-2914 / 215-471-5087	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Harrington	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	**45.00%**	**$4,024,127**	**$8,942,655**
Building	45.87 %	$3,863,085	$8,422,299
Grounds	30.95 %	$161,042	$520,356

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	87.22 %	$190,030	$217,880
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.83 %	$3,883	$468,300
Windows (Shows functionality of exterior windows)	192.52 %	$393,599	$204,450
Exterior Doors (Shows condition of exterior doors)	00.00 %	$0	$25,050
Interior Doors (Classroom doors)	250.47 %	$141,263	$56,400
Interior Walls (Paint and Finishes)	06.80 %	$17,134	$252,150
Plumbing Fixtures	51.08 %	$241,954	$473,700
Boilers	72.89 %	$204,124	$280,050
Chillers/Cooling Towers	83.52 %	$306,695	$367,200
Radiators/Unit Ventilators/HVAC	114.58 %	$738,901	$644,850
Heating/Cooling Controls	132.68 %	$268,671	$202,500
Electrical Service and Distribution	151.03 %	$219,746	$145,500
Lighting	33.13 %	$172,368	$520,200
Communications and Security (Cameras, Pa System and Fire Alarm)	50.42 %	$98,253	$194,850

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

S130001;Harrington

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):	66,500
Year Built:	1927
Last Renovation:	
Replacement Value:	$34,454,153
Repair Cost:	$16,011,229.24
Total FCI:	46.47 %
Total RSLI:	72.08 %

Description:

Facility Assessment

December 4, 2015

School District of Philadelphia

Avery D. Harrington Elementary School

5300-34 Baltimore Avenue

Philadelphia, PA 19143

66,500 SF / 616 Students / LN 02

The Harrington School building is located at 5300-34 Baltimore Avenue in Philadelphia, PA. It is a 66,500 sq. ft., 3-story building with a one level basement. The original U-shaped school building was constructed in 1927 with a subsequent addition that filled in the U and expanded the building to the west in 1970. The school building is listed on the National Register of Historic Places. School capacity is

616 students and the current enrollment is 554 serving Grades K-8.

Ms. Mary Digiacomo, School Principal and Mr. Rich Toohey, Facility Area Coordinator provided input on current problems and planned renovation/addition projects. Mr. Clarence King Building Engineer accompanied us on our tour of the school and provided us with detailed information on the building systems and maintenance history.

ARCHITECTURAL/STRUCTURAL

The building bears on concrete foundations and basement walls that are not showing signs of significant settlement or damage. The basement floor is slab on grade. The main structure consists of cast-in-place concrete columns, beams and concrete floor slabs. The roof structure consists of concrete slab supported by the main structural frame. Leaks have developed through the deck and at the manholes and vents at the plaza deck over a portion of the boiler room and an un-used coal/ash room on the east side of the building. Moisture appears to be saturating the beams leading to corrosion of the metal reinforcing bars. The bars swell and fracture the concrete encasement compromising the integrity structural of the beams.

The building envelope is brick masonry. Elevations are enhanced with decorative stonework around entrances and stone window surrounds and cornices. Brick at the basement level and portions of the 1st floor is painted, presumably to mask graffiti. In general, masonry is in fair condition with evidence of repairs/ maintenance reported to be performed recently at stair towers and the stack. Additional repairs are badly needed including pointing of failing masonry joints.

The original wood windows and frames installed in 1927 were replaced in the early 1980's with colored extruded aluminum single hung windows single glazed with acrylic panes with insect screens. Typically the upper pane is fitted with opaque material. All windows are generally in fair condition. Much of the glazing has hazed with age. First floor windows are fitted with security grilles. Exterior doors are typically hollow metal with glazing, in fair condition.

The roof is covered with a membrane of modified bituminous roll roofing built-up with bonded seams installed in approximately 1995. Scuppers handle overflow from failed roof drains. The roof is in poor condition with failing seams and flashings. Several leaks were reported by the maintenance staff and evidence of roof leaks was observed through damaged interior finishes. Skylights over the light shaft above the basement stairwell are also damaged and should be replaced. To reach the high roof of the original building, the maintenance staff climbs a fixed interior metal ladder to the attic level mechanical space and then goes through an access door opening at the roof level. A permanent door should be installed to provide access to the low roof, which is currently through a window from the 2nd floor.

Partition walls in the original building are typically plastered ceramic hollow blocks; CMU in the addition. Some classrooms have moveable wall panels that are inoperable. Interior classroom and office doors in the older section are generally the original paneled wood in wood frames with glazed lites, transom openings and knob operators. Classroom doors are not recessed and swing into the exit corridors. In the addition, doors are solid-core wood with hollow metal frames.

Fittings include: toilet accessories in poor condition; plastic toilet partitions in student facilities in the original building are generally in fair condition; metal toilet partitions in student facilities in the addition are generally in poor condition; interior identifying signage is typically directly painted on wall or door surfaces and is inadequate. Shelving should be provided in the storage room at the NE corner of the 1st Floor to eliminate clutter and improve safety.

Stair construction is generally concrete with cast iron non-slip treads in fair condition. Handrails are galvanized steel at the exit stair towers and wood at the main stair towers. Handrails do not meet modern codes for configuration with improper cross-section at wood rails, no extensions at landings, and improper mounting height. Barrier rails at landings and stairs are too low.

Generally, the building is not accessible per ADA requirements. No ramps or lifts are provided at building entries. The building has a passenger / service elevator with access to all floors. A single (unisex) accessible restroom for staff and accessible restrooms for boys and girls should be provided on the 1st Floor.

The interior walls are painted finish and generally in good condition. However, the inside plaster surfaces of the exterior walls are damaged by water infiltration at the window heads and bases along the north and east on 1st and 2nd floors and paint is peeling in the offices. The auditorium has wood paneling on a portion of the walls. Corridor walls have marble wainscot in the original building. The restrooms have ceramic tile floors. Flooring in classrooms and the auditorium/stage is hardwood in well maintained condition for their age. The wood floor should be replaced in Classroom 208 to repair a damaged section. The main office, multi-purpose gym/lunchroom, kitchen, science lab and faculty dining have VCT tile, generally in good condition. The floors in the corridors of the original building are scored and polished colored concrete with coved base. The basement classrooms and corridors on both levels of

the addition have VAT floors along with the auditorium and kindergarten classroom. The floor of the IMC is covered with carpet tile. Service areas have sealed concrete floors.

Classroom, corridor and office ceilings in the addition and several rooms in the original building are 2x4 suspended acoustical panels in fair condition. Some water damaged tiles were observed. The suspension system is typically yellowed. The auditorium has glued on acoustical tile in generally good condition. The ceilings of the multi-purpose gym/lunchroom are painted exposed concrete structure. Services areas also have exposed painted structure.

Institutional and Commercial equipment includes: stage light bar; antique auditorium sound system; stage draperies in deteriorating condition; Smartboards/Promethean boards; basketball backstops are wall mounted in fair condition. Kitchen equipment is generally in fair condition. The Auditorium is equipped with a full size projection screen.

Furnishings include: fixed casework in classrooms, corridors and library, generally in fair to poor condition; window shades, generally in good condition; window drapes at the auditorium have failed track hardware; fixed auditorium seating is original wood with metal frame, generally in fair condition with some damaged/vandalized seats.

MECHANICAL

Toilet room plumbing fixtures are mostly replacement equipment including low flow fixtures. Fixtures in the restrooms on each floor consist of wall hung water closets, urinals, and lavatories. Lavatories have separate hot and cold spouts with momentary action valves. Multiple fixtures are out of order and many are stained. The district should budget to replace 15% of toilet room fixtures. The science classroom has 3 laboratory sinks in fair condition, and other classrooms in the addition have lavatories as well. Service sinks located in cleaning closets are wall mounted cast iron with integral backsplash and vacuum breaker spout. Faucets flow well and get hot quickly, but sinks are heavily stained and should be replaced. Drinking fountains in the corridors are a mixture of styles and ages. Some are new accessible chilled fountains, but about half are older floor standing nonaccessible units. They are beyond their service life, and in total half the fountains should be replaced.

A 3" city water service enters the building from Thomas Ave. The 3" meter and valves are located in the basement mechanical room. There is no backflow preventer for the entire building and one should be installed. The original domestic water pressure booster has been inoperative for 20 years but is still connected to the plumbing. The booster should be removed when the backflow preventer is installed. There is a backflow preventer and water meter for boiler makeup water. The domestic hot and cold water distribution piping is copper piping and soldered connections. Portions of domestic pipe show severe corrosion, and the entire system should be inspected and repaired or replaced as needed. The water heater is a State Industries natural gas burning 70 gallon tank type manufactured in 2000 located in the boiler room. It is beyond its useful life and should be replaced. There is a circulation pump but no thermal expansion tank and one should be installed with the new heater.

The sanitary sewer piping is threaded galvanized steel and cast iron pipe. The galvanized pipe dates the system to the 1960s, and it should be inspected in detail and repaired or replaced as needed. The building does not have a sewage ejector.

Rain water drain pipes are threaded galvanized steel and run inside pipe chases in the building. The roof does not have overflow drains. There was no noticeable evidence of internal rain water leak damage. Rain water drain pipes are unknown age, but should run well for 10 more years. There are no ground water sumps in the building.

The building was originally heated and ventilated by a large basement air handler with supplemental radiators. The auditorium addition has a dedicated air handler for heating and cooling, and the added classrooms at the back of the building have unit ventilators for heat and vent. The building could be considered for complete conversion to hot water from steam.

Steam is generated by two Weil-McLain model BG-1994SF cast iron sectional boilers with 4,060 MBH (121 HP) net capacity installed in 1969. Each boiler is equipped with a Gordon Piatt model WFE12-0-50 burner operating on natural gas only. Gas service enters the building from Baltimore Ave. through a 4 inch line without a booster. The building does not have an oil storage tank. The boilers have exceeded their life expectancy by 12 years and should be scheduled for replacement due to age. The condensate collection tank is below the main level of the basement floor at the end of the condensate trough and has two transfer pumps. Two boiler feedwater pumps draw from a sump in the floor of the boiler room. There is only one feedwater supply pipe. The condensate and feedwater system should be replaced when new boilers are installed. A water softener is installed for the makeup water in boiler room near the feedwater sump. The engineer stated he softener was inoperative. No problems were reported with steam traps, and there was no evidence of moisture damage at the condensate collection tank. Steam and condensate piping is black steel with welded and threaded fittings. Visible portions of the condensate pipes are severely rusted and some sections of pipe have rusted completely in two. The engineer stated there were no problems with steam pipes. Condensate pipes should be inspected in detail and repaired or replaced as needed.

The building has no central cooling generating equipment. A McQuay roof top condensing unit manufactured in 1969 with estimated 20 ton capacity provides cooling for the auditorium. A 165 ton chiller system should be installed for the entire building including circulation pumps and distribution piping serving the air handlers and unit vents.

Original classrooms were heated and ventilated by the basement air handler. It includes an intake section with fresh outdoor air inlet and recirculation from the attic plenum, cast iron primary and secondary steam coils, air washer, and fan. The attic is labeled as containing asbestos. The AHU is not operated currently. Capacity is estimated 55,000 CFM. It should be replaced by a 100% outside air unit including cooling coils and have connected supply ducts cleaned and insulated. Classroom exhaust air was ducted up to the attic plenum and out through gravity vents in the roof. Some exhaust ducts are still open in the attic but there is no air flow because the AHU blower is not used. The auditorium has a dedicated McQuay model LS-111V, single fan, estimated 5,500 CFM capacity, vertical air handler manufactured in 1969 (along with the outside condensing unit). Air supply is ducted to the back of the auditorium and return grills are located below the stage. The fan wheel was recently replaced according to the building engineer. The classrooms at the back of the building have unit ventilators for heating and ventilation. They have had their outside air intake grilles blocked to prevent outside air infiltration because their damper controls do not work and the heating coils are not powerful enough to warm 100% outside air during the winter. Even if controls worked properly, these units have exceeded their useful life and should be replaced. Toilet rooms originally exhausted via building pressurization into dedicated ducts leading to gravity vents on the roof. These have been supplemented by powered roof top exhaust fans. Several exhaust fans were not running at the time of inspection and should be repaired or replaced. The cafeteria kitchen has no gas burning equipment, no fume hood, and no fire suppression system.

Cast iron radiators exist throughout the original part of the building, but in some locations they have been replaced with finned tube convection units. Cast iron units are missing grilles and many are rusty. They should be replaced with finned tube convection units.

Classrooms have wall mounted Honeywell pneumatic thermostats. Radiators have manual adjust thermostatic steam flow control valves. Some are broken and missing their control knobs. Some radiators still have Honeywell pneumatic control steam valves, or even just manually adjusted angle globe valves. Ducts have manually adjusted dampers for supply balancing in the basement ducts and for room exhaust in the attic controlled by pull chains in the ducts to the rooms. A new building automation system (BAS) with modern DDC modules and communications network should be installed to serve the HVAC systems in this building to improve reliability and energy efficiency. A duplex air pump was installed in the basement mechanical room beside the original air handler in 1996 including a refrigerated filter dryer, 80 gallon tank, and new motors.

The school building has dry standpipes but does not have sprinklers. Multiple standpipes are located in fire tower stairwells and include rooftop connections. Standpipes are threaded steel pipe and likely date to circa 1970 when the addition was built. They are in fair condition and should be serviceable for at least 10 more years with routine inspections. A fire protection sprinkler system should be installed to increase occupant safety. A fire pump may be required depending on the available city water pressure.

ELECTRICAL SYSTEMS

A KINNEY ELECTRIC MFG, 120/208V, 1200A switchgear serves this facility. The switchgear is fusible type and is located in the basement with utility meter PECO 02017000564. During the assessment we were not able to determine the location of utility transformer vault. The switchgear is original installation and already exceeded its 30 years of useful service life and has no extra capacity for expansion or new Heating, Ventilation, Air Conditioning (HVAC) system. The switchgear needs to be upgraded. The new switchgear will be 277/480V, 3 phase power, 1000A. The new switchgear would feed a 480V Motor Control Center (MCC) and HVAC (Heating, Ventilation and Air Conditioning) equipment, and a 480V 3 phase to 120/208V 3 phase, 300KVA step-down transformer to feed receptacles, lighting and other smaller loads.

The electrical distribution is accomplished with a combination of original and new 120/208V panelboards in each floor for lighting and receptacles. The original panelboards are mainly dedicated to serve lighting and original receptacles. The original panel-boards and associated wiring have exceeded the end of their useful life and need to be replaced.

Within the last 5 years each classroom has been provided with one receptacle outlet for the projector or smart board. Receptacle outlet is ceiling mounted or wall mounted 24” below ceiling. The school district standard is to provide two receptacle outlets per wall. Therefore additional outlets are required per classroom to satisfy school district requirement.

Most of the classrooms are illuminated with pendant mounted wraparound fluorescent fixtures, the corridors are illuminated with a combination of surface and recessed mounted fluorescent fixtures, the library is illuminated with 2’x4’ recessed fluorescent fixtures, the auditorium is illuminated with recessed downlight fixtures with compact fluorescent lamps, the multipurpose room is illuminated with 2’ square, surface mounted fluorescent fixture, the mechanical/electrical rooms are illuminated with industrial fluorescent fixtures. Lighting fixtures have been retrofitted with T-8 ballast and lamps.

The Fire Alarm system is manufactured by GE Edwards System Technology EST -2. The fire alarm system is composed of pull station at each exit door, audio/visual devices at the corridors, classrooms and public areas. The fire alarm system is approximately 5 years old and is expected to provide 10 more years of useful service life.

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

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

The present clocks and control panel are manufactured by Simplex. Clock system is old and difficult to find parts and repair. Replace clock system with wireless, synchronized battery operated system.

There is not television system.

The security system consists of one surveillance CCTV camera at the basement. Provide additional surveillance CCTV cameras for a complete coverage of the interior of the school.

The emergency power system consists of a gas powered generator, manufactured by Kohler, rated 15KW, 120/208V. The present emergency power system is not connected to the transfer switch and the emergency panel. System is inoperative. Provide an outdoor, diesel powered generator

There is adequate UPS in the IT room.

Since the emergency system is inoperative the school does not have emergency lighting. Provide the school exit ways with wall mounted emergency lighting fixtures with battery backup. Replace existing exit signs with exit signs with battery backup.

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

The school is provided with one hydraulic elevator manufactured by HIGEN with 25HP motor. Elevator controller is the relay type. The elevator should be replaced as it looks as though it has already exceeded its anticipated service life.

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

The auditorium is provided with two sound systems, one system is permanent installed, manufactured by Dukane and the other is a portable system by Sony. Per Building Engineer both system are working properly. The Dukane system appears that has reached its useful service life, therefore provide a permanent installed, modern sound system.

The school perimeter is illuminated with wall mounted fixtures providing total perimeter coverage.

The school building perimeter is provided with 3 outdoor surveillance CCTV cameras. To provide full coverage of the school building perimeter additional surveillance CCTV cameras are required.

The school is provided with one outdoor loud speaker facing the playground area. There was no indication that additional loud speakers are required.

GROUNDS SYSTEMS

Faculty/staff parking is not available on the elementary school site. A concrete paver area at the main entrance with a gate from South 53rd Street is used for parking. Large asphalt play areas are provided on the west (lower) and south (upper). Asphalt is in fair to poor condition with significant cracking present. Pedestrian paving is concrete, in serviceable condition with many mismatched replacement areas. Pedestrian stairs and entrance stoops are granite in need of repair. The monumental stairs on the path to the lower playground have no handrails, are damaged and should be repaired. There are no accessible entrances on the grounds.

Metal picket fence surrounds the site is in good condition, but the chain link fence atop the retaining wall and along the route to the

lower playground is damaged and in poor condition. Double wide gates are installed to access the lower play area at the northwest and main entry. The retaining walls that occur along the path to the lower play area are damaged and in poor condition. Site features include basketball backboards, bicycle racks and a flagpole. Site signage is inadequate.

Landscaping consists of two trees located in a raise planter area to the south of the building. Street trees are located in the sidewalk east and north of the building. No lawn space is provided.

RECOMMENDATIONS:

ARCHITECTURAL

- Repair leaks through the plaza deck over a portion of the boiler room and the un-used coal/ash room on the east side of the building.
- Make repairs necessary to restore the structural integrity of the concrete beams compromised by corrosion of the metal reinforcing bars at the plaza deck over a portion of the boiler room and the un-used coal/ash room on the east side of the building.
- Repair failing mortar joints in the masonry exterior walls
- Replace failing roofing system including insulation, flashing, counter flashing, reglets and coping
- Replace the two damaged skylights over the light shaft above the basement stairwell.
- Replace single pane exterior windows
- Modify the student restrooms on the 1st Floor to provide full accessibility including new toilet partitions, toilet accessories and grab bars.
- Provide a single (unisex) accessible restroom for staff on the 1st Floor.
- Replace interior classroom doors and provide recess to minimize swing into corridor.
- Provide adequate interior directional signage
- Repair and paint the inside plaster surfaces of the exterior walls damaged by water infiltration at the window heads and bases along the north and east on 1st and 2nd floors.
- Remove the VAT floors in the basement classrooms and corridors on both levels of the addition, the auditorium and kindergarten classroom.
- Replace damaged acoustical ceiling panels occurring throughout the building. Clean or paint existing grid.
- Replace the wood floor in Classroom 208 to repair damaged section.
- Provide a second code required exit for the boiler room and main electrical room on the basement level.
- Install a new access door in the corridor of the 2nd Floor for access to the low roof.
- Replace auditorium seating
- Install new drapery hardware at auditorium
- Replace the damaged wood and metal toilet partitions in student facilities.
- Provide shelving in storage room 106 at the NE corner of the 1st Floor to eliminate clutter and improve safety.

MECHANICAL

- Replace 15% of water closets due to age, 6
- Replace 15% of urinals due to age, 3
- Replace 20% of lavatories due to stains and age, 8
- Replace service sinks due to age, 5
- Replace 50% of drinking fountains in the corridors with accessible type, 5
- Install 3 inch back flow preventer at water entry
- Inspect and repair domestic water distribution pipe
- Replace 70 gallon domestic water heater including new expansion tank
- Inspect and repair sanitary drain pipe, 66,500 s.f.
- Replace boilers due to age
- Replace condensate collection tank, boiler feed water sump, and water softener including pumps
- Inspect and repair condensate pipe
- Install a 165 ton air-conditioning system for the entire building, 49,500 s.f.
- Replace AHU for original building including duct restoration and replacement
- Replace air handler for auditorium, 5,500 cfm
- Replace unit vents due to age and lack of cooling coils, 8
- Replace inoperative rooftop vent fans for toilet exhaust, 5 ea
- Replace radiators and finned tube convection units, 700 l.f.
- Convert HVAC controls to digital

- Install a fire protection sprinkler system, including fire pump if needed

ELECTRICAL

- Provide a new service entrance switchgear 277/480V, 3 phase power, 1000 Amperes and 300KVA stepdown transformer.
- Replace existing original panelboards with new panels and new wiring/conduits. Approximate (8) 208/120V panel boards.
- Provide one double-duplex receptacle per classroom wall. Approximate 120 receptacles.
- Replace clock system with wireless, synchronized, battery operated, clock system. Approximate 50 clocks.
- Provide indoor surveillance CCTV cameras for total coverage of the school interior. Approximate 30 CCTV cameras.
- Provide 70KW, outdoor, diesel powered generator.
- Provide wall mounted emergency lighting fixtures with battery backup. Approximate 30
- Replace existing exit signs with exit signs with battery backup. Approximate 20
- Prepare a study to determine if the air terminals mounted on the school chimney provide the proper protection to the school building.
- Provide new hydraulic elevator motor and controller.
- Provide new theatrical lighting and dimming control system.
- Provide the auditorium with a permanent installed, modern sound system.
- Provide outdoor surveillance CCTV cameras to the building perimeter. Approximate 4 CCTV cameras.

GROUNDS

- Repair granite steps on the site
- Replace damaged concrete steps on the site
- Provide an accessible entrance on the north side of the building along Baltimore Avenue near the elevator.
- Mill and overlay the asphalt surfaces of the upper and lower playground areas.
- Replace the damaged chain link fence atop the retaining wall and along the route to the lower playground.
- Repair damaged retaining walls
- Provide site directional signage

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 3
Status:	Accepted by SDP	Team:	Tm 3
Site ID:	S130001		

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.

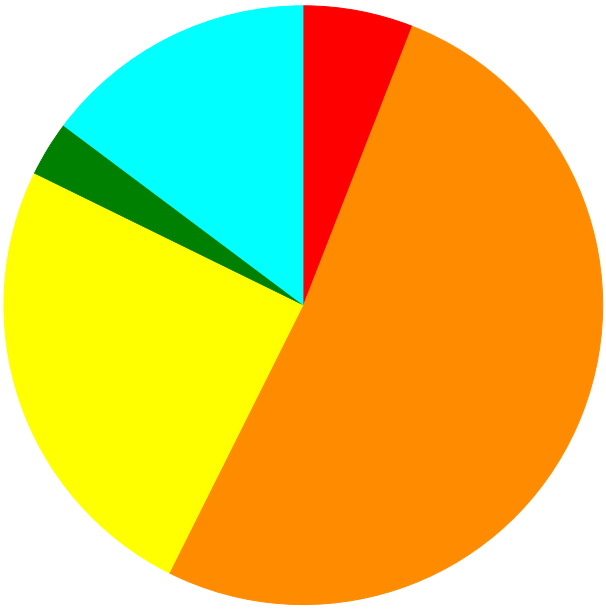
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	42.00 %	0.00 %	$0.00
A20 - Basement Construction	42.00 %	0.00 %	$0.00
B10 - Superstructure	42.00 %	7.32 %	$433,182.48
B20 - Exterior Enclosure	62.39 %	70.55 %	$2,644,634.69
B30 - Roofing	110.00 %	89.67 %	$887,966.23
C10 - Interior Construction	49.80 %	43.58 %	$711,165.14
C20 - Stairs	42.00 %	54.28 %	$50,899.88
C30 - Interior Finishes	59.35 %	38.55 %	$1,358,253.06
D10 - Conveying	91.43 %	71.33 %	$72,573.24
D20 - Plumbing	69.02 %	87.89 %	$1,193,491.73
D30 - HVAC	107.77 %	73.52 %	$5,438,971.94
D40 - Fire Protection	96.05 %	177.49 %	$951,310.76
D50 - Electrical	99.79 %	27.94 %	$1,092,007.01
E10 - Equipment	57.90 %	27.73 %	$293,594.70
E20 - Furnishings	105.00 %	239.04 %	$338,594.58
G20 - Site Improvements	53.55 %	62.10 %	$470,832.82
G40 - Site Electrical Utilities	45.58 %	27.18 %	$73,750.98
Totals:	**72.08 %**	**46.47 %**	**$16,011,229.24**

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)
B130001;Harrington	66,500	46.27	$884,930.38	$7,958,022.59	$3,782,293.40	$475,689.52	$2,365,709.55
G130001;Grounds	46,700	52.90	$62,356.33	$280,481.11	$201,746.36	$0.00	$0.00
Total:		**46.47**	**$947,286.71**	**$8,238,503.70**	**$3,984,039.76**	**$475,689.52**	**$2,365,709.55**

Deficiencies By Priority



- 1 - Response Time (< 2 yr) - $947,286.71
- 2 - Response Time (2-3 yrs) - $8,238,503.70
- 3 - Response Time (3-4 yrs) - $3,984,039.76
- 4 - Response Time (4-5 yrs) - $475,689.52
- 5 - Response Time (> 5 yrs) - $2,365,709.55

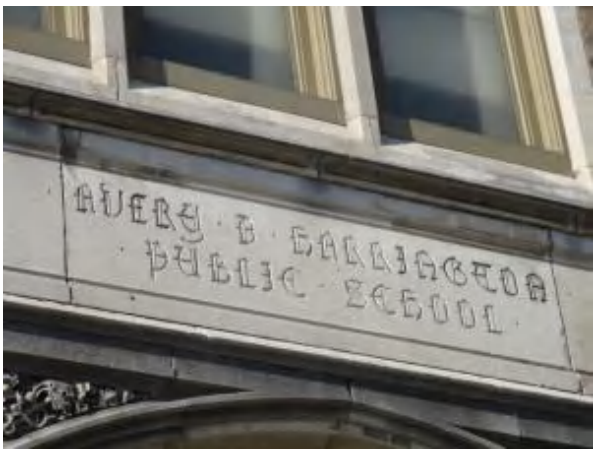
Budget Estimate Total: $16,011,229.24

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):	66,500
Year Built:	1927
Last Renovation:	
Replacement Value:	$33,424,654
Repair Cost:	$15,466,645.44
Total FCI:	46.27 %
Total RSLI:	72.71 %



Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B130001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S130001		

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	42.00 %	0.00 %	$0.00
A20 - Basement Construction	42.00 %	0.00 %	$0.00
B10 - Superstructure	42.00 %	7.32 %	$433,182.48
B20 - Exterior Enclosure	62.39 %	70.55 %	$2,644,634.69
B30 - Roofing	110.00 %	89.67 %	$887,966.23
C10 - Interior Construction	49.80 %	43.58 %	$711,165.14
C20 - Stairs	42.00 %	54.28 %	$50,899.88
C30 - Interior Finishes	59.35 %	38.55 %	$1,358,253.06
D10 - Conveying	91.43 %	71.33 %	$72,573.24
D20 - Plumbing	69.02 %	87.89 %	$1,193,491.73
D30 - HVAC	107.77 %	73.52 %	$5,438,971.94
D40 - Fire Protection	96.05 %	177.49 %	$951,310.76
D50 - Electrical	99.79 %	27.94 %	$1,092,007.01
E10 - Equipment	57.90 %	27.73 %	$293,594.70
E20 - Furnishings	105.00 %	239.04 %	$338,594.58
Totals:	**72.71 %**	**46.27 %**	**$15,466,645.44**

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.	66,500	100	1927	2027	2057	42.00 %	0.00 %	42			$1,223,600
A1030	Slab on Grade	$7.73	S.F.	66,500	100	1927	2027	2057	42.00 %	0.00 %	42			$514,045
A2010	Basement Excavation	$6.55	S.F.	66,500	100	1927	2027	2057	42.00 %	0.00 %	42			$435,575
A2020	Basement Walls	$12.70	S.F.	66,500	100	1927	2027	2057	42.00 %	0.00 %	42			$844,550
B1010	Floor Construction	$75.10	S.F.	66,500	100	1927	2027	2057	42.00 %	0.00 %	42			$4,994,150
B1020	Roof Construction	$13.88	S.F.	66,500	100	1927	2027	2057	42.00 %	46.93 %	42		$433,182.48	$923,020
B2010	Exterior Walls	$36.91	S.F.	66,500	100	1927	2027	2057	42.00 %	34.02 %	42		$835,005.75	$2,454,515
B2020	Exterior Windows	$18.01	S.F.	66,500	40	1927	1967	2057	105.00 %	150.52 %	42		$1,802,774.99	$1,197,665
B2030	Exterior Doors	$1.45	S.F.	66,500	25	1927	1952	2028	52.00 %	7.11 %	13		$6,853.95	$96,425
B3010105	Built-Up	$37.76	S.F.	26,118	20	1927	1947	2037	110.00 %	89.73 %	22		$884,930.38	$986,216
B3010120	Single Ply Membrane	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$38.73	S.F.		25				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	66,500	20	1927	1947	2037	110.00 %	76.09 %	22		$3,035.85	$3,990
C1010	Partitions	$17.91	S.F.	66,500	100	1927	2027	2057	42.00 %	41.30 %	42		$491,833.97	$1,191,015
C1020	Interior Doors	$3.51	S.F.	66,500	40	1927	1967	2057	105.00 %	73.81 %	42		$172,279.56	$233,415
C1030	Fittings	$3.12	S.F.	66,500	40	1927	1967	2028	32.50 %	22.68 %	13		$47,051.61	$207,480
C2010	Stair Construction	$1.41	S.F.	66,500	100	1927	2027	2057	42.00 %	54.28 %	42		$50,899.88	$93,765

Site Assessment Report - B130001;Harrington

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3010230	Paint & Covering	$15.14	S.F.	66,500	10	1927	1937		0.00 %	2.55 %	-78		$25,701.23	$1,006,810
C3010231	Vinyl Wall Covering	$0.00	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.	66,500	30	1927	1957		0.00 %	0.00 %	-58			$174,895
C3020411	Carpet	$7.30	S.F.		10				0.00 %	0.00 %				$0
C3020412	Terrazzo & Tile	$75.52	S.F.	2,425	50	1927	1977		0.00 %	0.00 %	-38			$183,136
C3020413	Vinyl Flooring	$9.68	S.F.	33,943	20	1927	1947	2037	110.00 %	92.32 %	22		$303,333.36	$328,568
C3020414	Wood Flooring	$22.27	S.F.	19,050	25	1927	1952	2028	52.00 %	6.18 %	13		$26,236.86	$424,244
C3020415	Concrete Floor Finishes	$0.97	S.F.	11,082	50	1927	1977	2028	26.00 %	0.00 %	13			$10,750
C3030	Ceiling Finishes	$20.97	S.F.	66,500	25	1927	1952	2042	108.00 %	71.92 %	27		$1,002,981.61	$1,394,505
D1010	Elevators and Lifts	$1.53	S.F.	66,500	35	1927	1962	2047	91.43 %	71.33 %	32		$72,573.24	$101,745
D2010	Plumbing Fixtures	$13.52	S.F.	66,500	35	1950	1985	2040	71.43 %	17.61 %	25		$158,355.56	$899,080
D2020	Domestic Water Distribution	$1.68	S.F.	66,500	25	1960	1985	2035	80.00 %	370.58 %	20		$414,014.17	$111,720
D2030	Sanitary Waste	$2.90	S.F.	66,500	25	1960	1985	2035	80.00 %	169.16 %	20		$326,232.32	$192,850
D2040	Rain Water Drainage	$2.32	S.F.	66,500	30	1927	1957	2025	33.33 %	191.14 %	10		$294,889.68	$154,280
D3020	Heat Generating Systems	$18.67	S.F.	66,500	35	1969	2004	2052	105.71 %	63.14 %	37		$783,903.14	$1,241,555
D3030	Cooling Generating Systems	$24.48	S.F.	66,500	30	1969	1999	2047	106.67 %	48.83 %	32		$794,939.99	$1,627,920
D3040	Distribution Systems	$42.99	S.F.	66,500	25	1927	1952	2042	108.00 %	85.12 %	27		$2,433,562.26	$2,858,835
D3050	Terminal & Package Units	$11.60	S.F.	66,500	20	1927	1947	2037	110.00 %	0.00 %	22			$771,400
D3060	Controls & Instrumentation	$13.50	S.F.	66,500	20	1927	1947	2037	110.00 %	158.90 %	22		$1,426,566.55	$897,750
D4010	Sprinklers	$7.05	S.F.	66,500	35			2052	105.71 %	202.91 %	37		$951,310.76	$468,825
D4020	Standpipes	$1.01	S.F.	66,500	35	1969	2004	2025	28.57 %	0.00 %	10			$67,165
D5010	Electrical Service/Distribution	$9.70	S.F.	66,500	30	1927	1957	2047	106.67 %	93.15 %	32		$600,840.33	$645,050
D5020	Lighting and Branch Wiring	$34.68	S.F.	66,500	20	1927	1947	2037	110.00 %	3.39 %	22		$78,070.38	$2,306,220
D5030	Communications and Security	$12.99	S.F.	66,500	15	2010	2025		66.67 %	21.08 %	10		$182,094.82	$863,835
D5090	Other Electrical Systems	$1.41	S.F.	66,500	30	1927	1957	2047	106.67 %	246.36 %	32		$231,001.48	$93,765
E1020	Institutional Equipment	$4.82	S.F.	66,500	35	1927	1962	2052	105.71 %	91.60 %	37		$293,594.70	$320,530
E1090	Other Equipment	$11.10	S.F.	66,500	35	1927	1962	2028	37.14 %	0.00 %	13			$738,150
E2010	Fixed Furnishings	$2.13	S.F.	66,500	40	1927	1967	2057	105.00 %	239.04 %	42		$338,594.58	$141,645
								Total	**72.71 %**	**46.27 %**			**$15,466,645.44**	**$33,424,654**

System Notes

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

System: C3010 - Wall Finishes

This system contains no images

Note: Paint 90%
Wall tile 10%

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:	**$15,466,645**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$3,092,755**	**$18,559,400**
*** 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	$433,182	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$433,182**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$835,006	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$835,006**
B2020 - Exterior Windows	$1,802,775	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,802,775**
B2030 - Exterior Doors	$6,854	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$6,854**
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	$884,930	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$884,930**
B3010120 - Single Ply Membrane	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010130 - Preformed Metal Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010140 - Shingle & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3020 - Roof Openings	$3,036	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,036**
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	$491,834	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$491,834**

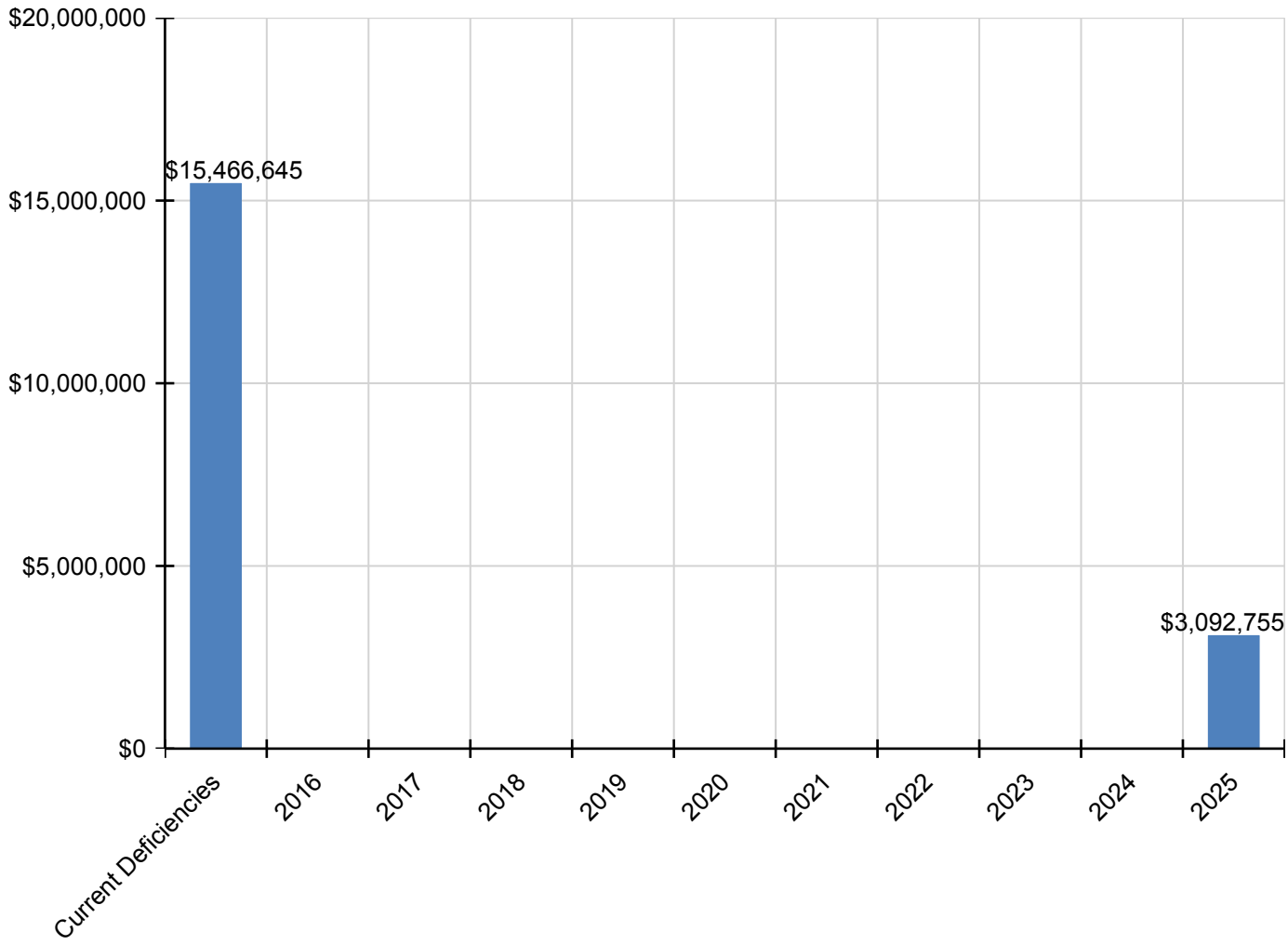
C1020 - Interior Doors	$172,280	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$172,280**
C1030 - Fittings	$47,052	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$47,052**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$50,900	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$50,900**
C30 - Interior Finishes	$0	$0	$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	$25,701	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,488,375	**$1,514,077**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$303,333	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$303,333**
C3020414 - Wood Flooring	$26,237	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$26,237**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$1,002,982	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,002,982**
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	$72,573	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$72,573**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$158,356	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$158,356**
D2020 - Domestic Water Distribution	$414,014	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$414,014**
D2030 - Sanitary Waste	$326,232	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$326,232**
D2040 - Rain Water Drainage	$294,890	$0	$0	$0	$0	$0	$0	$0	$0	$0	$228,073	**$522,963**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$783,903	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$783,903**
D3030 - Cooling Generating Systems	$794,940	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$794,940**
D3040 - Distribution Systems	$2,433,562	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,433,562**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,426,567	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,426,567**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$951,311	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$951,311**
D4020 - Standpipes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$99,291	**$99,291**

D50 - Electrical	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution	$600,840	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$600,840**
D5020 - Lighting and Branch Wiring	$78,070	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$78,070**
D5030 - Communications and Security	$182,095	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,277,015	**$1,459,110**
D5090 - Other Electrical Systems	$231,001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$231,001**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$293,595	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$293,595**
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	$338,595	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$338,595**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

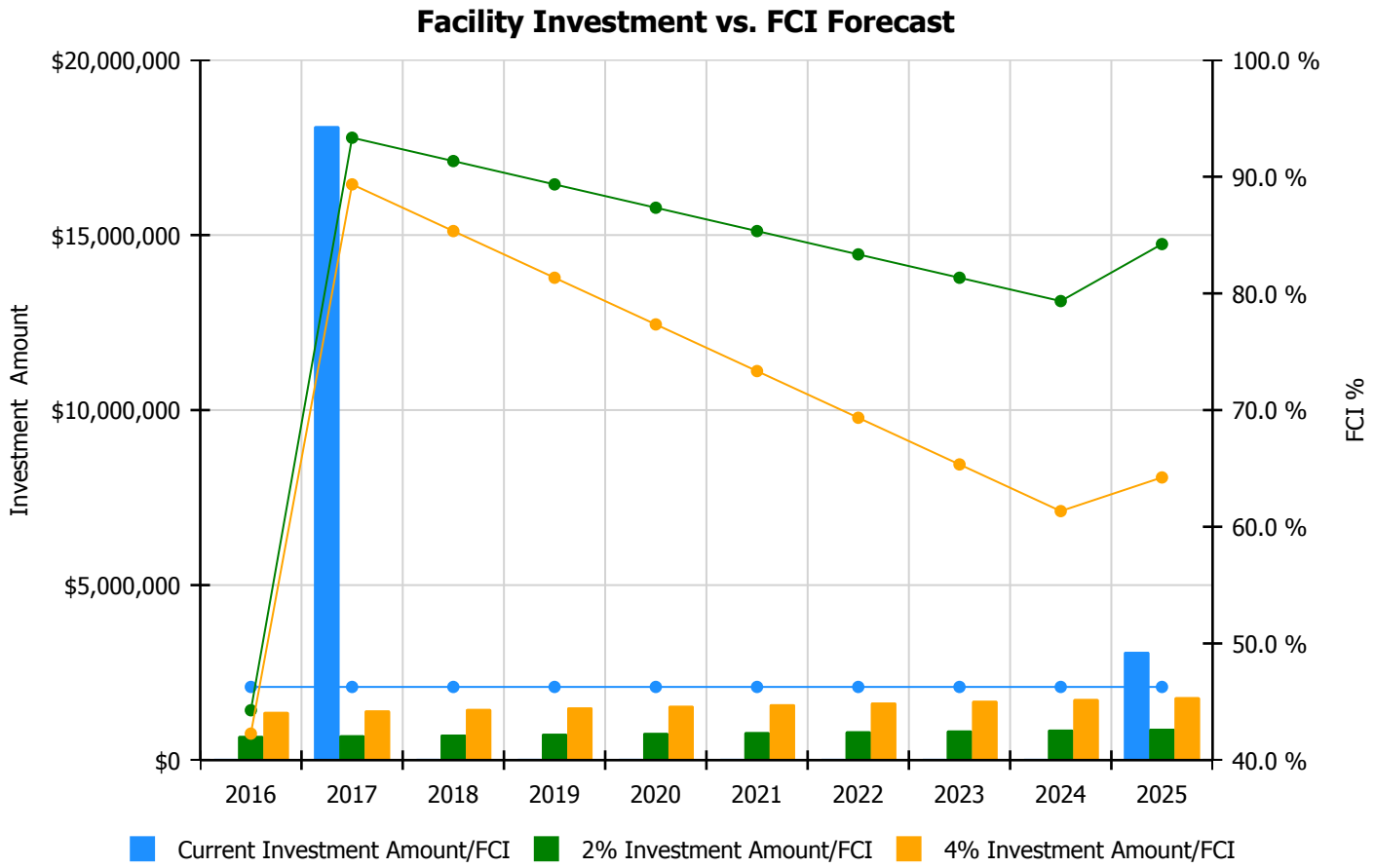
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

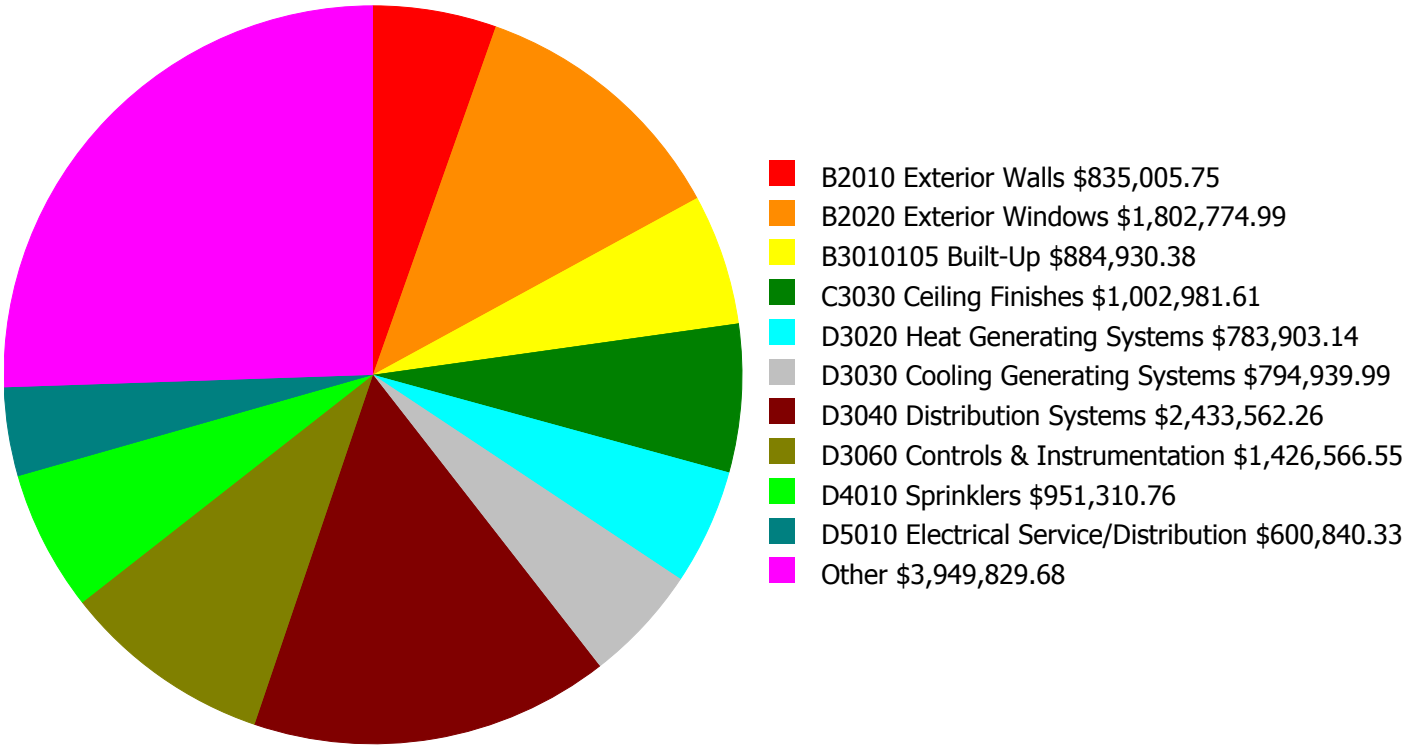
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 46.27%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$688,548.00	44.27 %	$1,377,096.00	42.27 %
2017	$18,109,184	$709,204.00	93.34 %	$1,418,409.00	89.34 %
2018	$0	$730,480.00	91.34 %	$1,460,961.00	85.34 %
2019	$0	$752,395.00	89.34 %	$1,504,790.00	81.34 %
2020	$0	$774,967.00	87.34 %	$1,549,933.00	77.34 %
2021	$0	$798,216.00	85.34 %	$1,596,431.00	73.34 %
2022	$0	$822,162.00	83.34 %	$1,644,324.00	69.34 %
2023	$0	$846,827.00	81.34 %	$1,693,654.00	65.34 %
2024	$0	$872,232.00	79.34 %	$1,744,464.00	61.34 %
2025	$3,092,755	$898,399.00	84.23 %	$1,796,798.00	64.23 %
Total:	**$21,201,939**	**$7,893,430.00**		**$15,786,860.00**	

Deficiency Summary by System

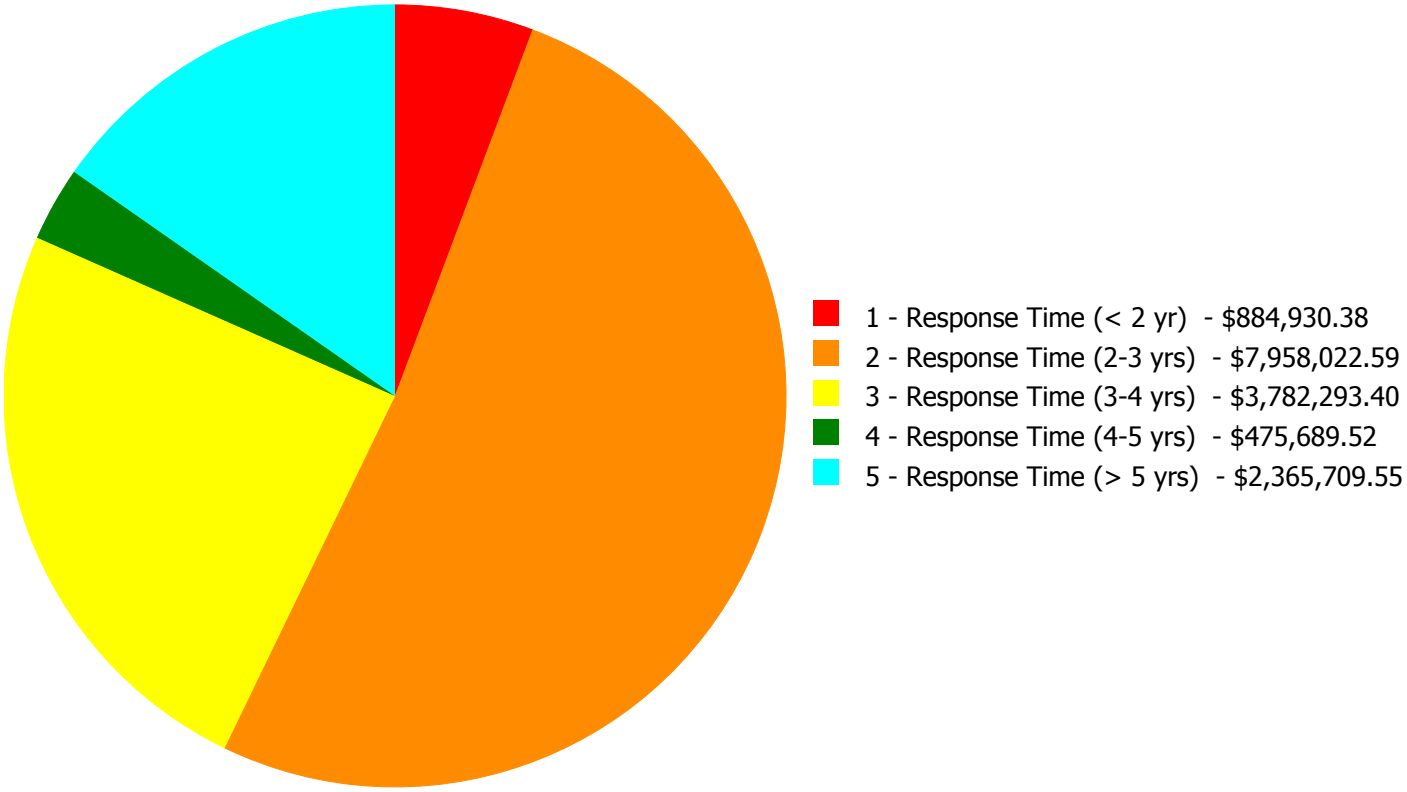
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $15,466,645.44

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: $15,466,645.44

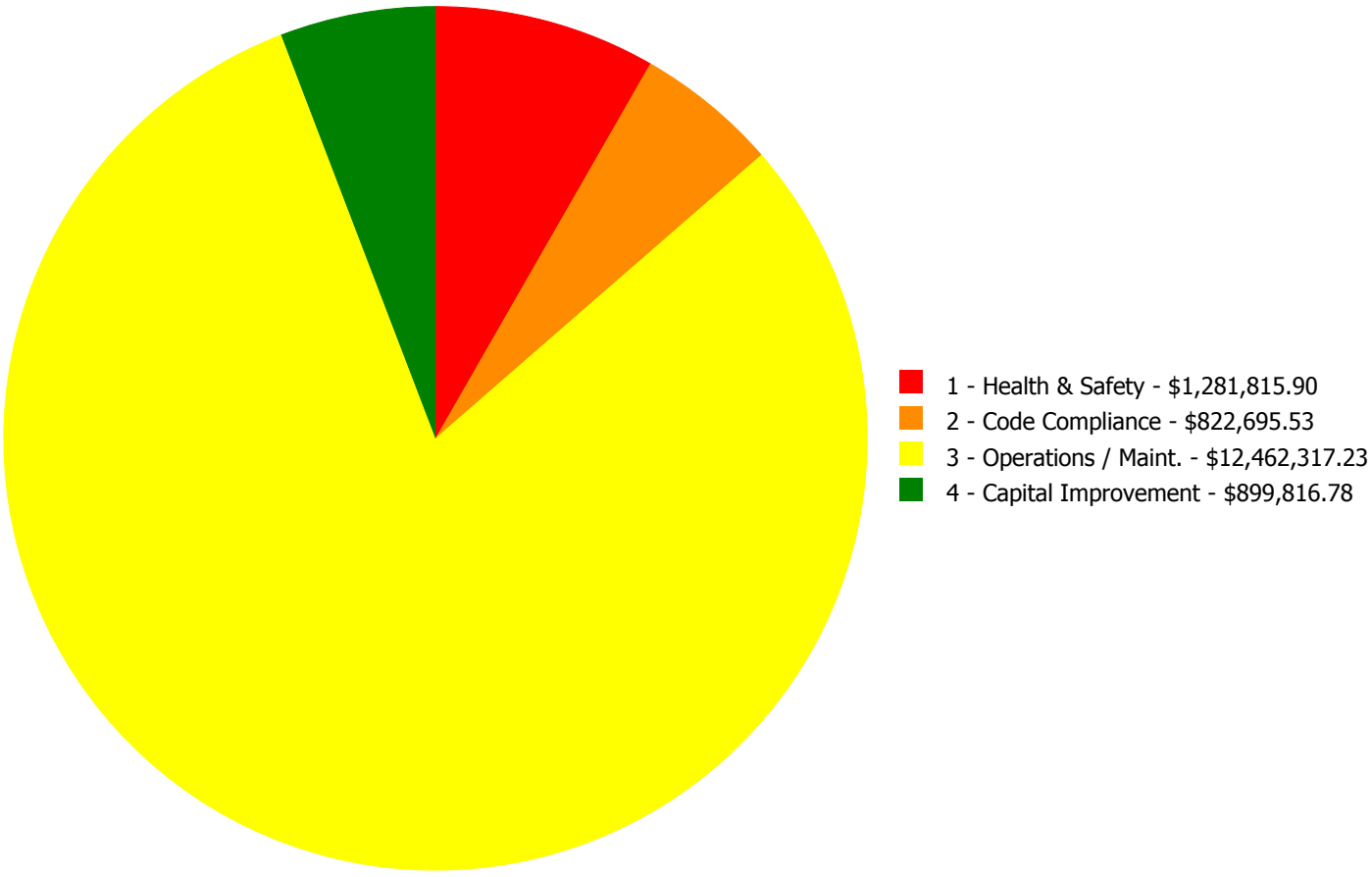
Deficiency By Priority Investment Table

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
B1020	Roof Construction	$0.00	$433,182.48	$0.00	$0.00	$0.00	$433,182.48
B2010	Exterior Walls	$0.00	$835,005.75	$0.00	$0.00	$0.00	$835,005.75
B2020	Exterior Windows	$0.00	$1,802,774.99	$0.00	$0.00	$0.00	$1,802,774.99
B2030	Exterior Doors	$0.00	$6,853.95	$0.00	$0.00	$0.00	$6,853.95
B3010105	Built-Up	$884,930.38	$0.00	$0.00	$0.00	$0.00	$884,930.38
B3020	Roof Openings	$0.00	$3,035.85	$0.00	$0.00	$0.00	$3,035.85
C1010	Partitions	$0.00	$491,833.97	$0.00	$0.00	$0.00	$491,833.97
C1020	Interior Doors	$0.00	$172,279.56	$0.00	$0.00	$0.00	$172,279.56
C1030	Fittings	$0.00	$47,051.61	$0.00	$0.00	$0.00	$47,051.61
C2010	Stair Construction	$0.00	$50,899.88	$0.00	$0.00	$0.00	$50,899.88
C3010230	Paint & Covering	$0.00	$25,701.23	$0.00	$0.00	$0.00	$25,701.23
C3020413	Vinyl Flooring	$0.00	$303,333.36	$0.00	$0.00	$0.00	$303,333.36
C3020414	Wood Flooring	$0.00	$26,236.86	$0.00	$0.00	$0.00	$26,236.86
C3030	Ceiling Finishes	$0.00	$1,002,981.61	$0.00	$0.00	$0.00	$1,002,981.61
D1010	Elevators and Lifts	$0.00	$0.00	$72,573.24	$0.00	$0.00	$72,573.24
D2010	Plumbing Fixtures	$0.00	$147,237.40	$11,118.16	$0.00	$0.00	$158,355.56
D2020	Domestic Water Distribution	$0.00	$22,427.65	$54,606.72	$0.00	$336,979.80	$414,014.17
D2030	Sanitary Waste	$0.00	$0.00	$326,232.32	$0.00	$0.00	$326,232.32
D2040	Rain Water Drainage	$0.00	$294,889.68	$0.00	$0.00	$0.00	$294,889.68
D3020	Heat Generating Systems	$0.00	$128,106.25	$655,796.89	$0.00	$0.00	$783,903.14
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$794,939.99	$794,939.99
D3040	Distribution Systems	$0.00	$399,029.38	$1,752,053.88	$0.00	$282,479.00	$2,433,562.26
D3060	Controls & Instrumentation	$0.00	$1,426,566.55	$0.00	$0.00	$0.00	$1,426,566.55
D4010	Sprinklers	$0.00	$0.00	$0.00	$0.00	$951,310.76	$951,310.76
D5010	Electrical Service/Distribution	$0.00	$0.00	$600,840.33	$0.00	$0.00	$600,840.33
D5020	Lighting and Branch Wiring	$0.00	$0.00	$78,070.38	$0.00	$0.00	$78,070.38
D5030	Communications and Security	$0.00	$0.00	$0.00	$182,094.82	$0.00	$182,094.82
D5090	Other Electrical Systems	$0.00	$0.00	$231,001.48	$0.00	$0.00	$231,001.48
E1020	Institutional Equipment	$0.00	$0.00	$0.00	$293,594.70	$0.00	$293,594.70
E2010	Fixed Furnishings	$0.00	$338,594.58	$0.00	$0.00	$0.00	$338,594.58
	Total:	$884,930.38	$7,958,022.59	$3,782,293.40	$475,689.52	$2,365,709.55	$15,466,645.44

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: $15,466,645.44

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: B3010105 - Built-Up

Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Remove and Replace Built Up Roof

Qty: 26,118.00

Unit of Measure: S.F.

Estimate: $884,930.38

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace failing roofing system including insulation, flashing, counter flashing, reglets and coping

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

System: B1020 - Roof Construction

Location: Boiler and coal rooms

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair and epoxy grout exposed rebar on the underside of roof structure and roof beams

Qty: 3,310.00

Unit of Measure: S.F.

Estimate: $268,392.55

Assessor Name: System

Date Created: 02/24/2016

Notes: Make repairs necessary to restore the structural integrity of the concrete beams compromised by corrosion of the metal reinforcing bars at the plaza deck over a portion of the boiler room and the un-used coal/ash room on the east side of the building.

System: B1020 - Roof Construction

Location: Above boiler and coal rooms

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair spalled concrete roof from the top - pick the correct repair and insert the SF of floor area

Qty: 3,310.00

Unit of Measure: S.F.

Estimate: $164,789.93

Assessor Name: System

Date Created: 02/24/2016

Notes: Repair leaks through the plaza deck over a portion of the boiler room and the un-used coal/ash room on the east side of the building.

System: B2010 - Exterior Walls

Location: Exterior walls

Distress: Failing

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: 25,860.00

Unit of Measure: S.F.

Estimate: $835,005.75

Assessor Name: System

Date Created: 02/24/2016

Notes: Repair failing mortar joints in the masonry exterior walls

System: B2020 - Exterior Windows

Location: Exterior walls

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 300.00

Unit of Measure: Ea.

Estimate: $1,802,774.99

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace single pane exterior windows

System: B2030 - Exterior Doors

Location: Second floor

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Add an exterior door in an exterior wall for safety and egress

Qty: 1.00

Unit of Measure: Ea.

Estimate: $6,853.95

Assessor Name: System

Date Created: 02/24/2016

Notes: Install a new access door in the corridor of the 2nd Floor for access to the low roof.

System: B3020 - Roof Openings

Location: Roof

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace skylights - pick the closest size and type

Qty: 2.00

Unit of Measure: Ea.

Estimate: $3,035.85

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace the two damaged skylights over the light shaft above the basement stairwell.

System: C1010 - Partitions

Location: First floor

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Build new gang restroom to meet code or occupant needs - select type and number of fixtures and toilet partitions for mens or womens

Qty: 2.00

Unit of Measure: Ea.

Estimate: $421,508.00

Assessor Name: System

Date Created: 02/24/2016

Notes: Modify the student restrooms on the 1st Floor to provide full accessibility including new toilet partitions, toilet accessories and grab bars.

System: C1010 - Partitions

Location: First floor

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Build new single restroom to meet code requirements

Qty: 1.00

Unit of Measure: Ea.

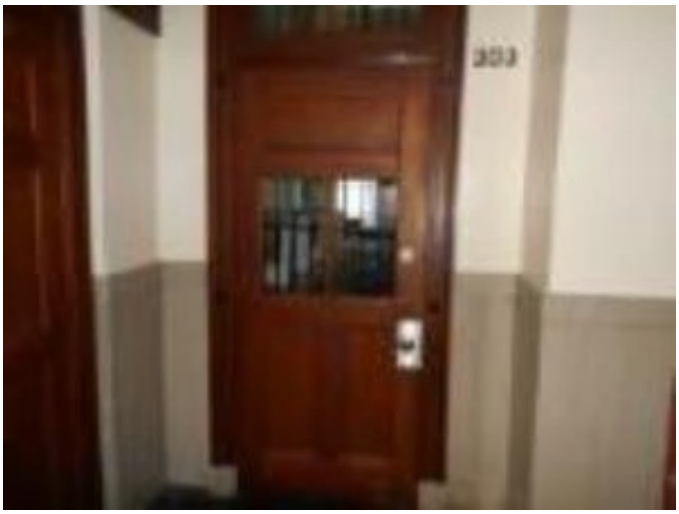
Estimate: $70,325.97

Assessor Name: System

Date Created: 02/24/2016

Notes: Provide a single (unisex) accessible restroom for staff on the 1st Floor

System: C1020 - Interior Doors



Location: Classroom doors

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Remove and replace interior doors - wood doors with wood frame - per leaf

Qty: 30.00

Unit of Measure: Ea.

Estimate: $172,279.56

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace interior classroom doors and provide recess to minimize swing into corridor.

System: C1030 - Fittings

Location: Restrooms

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace toilet partitions

Qty: 12.00

Unit of Measure: Ea.

Estimate: $30,796.86

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace the damaged wood and metal toilet partitions in student facilities.

System: C1030 - Fittings

Location: Throughout the building

Distress: Accessibility

Category: 2 - Code Compliance

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

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

Qty: 60.00

Unit of Measure: Ea.

Estimate: $16,254.75

Assessor Name: System

Date Created: 02/24/2016

Notes: Provide adequate interior directional signage

System: C2010 - Stair Construction

Location: Boiler and electrical rooms

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Add egress stairways from lower levels - per flight including below level concrete basement and doors - add for additional doors if required

Qty: 1.00

Unit of Measure: Flight

Estimate: $50,899.88

Assessor Name: System

Date Created: 02/24/2016

Notes: Provide a second code required exit for the boiler room and main electrical room on the basement level.

System: C3010230 - Paint & Covering

Location: N and E walls 1st and 2nd floors

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 3,000.00

Unit of Measure: S.F.

Estimate: $25,701.23

Assessor Name: System

Date Created: 02/24/2016

Notes: Repair and paint the inside plaster surfaces of the exterior walls damaged by water infiltration at the window heads and bases along the north and east on 1st and 2nd floors.

System: C3020413 - Vinyl Flooring

Location: Basement, auditorium and kindergarten

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 20,000.00

Unit of Measure: S.F.

Estimate: $303,333.36

Assessor Name: System

Date Created: 02/24/2016

Notes: Remove the VAT floors in the basement classrooms and corridors on both levels of the addition, the auditorium and kindergarten classroom.

System: C3020414 - Wood Flooring

Location: Classroom 208

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace wood flooring

Qty: 900.00

Unit of Measure: S.F.

Estimate: $26,236.86

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace the wood floor in Classroom 208 to repair damaged section.

System: C3030 - Ceiling Finishes

Location: Throughout the building

Distress: Appearance

Category: 3 - Operations / Maint.

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

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

Qty: 66,500.00

Unit of Measure: S.F.

Estimate: $1,002,981.61

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace damaged acoustical ceiling panels occurring throughout the building. Clean or paint existing grid.

System: D2010 - Plumbing Fixtures

Location: Toilet rooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace water closet - quantify additional units

Qty: 6.00

Unit of Measure: Ea.

Estimate: $44,772.89

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace 15% of water closets due to age

System: D2010 - Plumbing Fixtures

Location: Corridors

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Remove and Replace Water Fountains - without ADA new recessed alcove

Qty: 5.00

Unit of Measure: Ea.

Estimate: $37,895.95

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace 50% of drinking fountains with accessible type

System: D2010 - Plumbing Fixtures

Location: Cleaning closets

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace floor janitor or mop sink - insert the quantity

Qty: 5.00

Unit of Measure: Ea.

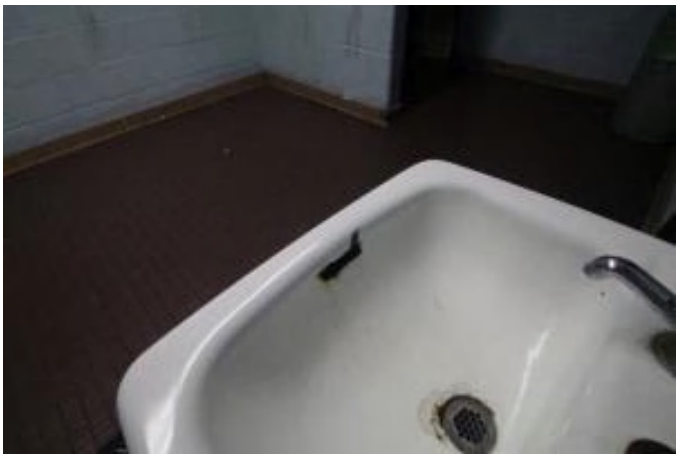
Estimate: $34,080.46

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace service sinks due to age

System: D2010 - Plumbing Fixtures



Location: Toilet rooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace lavatory - quantify accessible if required

Qty: 8.00

Unit of Measure: Ea.

Estimate: $30,488.10

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace 20% of lavatories due to age

System: D2020 - Domestic Water Distribution

Location: Boiler room

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Provide 3" reduced pressure back flow preventer

Qty: 1.00

Unit of Measure: Ea.

Estimate: $22,427.65

Assessor Name: System

Date Created: 02/17/2016

Notes: Install 3 inch backflow preventer at water entry, including demolition of disused booster

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: 66,500.00

Unit of Measure: S.F.

Estimate: $294,889.68

Assessor Name: System

Date Created: 02/17/2016

Notes: Inspect and repair rain water drain pipe

System: D3020 - Heat Generating Systems

Location: Boiler room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace boiler feed pump (duplex) and surge tank

Qty: 1.00

Unit of Measure: Ea.

Estimate: $128,106.25

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace condensate collection tank, boiler feed water sump, and water softener including pumps

System: D3040 - Distribution Systems

Location: Addition classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 8.00

Unit of Measure: Ea.

Estimate: $399,029.38

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace unit vents due to age and lack of cooling coils

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: 66,500.00

Unit of Measure: S.F.

Estimate: $1,426,566.55

Assessor Name: System

Date Created: 02/17/2016

Notes: Convert HVAC controls to digital

System: E2010 - Fixed Furnishings

Location: Auditorium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 361.00

Unit of Measure: Ea.

Estimate: $325,587.89

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace auditorium seating

System: E2010 - Fixed Furnishings

Location: Room 106

Distress: Inadequate

Category: 3 - Operations / Maint.

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

Correction: Replace book cases - pick the closest book case size and number

Qty: 10.00

Unit of Measure: Ea.

Estimate: $7,854.83

Assessor Name: System

Date Created: 02/24/2016

Notes: Provide shelving in storage room 106 at the NE corner of the 1st Floor to eliminate clutter and improve safety.

System: E2010 - Fixed Furnishings

Location: Auditorium

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Replace or add drapery hardware

Qty: 100.00

Unit of Measure: L.F.

Estimate: $5,151.86

Assessor Name: System

Date Created: 02/24/2016

Notes: Install new drapery hardware at auditorium

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

System: D1010 - Elevators and Lifts

Location: Basement - Elevator Machine Room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace elevator motor and controller

Qty: 1.00

Unit of Measure: Ea.

Estimate: $72,573.24

Assessor Name: System

Date Created: 02/08/2016

Notes: Provide new hydraulic elevator motor and controller.

System: D2010 - Plumbing Fixtures

Location: Toilet rooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace wall hung urinals

Qty: 3.00

Unit of Measure: Ea.

Estimate: $11,118.16

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace 15% of urinals due to age

System: D2020 - Domestic Water Distribution

Location: Entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $54,606.72

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace 70 gallon domestic water heater including new expansion tank

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: 66,500.00

Unit of Measure: S.F.

Estimate: $326,232.32

Assessor Name: System

Date Created: 02/17/2016

Notes: Inspect and repair sanitary drain pipe

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 (100 HP)

Qty: 2.00

Unit of Measure: Ea.

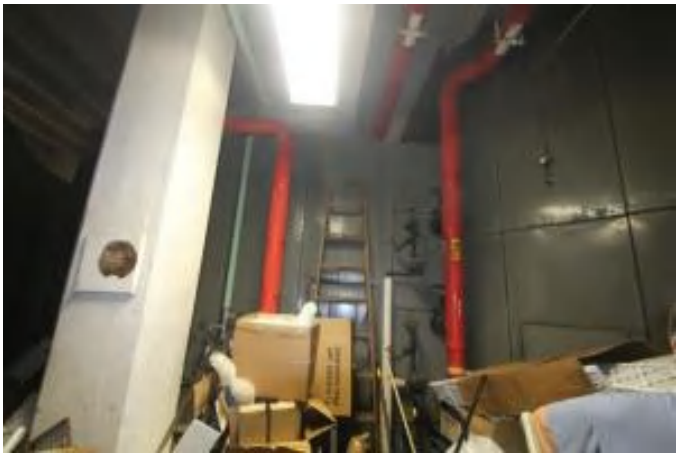
Estimate: $655,796.89

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace boilers due to age

System: D3040 - Distribution Systems



Location: Original building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace indoor AHU, CV, DT (15T)

Qty: 135.00

Unit of Measure: TonAC

Estimate: $775,931.69

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace AHU for original building including duct restoration and replacement

System: D3040 - Distribution Systems

Location: Toilet rooms

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace power roof ventilator (36" dia.)

Qty: 5.00

Unit of Measure: Ea.

Estimate: $459,660.91

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace inoperative rooftop vent fans for toilet exhaust

System: D3040 - Distribution Systems

Location: Entire building

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Perform testing to identify and replace damaged steam and condensate piping.

Qty: 33,250.00

Unit of Measure: S.F.

Estimate: $314,557.43

Assessor Name: System

Date Created: 02/17/2016

Notes: Inspect and repair condensate pipe

System: D3040 - Distribution Systems

Location: Auditorium

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: 361.00

Unit of Measure: Seat

Estimate: $201,903.85

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace air handler for auditorium

System: D5010 - Electrical Service/Distribution

Location: Basement

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Switchboard

Qty: 1.00

Unit of Measure: Ea.

Estimate: $388,020.22

Assessor Name: System

Date Created: 02/08/2016

Notes: Provide a new service entrance switchgear 277/480V, 3 phase power, 1000 Amperes and 300KVA step-down transformer.

System: D5010 - Electrical Service/Distribution

Location: Entire Building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace Electrical Distribution System (U)
Qty: 1.00
Unit of Measure: Ea.
Estimate: $212,820.11
Assessor Name: System
Date Created: 02/08/2016

Notes: Replace existing original panel-boards with new panels and new wiring/conduits. Approximate (8) 208/120V panel boards.

System: D5020 - Lighting and Branch Wiring

Location: Entire Building
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 3 - Response Time (3-4 yrs)
Correction: Add wiring device
Qty: 120.00
Unit of Measure: Ea.
Estimate: $78,070.38
Assessor Name: System
Date Created: 02/08/2016

Notes: Provide one double-duplex receptacle per classroom wall. Approximate 120 receptacles.

System: D5090 - Other Electrical Systems

Location: Outdoor

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Add Standby Generator System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $139,828.55

Assessor Name: System

Date Created: 02/08/2016

Notes: Provide 70KW, outdoor, diesel powered generator

System: D5090 - Other Electrical Systems

Location: Entire Building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Add Emergency/Exit Lighting

Qty: 30.00

Unit of Measure: Ea.

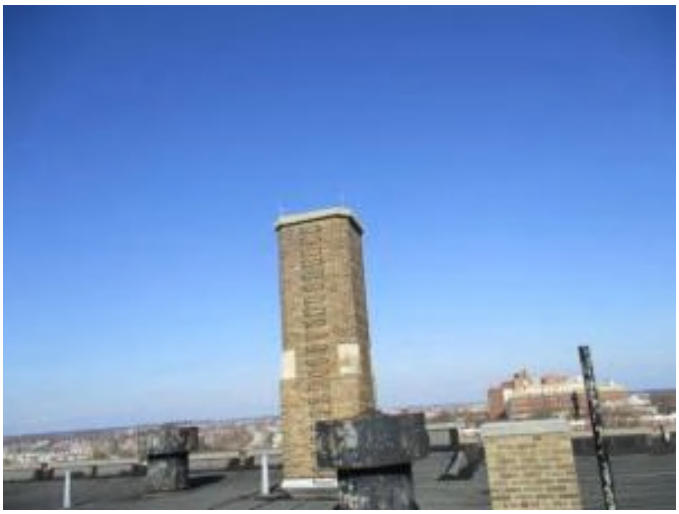
Estimate: $51,289.75

Assessor Name: System

Date Created: 02/08/2016

Notes: Provide wall mounted emergency lighting fixtures with battery backup. Approximate 30

System: D5090 - Other Electrical Systems



Location: Roof

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Repair Lightning Protection System

Qty: 1.00

Unit of Measure: Job

Estimate: $24,249.82

Assessor Name: System

Date Created: 02/08/2016

Notes: Prepare a study to determine if the air terminals mounted on the school chimney provide the proper protection to the school building.

System: D5090 - Other Electrical Systems

Location: Entire Building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Add Emergency/Exit Lighting

Qty: 20.00

Unit of Measure: Ea.

Estimate: $15,633.36

Assessor Name: System

Date Created: 02/08/2016

Notes: Replace existing exit signs with exit signs with battery backup. Approximate 20

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

System: D5030 - Communications and Security

Location: Entire Building
Distress: Security Issue
Category: 1 - Health & Safety
Priority: 4 - Response Time (4-5 yrs)
Correction: Add/Replace Video Surveillance System
Qty: 1.00
Unit of Measure: Ea.
Estimate: $123,753.48
Assessor Name: System
Date Created: 02/08/2016

Notes: Provide indoor surveillance CCTV cameras for total coverage of the school interior. Approximate 30 CCTV cameras.

System: D5030 - Communications and Security

Location: Entire Building
Distress: Obsolete
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Provide wireless GPS clock system
Qty: 1.00
Unit of Measure: LS
Estimate: $31,534.93
Assessor Name: System
Date Created: 02/08/2016

Notes: Replace clock system with wireless, synchronized, battery operated, clock system. Approximate 50 clocks.

System: D5030 - Communications and Security

Location: Auditorium
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 4 - Response Time (4-5 yrs)
Correction: Add/Replace Sound System
Qty: 1.00
Unit of Measure: LS
Estimate: $26,806.41
Assessor Name: System
Date Created: 02/08/2016

Notes: Provide the auditorium with a permanent installed, modern sound system.

System: E1020 - Institutional Equipment

Location: Auditorium
Distress: Obsolete
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Add/Replace Stage Theatrical Lighting System
Qty: 1.00
Unit of Measure: Ea.
Estimate: $293,594.70
Assessor Name: System
Date Created: 02/08/2016

Notes: Provide new theatrical lighting and dimming control system.

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: 66,500.00

Unit of Measure: S.F.

Estimate: $336,979.80

Assessor Name: System

Date Created: 02/17/2016

Notes: Inspect and repair domestic water distribution pipe

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: 49,500.00

Unit of Measure: S.F.

Estimate: $794,939.99

Assessor Name: System

Date Created: 02/17/2016

Notes: Install a 165 ton air-conditioning system for the entire building, 49,500 s.f.

System: D3040 - Distribution Systems

Location: Entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace finned tube radiation terminals (per 100 LF)

Qty: 700.00

Unit of Measure: L.F.

Estimate: $282,479.00

Assessor Name: System

Date Created: 02/17/2016

Notes: Replace radiators and finned tube convection units

System: D4010 - Sprinklers

Location: Entire building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 5 - Response Time (> 5 yrs)

Correction: Install a fire protection sprinkler system

Qty: 66,500.00

Unit of Measure: S.F.

Estimate: $951,310.76

Assessor Name: System

Date Created: 02/17/2016

Notes: Install a fire protection sprinkler system including fire pump is 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
D1010 Elevators and Lifts	Hydraulic, passenger elevator, 2000 lb, 5 floors, 100 FPM	1.00	Ea.	Basement-Elevator Machine Room					30	1927	2047	$140,070.00	$154,077.00
D3020 Heat Generating Systems	Boiler, gas fired, natural or propane, cast iron, steam, gross output, 4207 MBH, includes standard controls and insulated jacket, packaged	2.00	Ea.	Boiler room					35	1969	2052	$67,578.50	$148,672.70
D3040 Distribution Systems	AHU, field fabricated, built up, cool/heat coils, filters, constant volume, 60,000 CFM	1.00	Ea.	Basement mechanical room					25	1927	2042	$161,221.20	$177,343.32
D5010 Electrical Service/Distribution	Switchboards, distribution section, aluminum bus bars, 4 W, 120/208 or 277/480 V, 1200 amp, excl breakers	1.00	Ea.	Basement - electrical room					30	1927	2047	$6,551.55	$7,206.71
												Total:	**$487,299.73**

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):	46,700
Year Built:	1927
Last Renovation:	
Replacement Value:	$1,029,499
Repair Cost:	$544,583.80
Total FCI:	52.90 %
Total RSLI:	51.45 %

Description:

Attributes:

General Attributes:

Bldg ID:	S130001	Site ID:	S130001

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	53.55 %	62.10 %	$470,832.82
G40 - Site Electrical Utilities	45.58 %	27.18 %	$73,750.98
Totals:	**51.45 %**	**52.90 %**	**$544,583.80**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2010	Roadways	$11.52	S.F.		30				0.00 %	0.00 %				$0
G2020	Parking Lots	$8.50	S.F.		30				0.00 %	0.00 %				$0
G2030	Pedestrian Paving	$12.30	S.F.	44,200	40	1927	1967	2028	32.50 %	30.71 %	13		$166,944.27	$543,660
G2040	Site Development	$4.36	S.F.	46,700	25	1927	1952	2042	108.00 %	149.25 %	27		$303,888.55	$203,612
G2050	Landscaping & Irrigation	$4.36	S.F.	2,500	15	1927	1942	2028	86.67 %	0.00 %	13			$10,900
G4020	Site Lighting	$4.84	S.F.	46,700	30	1927	1957	2025	33.33 %	0.00 %	10			$226,028
G4030	Site Communications & Security	$0.97	S.F.	46,700	30	1927	1957	2047	106.67 %	162.81 %	32		$73,750.98	$45,299
								Total	**51.45 %**	**52.90 %**			**$544,583.80**	**$1,029,499**

System Notes

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

No data found for this asset

Renewal Schedule

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

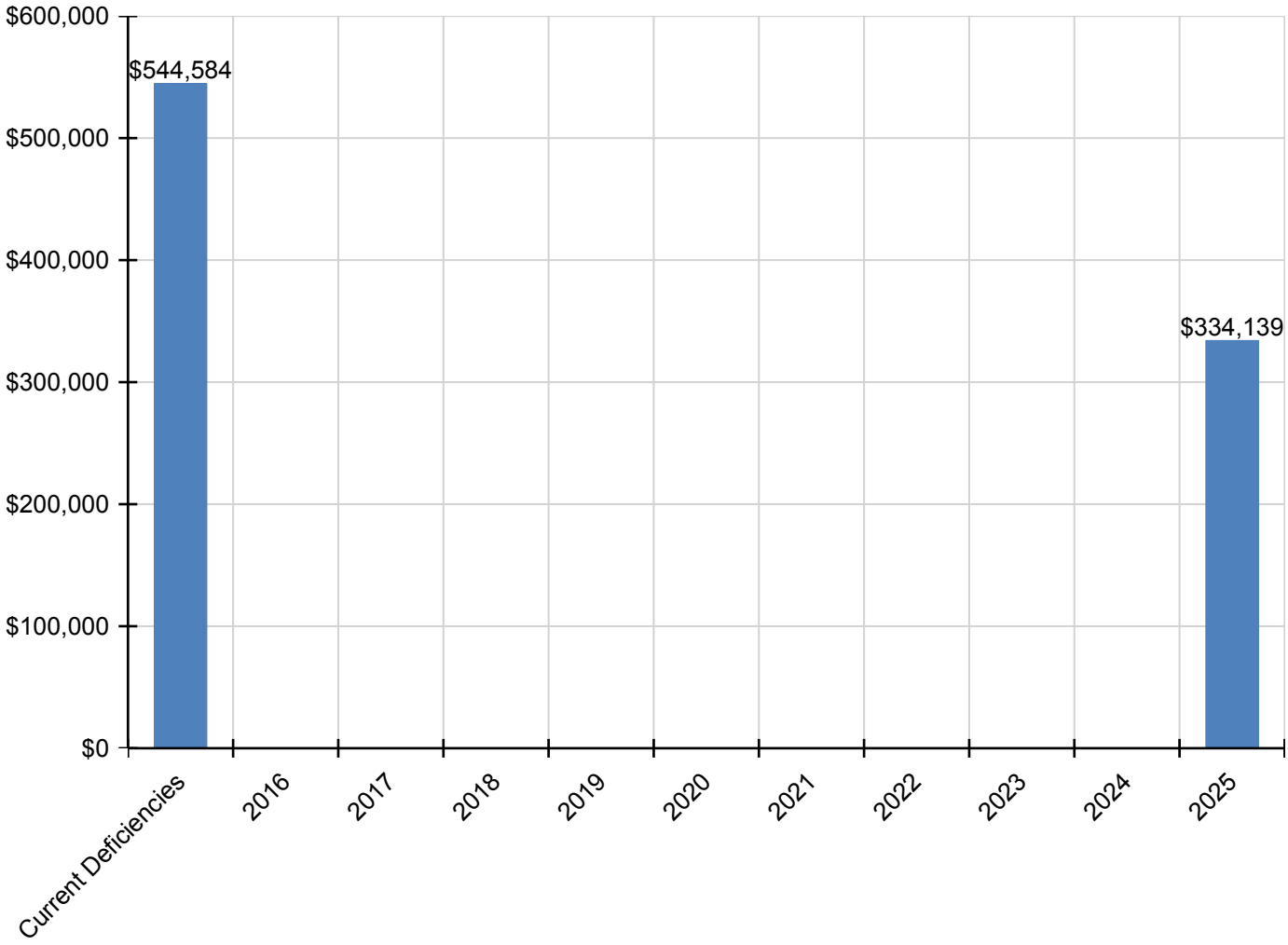
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$544,584**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$334,139**	**$878,723**
G - Building Sitework	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G20 - Site Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2010 - Roadways	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2020 - Parking Lots	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2030 - Pedestrian Paving	$166,944	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$166,944**
G2040 - Site Development	$303,889	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$303,889**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$334,139	**$334,139**
G4030 - Site Communications & Security	$73,751	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$73,751**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

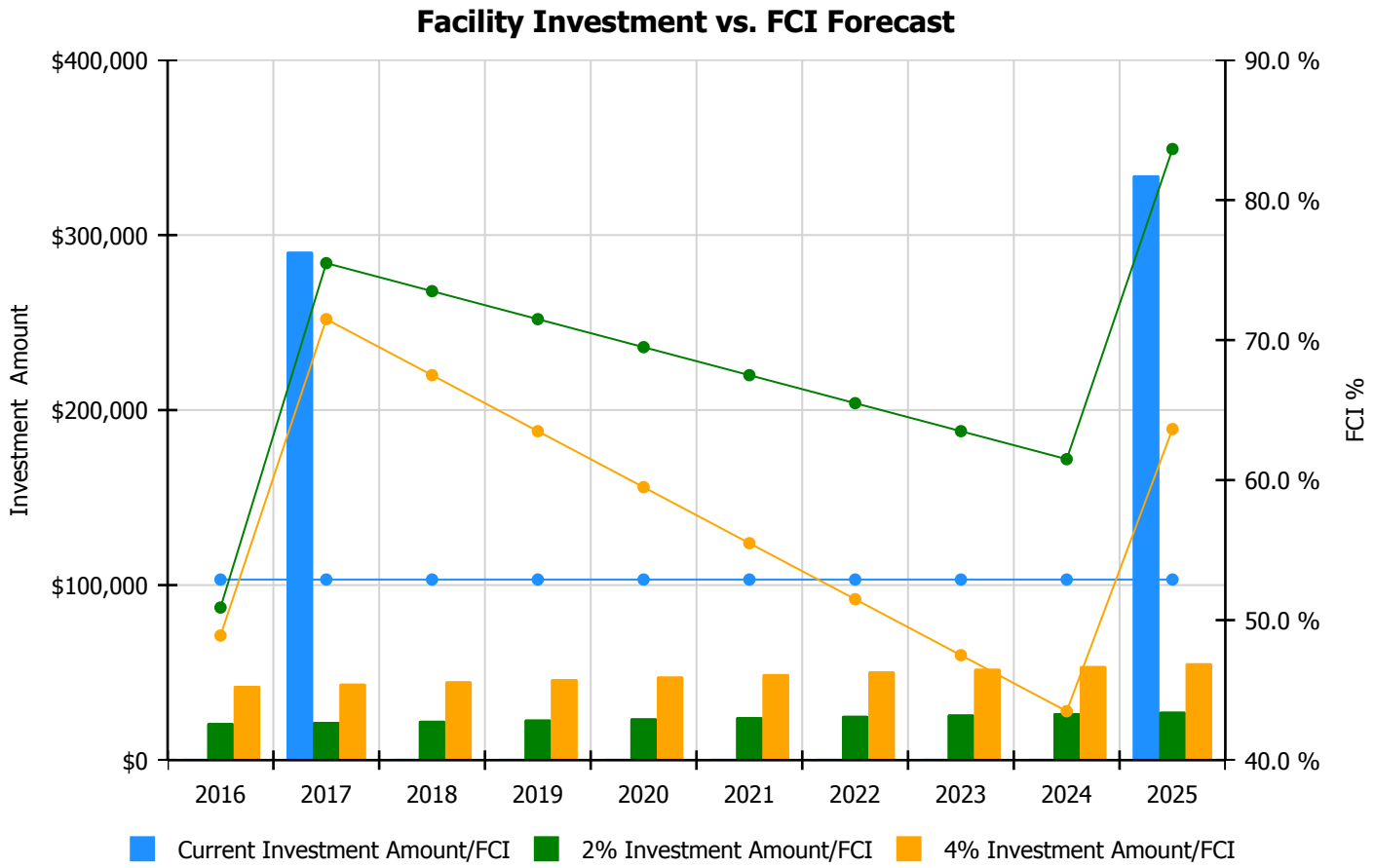
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

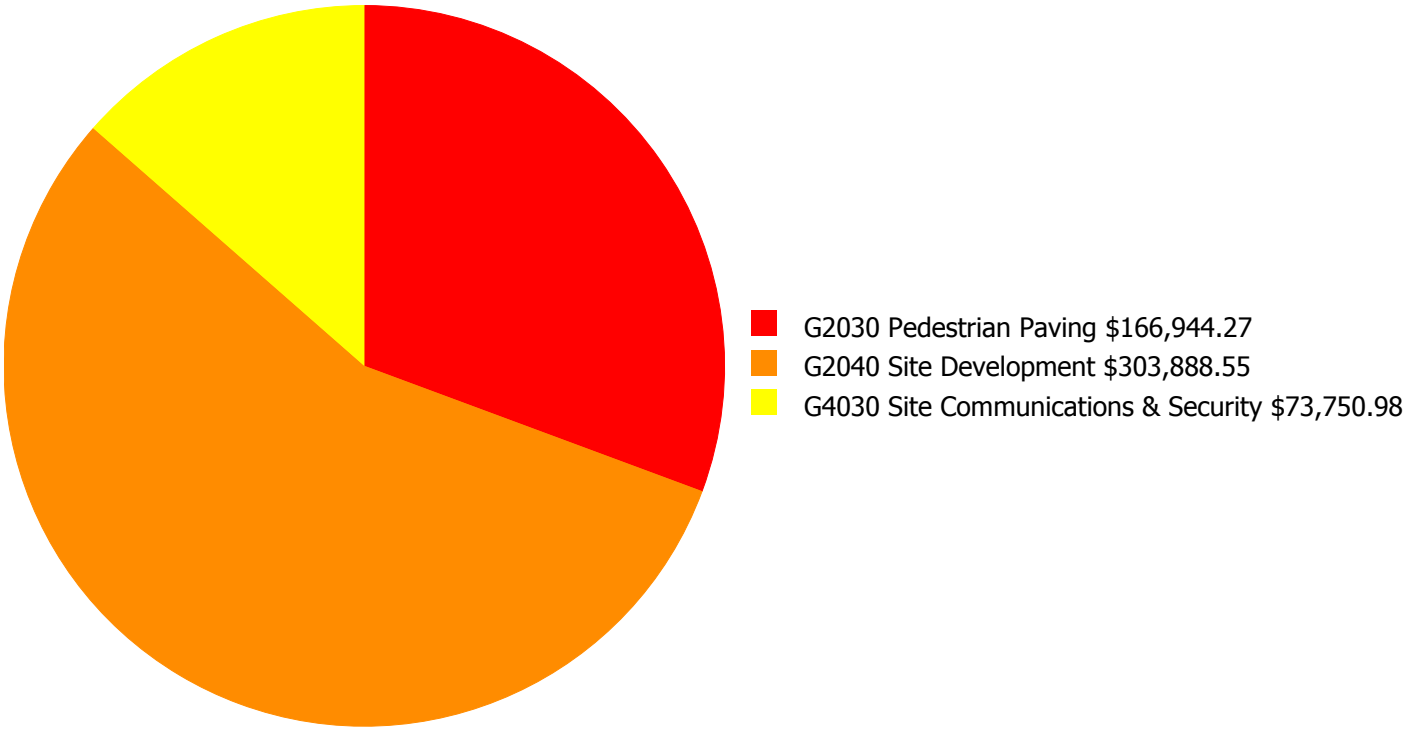
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 52.9%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$21,208.00	50.90 %	$42,415.00	48.90 %
2017	$290,477	$21,844.00	75.49 %	$43,688.00	71.49 %
2018	$0	$22,499.00	73.49 %	$44,998.00	67.49 %
2019	$0	$23,174.00	71.49 %	$46,348.00	63.49 %
2020	$0	$23,869.00	69.49 %	$47,739.00	59.49 %
2021	$0	$24,586.00	67.49 %	$49,171.00	55.49 %
2022	$0	$25,323.00	65.49 %	$50,646.00	51.49 %
2023	$0	$26,083.00	63.49 %	$52,166.00	47.49 %
2024	$0	$26,865.00	61.49 %	$53,731.00	43.49 %
2025	$334,139	$27,671.00	83.64 %	$55,342.00	63.64 %
Total:	**$624,616**	**$243,122.00**		**$486,244.00**	

Deficiency Summary by System

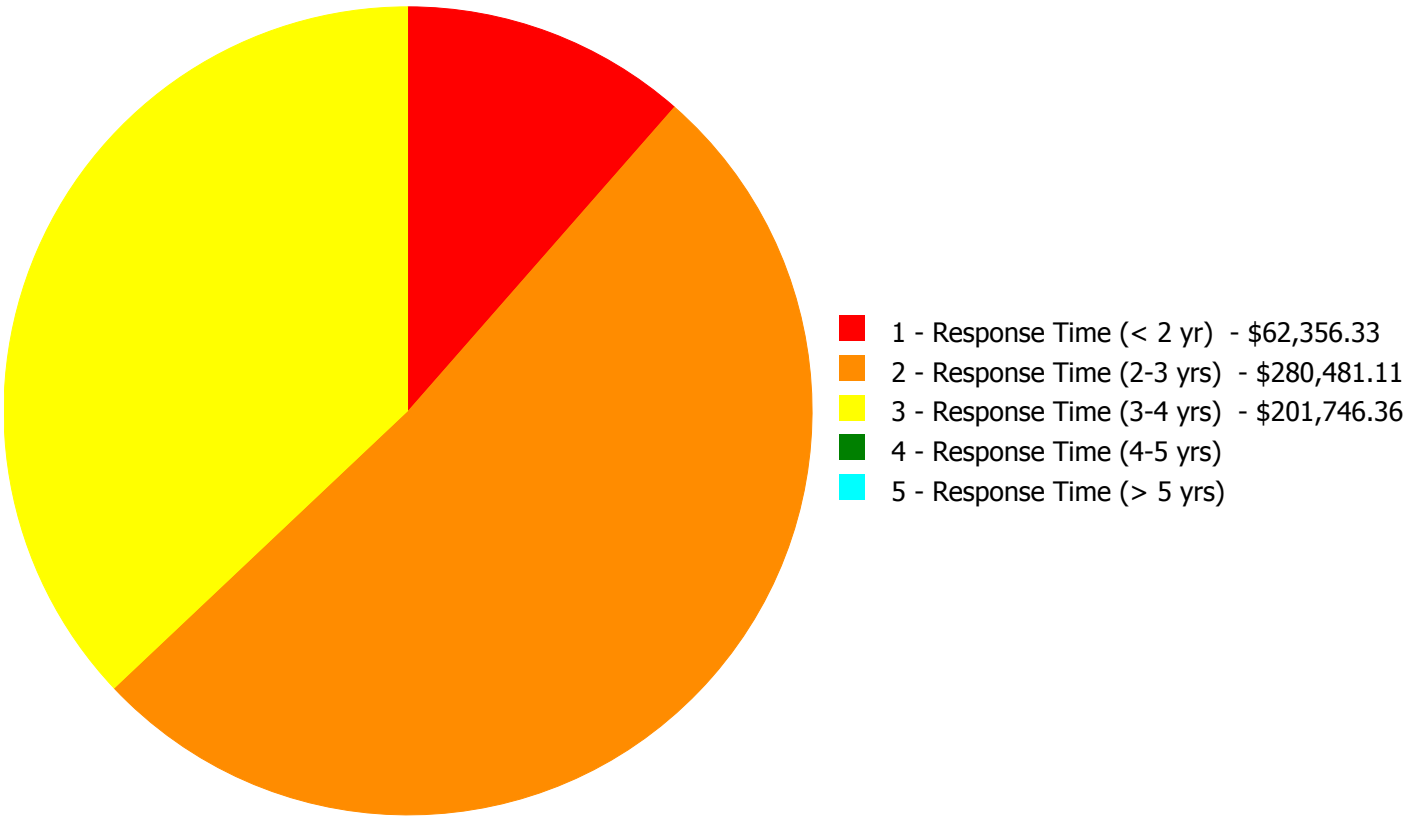
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $544,583.80

Deficiency Summary by Priority

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



Budget Estimate Total: $544,583.80

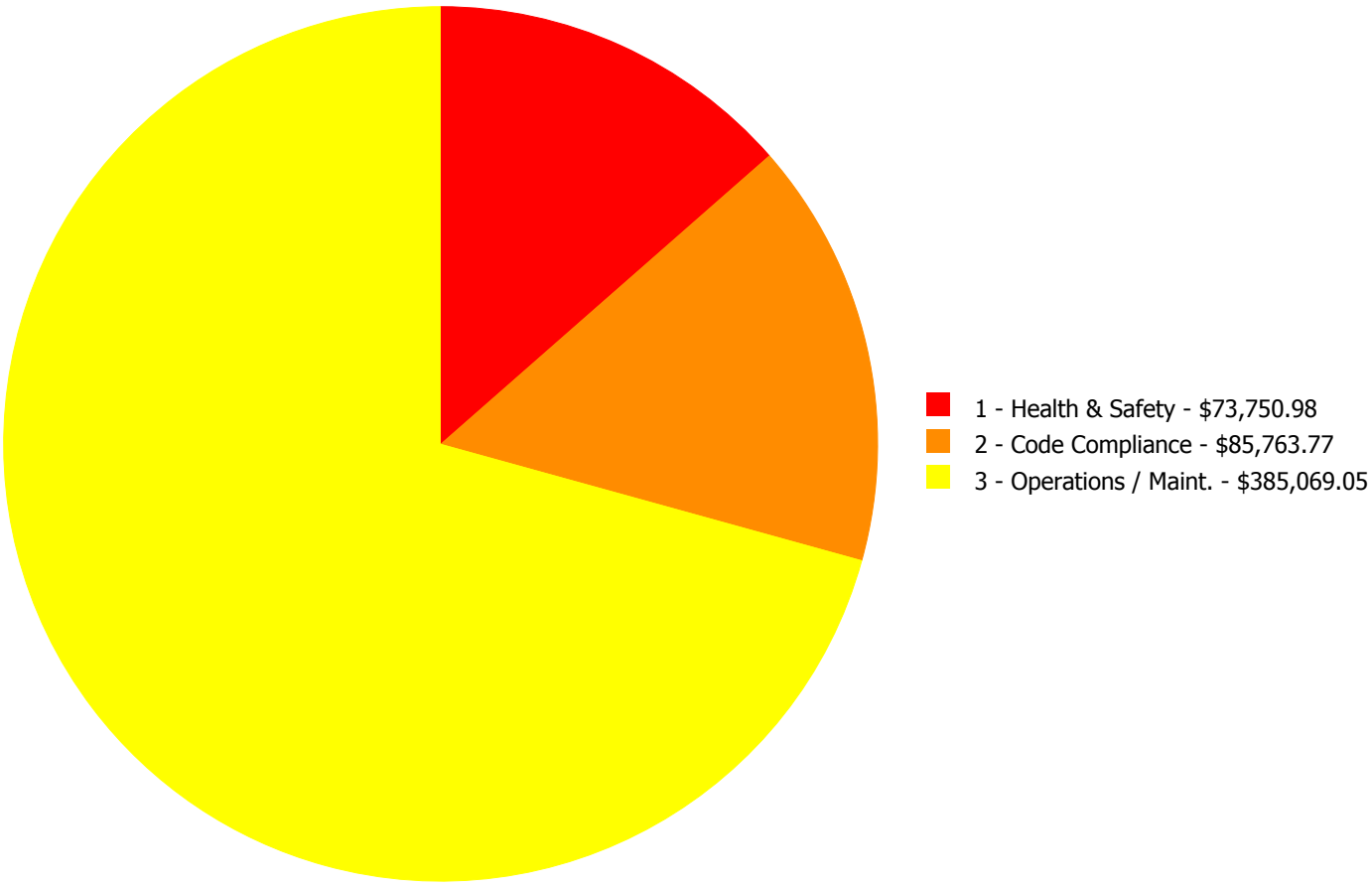
Deficiency By Priority Investment Table

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	$62,356.33	$0.00	$104,587.94	$0.00	$0.00	$166,944.27
G2040	Site Development	$0.00	$280,481.11	$23,407.44	$0.00	$0.00	$303,888.55
G4030	Site Communications & Security	$0.00	$0.00	$73,750.98	$0.00	$0.00	$73,750.98
	Total:	$62,356.33	$280,481.11	$201,746.36	$0.00	$0.00	$544,583.80

Deficiency Summary by Category

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



Budget Estimate Total: $544,583.80

Deficiency Details by Priority

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

Priority 1 - Response Time (< 2 yr):

System: G2030 - Pedestrian Paving

Location: North side entrance

Distress: Accessibility

Category: 2 - Code Compliance

Priority: 1 - Response Time (< 2 yr)

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

Qty: 48.00

Unit of Measure: L.F.

Estimate: $62,356.33

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Provide an accessible entrance on the north side of the building along Baltimore Avenue near the elevator.

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

System: G2040 - Site Development

Location: Site retaining walls

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair concrete retaining wall in poor condition including rebar doweling - insert the SF of wall area

Qty: 720.00

Unit of Measure: S.F.

Estimate: $213,554.90

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Repair damaged retaining walls

System: G2040 - Site Development

Location: Site stairs

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace on grade concrete steps - based on 6' wide steps and 6 or 12 risers - modify estimate to suit the configuration

Qty: 2.00

Unit of Measure: Flight

Estimate: $28,080.02

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Repair granite steps on the site

System: G2040 - Site Development

Location: Site stairs

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace on grade concrete steps - based on 6' wide steps and 6 or 12 risers - modify estimate to suit the configuration

Qty: 2.00

Unit of Measure: Flight

Estimate: $28,080.02

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Replace damaged concrete steps on the site

System: G2040 - Site Development

Location: Playground

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace chain link fence - 6' high

Qty: 120.00

Unit of Measure: L.F.

Estimate: $10,766.17

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Replace the damaged chain link fence atop the retaining wall and along the route to the lower playground.

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

System: G2030 - Pedestrian Paving

Location: Playgrounds

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Resurface AC pedestrian paving - grind and resurface

Qty: 29,300.00

Unit of Measure: S.F.

Estimate: $104,587.94

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Mill and overlay the asphalt surfaces of the upper and lower playground areas.

System: G2040 - Site Development

Location: Site

Distress: Inadequate

Category: 2 - Code Compliance

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

Correction: Provide signage for site - insert the anticipated number of signs

Qty: 50.00

Unit of Measure: Ea.

Estimate: $23,407.44

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Provide site directional signage

System: G4030 - Site Communications & Security

Location: Building Perimeter

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Add Video Surveillance System

Qty: 4.00

Unit of Measure: Ea.

Estimate: $73,750.98

Assessor Name: Craig Anding

Date Created: 02/08/2016

Notes: Provide outdoor surveillance CCTV cameras to the building perimeter. Approximate 4 CCTV 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

School District of Philadelphia

S130101;Harrington Annex

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):	15,000
Year Built:	1948
Last Renovation:	
Replacement Value:	$8,942,655
Repair Cost:	$4,024,127.47
Total FCI:	45.00 %
Total RSLI:	68.76 %

Description:

Facility Assessment

December 8, 2015

School District of Philadelphia

Harrington School Annex

810 S 53rd Street

Philadelphia, PA 19143

15,000 SF / 199 Students / LN 02

The Harrington School Annex is located at 810 S 53rd Street in Philadelphia, PA. It is a 15,000 sq. ft., 2-story building with a one level basement. The original building was constructed in 1948 with a subsequent small stair tower addition in 1970. Mrs. Dawn Haley Building Engineer accompanied us on our tour of the school and provided us with detailed information on the building systems and

maintenance history.

ARCHITECTURAL/STRUCTURAL

The building bears on concrete foundations and basement walls that are not showing signs of significant settlement or damage. The basement floor is slab on grade. The main structure consists of cast-in-place concrete columns, beams and concrete floor slabs. The roof structure consists of concrete slab supported by the main structural frame. The building envelope is brick masonry. The front of the building has decorative stonework around entrance. Brick masonry is in fair condition with evidence of repairs/ maintenance.

The original wood windows and frames installed in 1948 were replaced in the early 1980's with colored extruded aluminum single hung windows single glazed with acrylic panes with insect screens. Typically the upper pane is fitted with opaque material. All windows are generally in fair condition. Much of the glazing has hazed with age. First floor windows are fitted with security grilles. Exterior doors are typically hollow metal with glazing, in fair condition.

The roof is covered with a membrane of modified bituminous roll roofing built-up with bonded seams installed in approximately 1995. Scuppers and downspouts handle overflow from failed roof drains. The roof is in poor condition with failing seams and flashings. Several leaks were reported by the maintenance staff and evidence of roof leaks was observed through damaged interior finishes. No permanent access is provided to reach the roof of the building. A fixed interior metal ladder should be installed on the second floor of the stair tower with a locking access hatch at the roof level.

Partition walls are typically painted plaster or CMU. However, the inside surfaces of the exterior walls are damaged by water infiltration at the window heads and bases in two spaces on 1st and in the boiler room. Interior classroom and office doors are solid-core wood with hollow metal frames with glazed openings and knob operators. The original doors were replaced in 1970. Doors are not recessed and swing into the exit corridors.

Stair construction is steel pan with cast iron non-slip treads in fair condition. Handrails are galvanized steel at the exit stair towers and painted steel at the main stair towers. Handrails do not meet modern codes for configuration with improper cross-section at rails, no extensions at landings, and improper mounting height. Barrier rails at landings and stairs are too low.

Generally, the building is not accessible per ADA requirements. No ramps or lifts are provided at building entries. The building does not have a passenger / service elevator as it is considered not essential due to the building function.

The restrooms have painted concrete floors. Most of the floors are VAT that is generally in good condition including the main office, lunchrooms and classrooms. The VAT floors have been replaced with VCT or covered with carpet in the two kindergarten classrooms on the 1st Floor and two classrooms on the 2nd floor. The VAT floors should be removed and replaced throughout.

Classroom, corridor and office ceilings are 2x4 suspended acoustical panels in fair condition. Some water damaged tiles were observed, but these problems are reported to be fixed. The suspension system is typically yellowed. The 12" ACT ceiling on a suspended grid in the lunchroom should be replaced as it is missing tiles and has been painted several times to hide water damage. The ceiling of the food service is similar. Services areas have exposed painted structure.

Fittings include: baked enamel toilet accessories in poor condition; interior identifying signage is typically directly painted on wall or door surfaces and is inadequate. Shelving should be provided for the Faculty Workroom as it has changed to a storage space. Kitchen equipment is in fair condition. Furnishings include fixed casework in classrooms that are generally in fair to poor condition and window shades that are generally in good condition.

MECHANICAL

Fixtures are multiple vintage and are in terrible condition. About half the lavatory faucets are inoperable, and the ground floor girls' toilet had one faucet that would not stop flowing. Cast iron ones are rusting. Faucets have separate spouts for hot and cold. Some faucets leak, and some drains back up. The lunch room lavatory was infested with fruit flies. Water closets are badly stained and one was out of order while another had a broken seat. Service sinks are wall hung, cast iron with stainless steel rim and vacuum breaker spouts. They are in just as bad condition as everything else. Fountains are wall mounted, refrigerated, past their service life, and non -accessible. All the plumbing fixtures should be replaced.

Water service enters the building basement through a 4 inch line from Thomas St. There is a compound water meter but no backflow preventer. A back flow preventer should be installed for the building. The connection to the hydronic system has a backflow preventer. A Bradford White 40 gallon tank water heater was installed in 2014 with a ¼ HP Grundfos circulation pump. While the girls' lavatory hot water faucet was running uncontrollably during the inspection, the water was not clear, but yellow tinted. The

entire potable water piping in the building should be replaced.

Sanitary drain piping is a combination of threaded galvanized steel and repair sections of hubless cast iron and copper with banded couplings. The steel pipes are rusting badly at their threads. The parts of the piping that have not already been repaired are likely to require repair soon based on their estimated age and visual appearance. The sanitary drain piping should be replaced entirely.

Rain water drains through perimeter gutters to downspout pipes at each corner of the building. Downspouts transition to hub and spigot cast iron pipes at ground level and go underground. The rain water drain system should be serviceable for 10 - 15 more years.

The building is heated hydronically via unit vents for the classrooms and radiators elsewhere.

There is one Weil Mclain model BG-684W boiler installed in 1967, 655 MBH (20 HP) capacity with Gordon Piatt burner model RC-CO-05 burning natural gas only. The boiler has exceeded its expected life span by 14 years and should be replaced. Gas service enters the building in a 2 inch line from Thomas Ave. The boiler has a draft damper on its exhaust, but it is damaged and not balanced properly. The original chimney is no longer used for the boiler, but instead a replacement metal chimney was installed along the east side of the building. This chimney is severely rusty and should be replaced when the boiler is.

The building has no cooling generating equipment. A 35 ton air conditioning system should be installed for the entire building.

Classrooms are heated and ventilated by unit ventilators. They appear to be 1960s' vintage, likely installed when the boiler was. There was no control for their heat output, only fan on or off. One had a fan that didn't run and another had a cover fall off. They also have exceeded their service life and lack cooling coils, so they should be replaced when the building HVAC is updated. Unit vent excess air exhausts to the hallways where a vertical duct chase leads to the roof. Food service has an electric convection oven so no exhaust hood is needed, nor is one present. Toilet rooms have sheet metal exhaust ducts, but roof access was unavailable during the inspection so the duct termination is unknown. There were odor problems present, so exhaust fans should be installed or upgraded. Heating water is circulated by two base mounted 1.5 HP pumps. One pump is much newer than the other and the old one should be replaced due to age. Hydronic pipe is steel. There is a pressure vessel expansion tank for the hydronic water manufactured in 1967. It should be replaced due to age with the piping.

Areas besides classrooms, e.g. toilet rooms and storage areas, are heated by finned tube convection units. These units are dented, rusty, and beyond their service life, so they should be replaced.

The building has pneumatic controls, but they are inoperative and obsolete. Classroom thermostats were physically damaged. Teachers stated that units were either on or off with no modulation. The controls should be upgraded to modern DDC when other HVAC systems are renovated.

The annex building does not have standpipes or sprinklers. A fire protection sprinkler system should be installed to increase occupant safety. A fire pump may be required depending on the available city water pressure.

ELECTRICAL

An overhead lateral service on the east side of this facility serves this school. The electrical service is located in the basement. The basement houses the FEDERAL PACIFIC main disconnect switch, utility metering PECO 9MLU2912 and PENN & BOX 200A, 120/240V distribution section. The electrical service appears that is reaching its useful service life and has no extra capacity for expansion or new Heating, Ventilation, Air Conditioning (HVAC) system. The electrical service needs to be upgraded. The new service will be 120/208V, 3 phase power 600A and will be located in the vicinity of the existing electrical service. The new electrical service will feed HVAC (Heating, Ventilation and Air Conditioning) equipment, receptacles, lighting and other smaller loads.

There are 120/240V panel-boards in each floor for lighting and receptacles, most of panelboards appears that are reaching their useful service life. Since the electrical service is going to be upgraded and the voltage system will change. Replace existing panelboards.

Since this facility is mainly dedicated to preschool education the number of receptacles in each of the classrooms is adequate.

Classrooms are illuminated with 2'x4' recessed fluorescent fixtures, corridors are illuminated with a combination of 2'x4' and 2'x2' recessed fluorescent fixtures, mechanical rooms are illuminated with industrial/strip fluorescent fixtures. Fluorescent fixtures are provided with T-12 lamps. T-12 lamps are becoming more expensive, difficult to find and consume more energy. Therefore replace fluorescent fixtures with T-12 lamps with fluorescent fixtures with T-8 lamps.

The Fire Alarm system is most probably manufactured by S.H. Couch Inc., nameplate of the control panel was not available. The fire

alarm system consists of pull station at exit doors and fire bells at corridors. The fire alarm system is approximately 30 years old and does not meet current code and needs to be replaced. Provide a complete fire alarm system with audio/visual devices in classrooms and public areas, smoke detectors in unoccupied areas and pull station at each exit doors.

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

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

The present clocks and control panel are manufactured by MidWest Time Control. Clock system is old and clocks do not work, most of the classrooms are provided with stand-alone clocks. Replace clock system with wireless, synchronized, battery operated system.

There is not television system.

The security system consists of (3) surveillance CCTV cameras at the basement, (5) surveillance CCTV cameras at the first floor, and motion sensors at the basement, first and second floor. There was no indication that additional surveillance CCTV cameras or motion sensors are required. System is approximately 8 years old and is expected to provide 7 more years of useful service life.

This facility is not provided with emergency power system.

During the assessment, we did not have access to the IT room. School district standard is to provide adequate UPS in the IT room.

The emergency lighting is obtained with wall mounted lighting fixtures at the exit pathways. Exit signs are located at each exit doors and corridors. There was no indication that additional emergency lighting fixtures are required.

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

There are outdoor wall mounted lighting fixtures illuminating the building perimeter. There was no indication that additional lighting fixtures are required.

There are three outdoor surveillance CCTV cameras. Add more outdoor surveillance CCTV cameras to provide a complete coverage of the building perimeter.

There is not playground area therefore outdoor loud speaker is not required.

GROUNDS SYSTEMS

Faculty/staff parking for 10 cars is available at the main entrance with a gate from South 53rd Street. An asphalt play area is provided at the rear of the building. Asphalt is in fair to poor condition with significant cracking present. Pedestrian paving is concrete, in serviceable condition with some damaged areas. There are no accessible entrances on the grounds.

The metal picket fence along the pedestrian sidewalk is in good condition, but the chain link fence along two sides of the playground is damaged and in poor condition. Double wide gates are installed to access the play area and parking at the main entry. The site has no features like basketball backboards, bicycle racks or a flagpole.

Landscaping consists of two small lawn areas with planting area on the short sides of the building. Street trees are located in the sidewalk that surrounds the building.

RECOMMENDATIONS:

- Replace failing roofing system including insulation, flashing, counter flashing, reglets and coping
- Provide a fixed interior metal ladder on the second floor of the stair tower with a locking access hatch at the roof level.
- Replace single pane exterior windows
- Replace interior classroom doors and provide recess to minimize swing into corridor.
- Provide adequate interior directional signage
- Repair and paint the inside plaster surfaces of the exterior walls damaged by water infiltration at the window heads and bases

in two spaces on 1st and in the boiler room.
- Remove the VAT floors and replace with VCT throughout the building.
- Replace damaged acoustical ceiling panels occurring throughout the building. Clean or paint existing grid.
- Replace the damaged metal toilet partitions.
- Replace stairway handrails with code compliant handrails.
- Mill and overlay the asphalt surfaces of the parking and playground areas.
- Replace the damaged chain link fence along two sides of the playground.

MECHANICAL

- Replace all water closets due to appearance and damage, 16
- Replace all urinals due to age and appearance, 5
- Replace all lavatories due to appearance, 19
- Replace service sinks due to appearance, 3
- Replace all fountains with accessible units, 5
- Install 4 inch backflow preventer for entire building
- Replace domestic water plumbing for entire building
- Replace sanitary drain pipes due to age
- Replace boiler due to age, 20 HP
- Replace boiler chimney and draft damper due to rust damage
- Install 35 ton air conditioning system for entire building, 10,500 s.f.
- Replace unit vents due to age and lack of cooling coils, 12
- Repair, install, or upgrade rooftop toilet room exhaust fan, 1
- Replace base mounted hydronic circulation pump, 1.5 HP
- Replace convectors, 120 l.f.
- Replace obsolete pneumatic controls with DDC
- Install a fire protection sprinkler system, including fire pump if needed

ELECTRICAL

- Provide a new electrical service 120/208V, 3 phase power, 600 Amperes.
- Replace the entire distribution system with new panels and new wiring/conduits. Approximate (4) 208/120V panel boards.
- Replace fluorescent fixtures with T-12 lamps with fluorescent fixtures with T-8 lamps. Approximate 200 fixtures.
- Provide new fire alarm system. Approximate 20 devices.
- Replace clock system with wireless, synchronized, battery operated, clock system. Approximate 20 clocks.
- Prepare a study to determine if the air terminals mounted on the chimney provide the proper protection to the school building.
- Provide outdoor surveillance CCTV cameras to the building exterior for full coverage of the perimeter. Approximate 3 CCTV cameras.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 3
Status:	Accepted by SDP	Team:	Tm 3
Site ID:	S130101		

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	33.00 %	0.00 %	$0.00
A20 - Basement Construction	33.00 %	0.00 %	$0.00
B10 - Superstructure	33.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	54.78 %	56.96 %	$397,482.62
B30 - Roofing	110.00 %	87.22 %	$190,030.41
C10 - Interior Construction	48.84 %	49.66 %	$169,921.25
C20 - Stairs	33.00 %	295.05 %	$56,650.37
C30 - Interior Finishes	90.80 %	51.58 %	$358,748.24
D20 - Plumbing	103.42 %	72.56 %	$442,663.14
D30 - HVAC	110.38 %	91.00 %	$1,518,391.37
D40 - Fire Protection	105.71 %	158.77 %	$214,581.71
D50 - Electrical	98.03 %	58.37 %	$514,616.11
E10 - Equipment	42.86 %	0.00 %	$0.00
E20 - Furnishings	37.50 %	0.00 %	$0.00
G20 - Site Improvements	34.03 %	28.53 %	$108,339.28
G40 - Site Electrical Utilities	33.33 %	37.48 %	$52,702.97
Totals:	**68.76 %**	**45.00 %**	**$4,024,127.47**

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)
B130101;Harrington Annex	15,000	45.87	$243,001.45	$1,821,441.96	$626,725.68	$526,203.72	$645,712.41
G130101;Grounds	24,200	30.95	$0.00	$23,326.69	$137,715.56	$0.00	$0.00
Total:		**45.00**	**$243,001.45**	**$1,844,768.65**	**$764,441.24**	**$526,203.72**	**$645,712.41**

Deficiencies By Priority

Budget Estimate Total: $4,024,127.47

Executive Summary

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

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

Function:	Annex
Gross Area (SF):	15,000
Year Built:	1948
Last Renovation:	
Replacement Value:	$8,422,299
Repair Cost:	$3,863,085.22
Total FCI:	45.87 %
Total RSLI:	70.92 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B130101
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S130101		

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	33.00 %	0.00 %	$0.00
A20 - Basement Construction	33.00 %	0.00 %	$0.00
B10 - Superstructure	33.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	54.78 %	56.96 %	$397,482.62
B30 - Roofing	110.00 %	87.22 %	$190,030.41
C10 - Interior Construction	48.84 %	49.66 %	$169,921.25
C20 - Stairs	33.00 %	295.05 %	$56,650.37
C30 - Interior Finishes	90.80 %	51.58 %	$358,748.24
D20 - Plumbing	103.42 %	72.56 %	$442,663.14
D30 - HVAC	110.38 %	91.00 %	$1,518,391.37
D40 - Fire Protection	105.71 %	158.77 %	$214,581.71
D50 - Electrical	98.03 %	58.37 %	$514,616.11
E10 - Equipment	42.86 %	0.00 %	$0.00
E20 - Furnishings	37.50 %	0.00 %	$0.00
Totals:	**70.92 %**	**45.87 %**	**$3,863,085.22**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
A1010	Standard Foundations	$24.32	S.F.	15,000	100	1948	2048		33.00 %	0.00 %	33			$364,800
A1030	Slab on Grade	$15.51	S.F.	15,000	100	1948	2048		33.00 %	0.00 %	33			$232,650
A2010	Basement Excavation	$13.07	S.F.	15,000	100	1948	2048		33.00 %	0.00 %	33			$196,050
A2020	Basement Walls	$23.02	S.F.	15,000	100	1948	2048		33.00 %	0.00 %	33			$345,300
B1010	Floor Construction	$92.20	S.F.	15,000	100	1948	2048		33.00 %	0.00 %	33			$1,383,000
B1020	Roof Construction	$24.11	S.F.	15,000	100	1948	2048		33.00 %	0.00 %	33			$361,650
B2010	Exterior Walls	$31.22	S.F.	15,000	100	1948	2048		33.00 %	0.83 %	33		$3,883.38	$468,300
B2020	Exterior Windows	$13.63	S.F.	15,000	40	1948	1988	2057	105.00 %	192.52 %	42		$393,599.24	$204,450
B2030	Exterior Doors	$1.67	S.F.	15,000	25	1948	1973	2028	52.00 %	0.00 %	13			$25,050
B3010105	Built-Up	$37.76	S.F.	5,500	20	1948	1968	2037	110.00 %	89.73 %	22		$186,351.08	$207,680
B3010120	Single Ply Membrane	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.68	S.F.	15,000	20	1948	1968	2037	110.00 %	36.07 %	22		$3,679.33	$10,200
C1010	Partitions	$14.93	S.F.	15,000	100	1948	2048		33.00 %	0.00 %	33			$223,950
C1020	Interior Doors	$3.76	S.F.	15,000	40	1948	1988	2057	105.00 %	250.47 %	42		$141,262.64	$56,400
C1030	Fittings	$4.12	S.F.	15,000	40	1948	1988	2037	55.00 %	46.37 %	22		$28,658.61	$61,800
C2010	Stair Construction	$1.28	S.F.	15,000	100	1948	2048		33.00 %	295.05 %	33		$56,650.37	$19,200

Site Assessment Report - B130101;Harrington Annex

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3010230	Paint & Covering	$16.81	S.F.	15,000	10	1948	1958	2028	130.00 %	6.80 %	13		$17,134.15	$252,150
C3010231	Vinyl Wall Covering	$0.00	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$0.00	S.F.		30				0.00 %	0.00 %				$0
C3020411	Carpet	$7.30	S.F.		10				0.00 %	0.00 %				$0
C3020412	Terrazzo & Tile	$75.52	S.F.		50				0.00 %	0.00 %				$0
C3020413	Vinyl Flooring	$9.68	S.F.	13,125	20	1948	1968	2037	110.00 %	137.28 %	22		$174,416.68	$127,050
C3020414	Wood Flooring	$22.27	S.F.		25				0.00 %	0.00 %				$0
C3020415	Concrete Floor Finishes	$0.97	S.F.	1,875	50	1948	1998	2028	26.00 %	0.00 %	13			$1,819
C3030	Ceiling Finishes	$20.97	S.F.	15,000	25	1948	1973	2028	52.00 %	53.15 %	13		$167,197.41	$314,550
D2010	Plumbing Fixtures	$31.58	S.F.	15,000	35	1948	1983	2052	105.71 %	51.08 %	37		$241,954.20	$473,700
D2020	Domestic Water Distribution	$2.90	S.F.	15,000	25	1948	1973	2042	108.00 %	292.24 %	27		$127,122.70	$43,500
D2030	Sanitary Waste	$2.90	S.F.	15,000	25	1948	1973	2042	108.00 %	169.16 %	27		$73,586.24	$43,500
D2040	Rain Water Drainage	$3.29	S.F.	15,000	30	1948	1978	2037	73.33 %	0.00 %	22			$49,350
D3020	Heat Generating Systems	$18.67	S.F.	15,000	35	1948	1983	2052	105.71 %	72.89 %	37		$204,123.83	$280,050
D3030	Cooling Generating Systems	$24.48	S.F.	15,000	30			2047	106.67 %	83.52 %	32		$306,695.28	$367,200
D3040	Distribution Systems	$42.99	S.F.	15,000	25	1948	1973	2042	108.00 %	114.58 %	27		$738,901.22	$644,850
D3050	Terminal & Package Units	$11.60	S.F.	15,000	20	1948	1968	2042	135.00 %	0.00 %	27			$174,000
D3060	Controls & Instrumentation	$13.50	S.F.	15,000	20	1948	1968	2037	110.00 %	132.68 %	22		$268,671.04	$202,500
D4010	Sprinklers	$8.02	S.F.	15,000	35			2052	105.71 %	178.37 %	37		$214,581.71	$120,300
D4020	Standpipes	$0.99	S.F.	15,000	35			2052	105.71 %	0.00 %	37			$14,850
D5010	Electrical Service/Distribution	$9.70	S.F.	15,000	30	1980	2010	2047	106.67 %	151.03 %	32		$219,745.89	$145,500
D5020	Lighting and Branch Wiring	$34.68	S.F.	15,000	20	1980	2000	2037	110.00 %	33.13 %	22		$172,367.87	$520,200
D5030	Communications and Security	$12.99	S.F.	15,000	15	1980	1995	2025	66.67 %	50.42 %	10		$98,252.53	$194,850
D5090	Other Electrical Systems	$1.41	S.F.	15,000	30	1980	2010	2025	33.33 %	114.66 %	10		$24,249.82	$21,150
E1020	Institutional Equipment	$4.82	S.F.	15,000	35	1948	1983	2030	42.86 %	0.00 %	15			$72,300
E1090	Other Equipment	$11.10	S.F.	15,000	35	1948	1983	2030	42.86 %	0.00 %	15			$166,500
E2010	Fixed Furnishings	$2.13	S.F.	15,000	40	1948	1988	2030	37.50 %	0.00 %	15			$31,950
								Total	**70.92 %**	**45.87 %**			**$3,863,085.22**	**$8,422,299**

System Notes

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

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

Note: Paint 100%

System: D5010 - Electrical Service/Distribution

Note: Phase converter 15KVA

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:	**$3,863,085**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$319,315**	**$4,182,400**
*** 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	$3,883	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,883**
B2020 - Exterior Windows	$393,599	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$393,599**
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	$186,351	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$186,351**
B3010120 - Single Ply Membrane	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010130 - Preformed Metal Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010140 - Shingle & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3020 - Roof Openings	$3,679	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,679**
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**

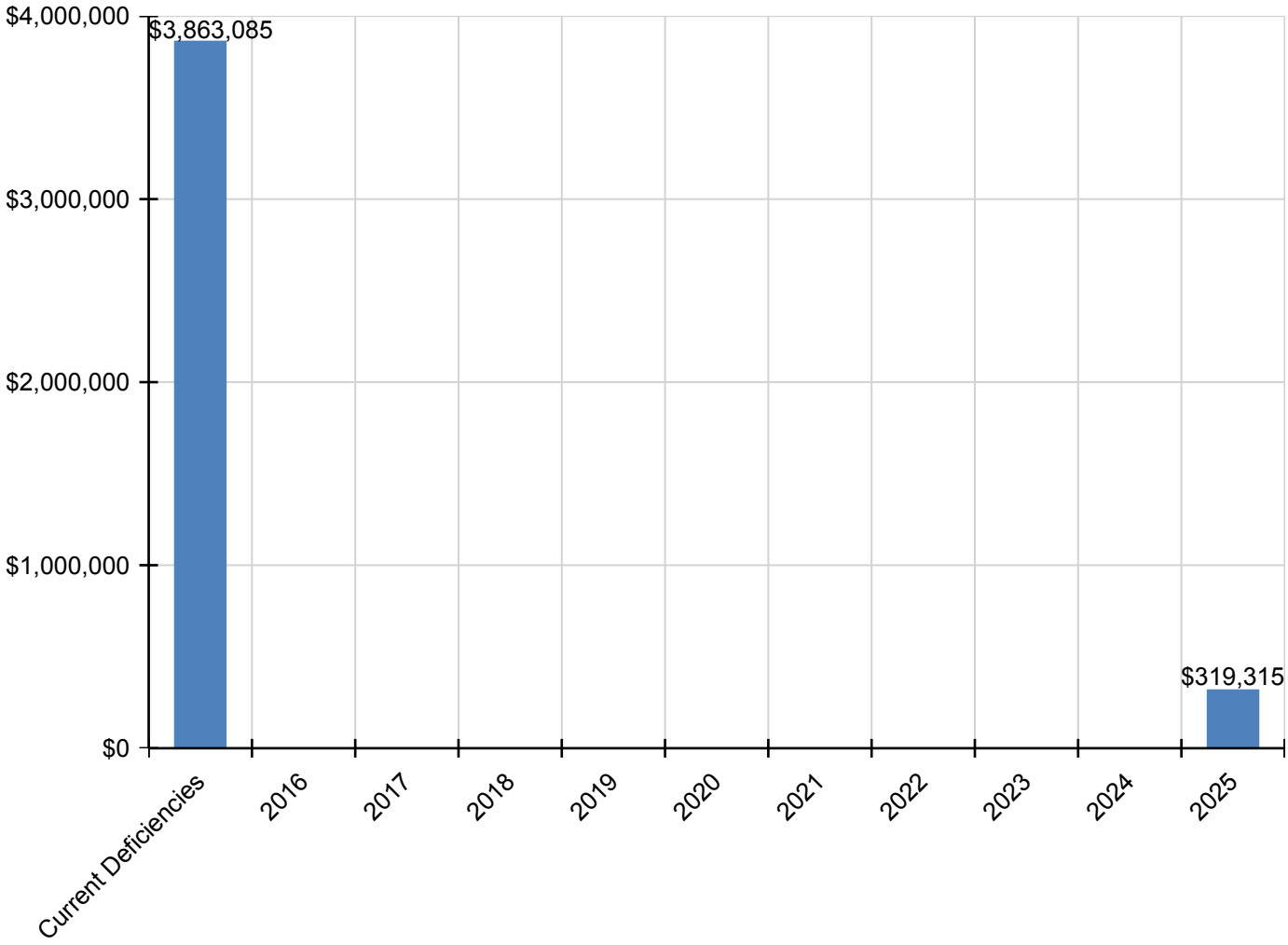
C1020 - Interior Doors	$141,263	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$141,263**
C1030 - Fittings	$28,659	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$28,659**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$56,650	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$56,650**
C30 - Interior Finishes	$0	$0	$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	$17,134	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$17,134**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$174,417	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$174,417**
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	$167,197	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$167,197**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$241,954	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$241,954**
D2020 - Domestic Water Distribution	$127,123	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$127,123**
D2030 - Sanitary Waste	$73,586	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$73,586**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$204,124	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$204,124**
D3030 - Cooling Generating Systems	$306,695	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$306,695**
D3040 - Distribution Systems	$738,901	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$738,901**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$268,671	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$268,671**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$214,582	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$214,582**
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	$219,746	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$219,746**

D5020 - Lighting and Branch Wiring	$172,368	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$172,368**
D5030 - Communications and Security	$98,253	$0	$0	$0	$0	$0	$0	$0	$0	$0	$288,048	**$386,301**
D5090 - Other Electrical Systems	$24,250	$0	$0	$0	$0	$0	$0	$0	$0	$0	$31,266	**$55,516**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

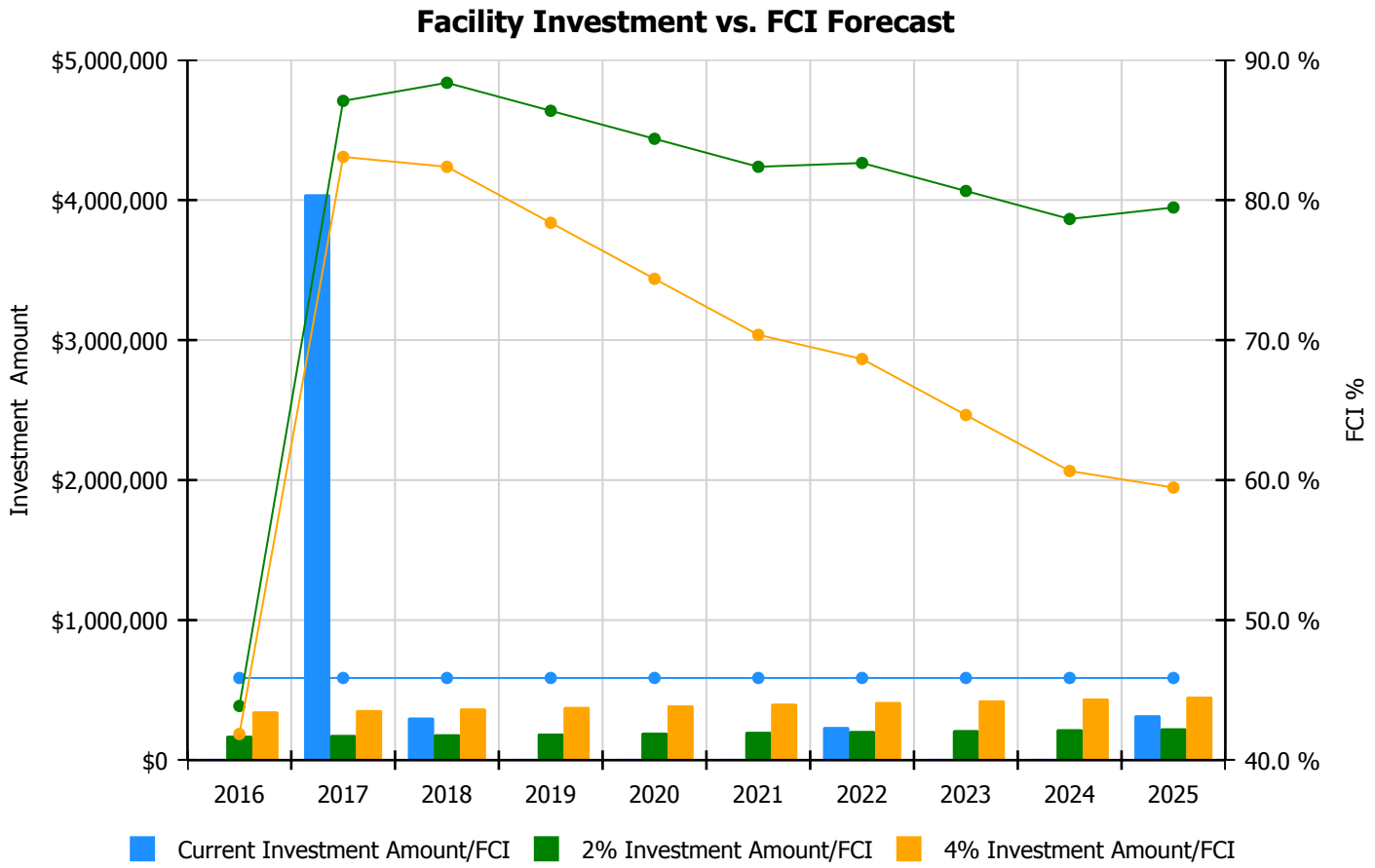
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

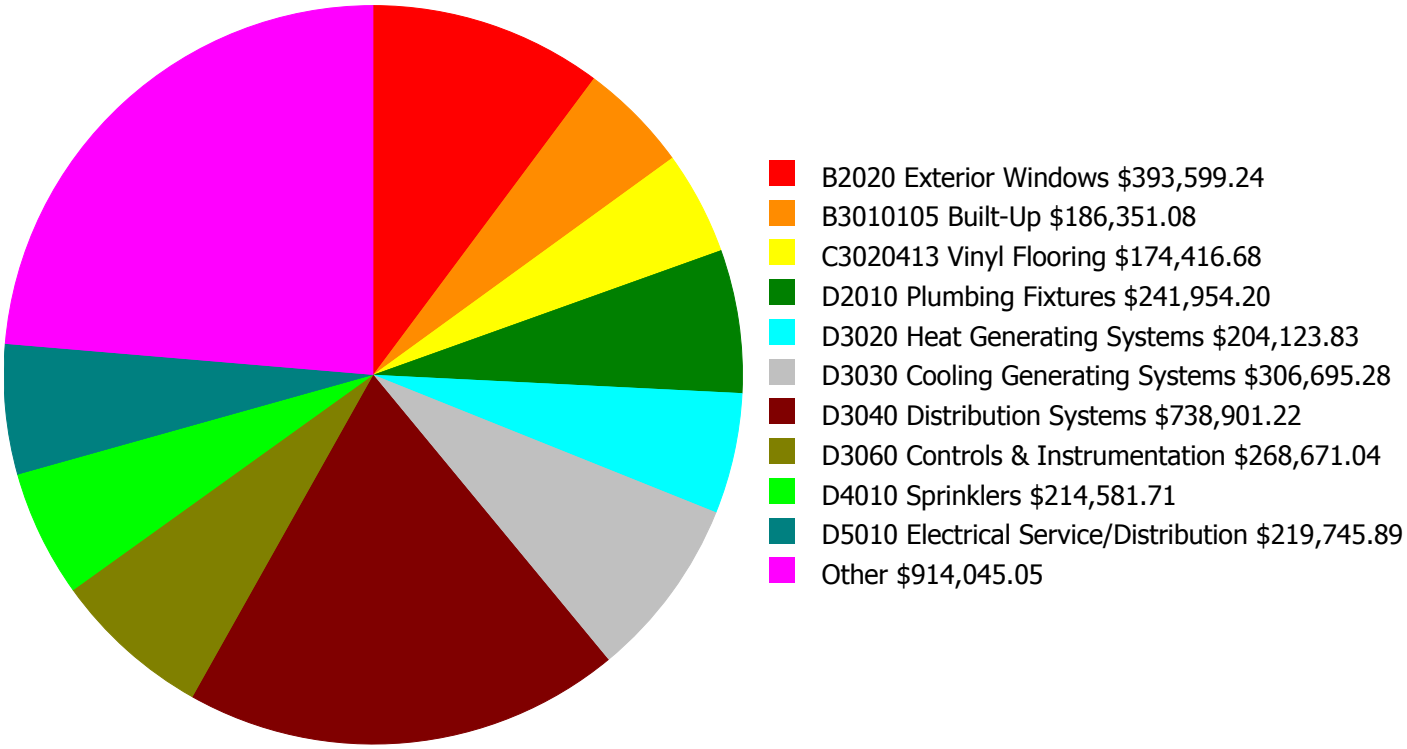
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 45.87%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$173,499.00	43.87 %	$346,999.00	41.87 %
2017	$4,040,038	$178,704.00	87.08 %	$357,409.00	83.08 %
2018	$303,084	$184,065.00	88.38 %	$368,131.00	82.38 %
2019	$0	$189,587.00	86.38 %	$379,175.00	78.38 %
2020	$0	$195,275.00	84.38 %	$390,550.00	74.38 %
2021	$0	$201,133.00	82.38 %	$402,267.00	70.38 %
2022	$235,398	$207,167.00	82.65 %	$414,335.00	68.65 %
2023	$0	$213,382.00	80.65 %	$426,765.00	64.65 %
2024	$0	$219,784.00	78.65 %	$439,568.00	60.65 %
2025	$319,315	$226,377.00	79.47 %	$452,755.00	59.47 %
Total:	**$4,897,834**	**$1,988,973.00**		**$3,977,954.00**	

Deficiency Summary by System

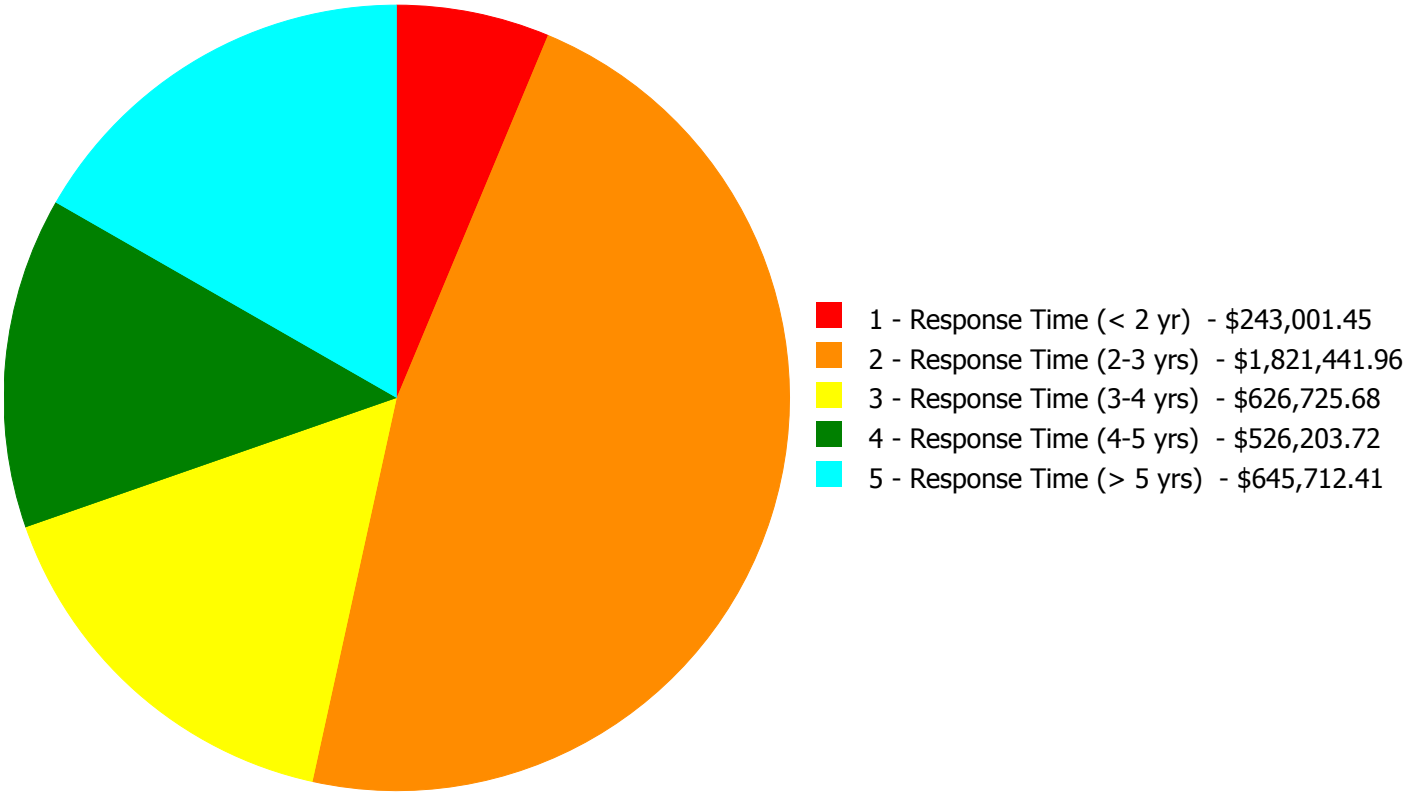
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $3,863,085.22

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: $3,863,085.22

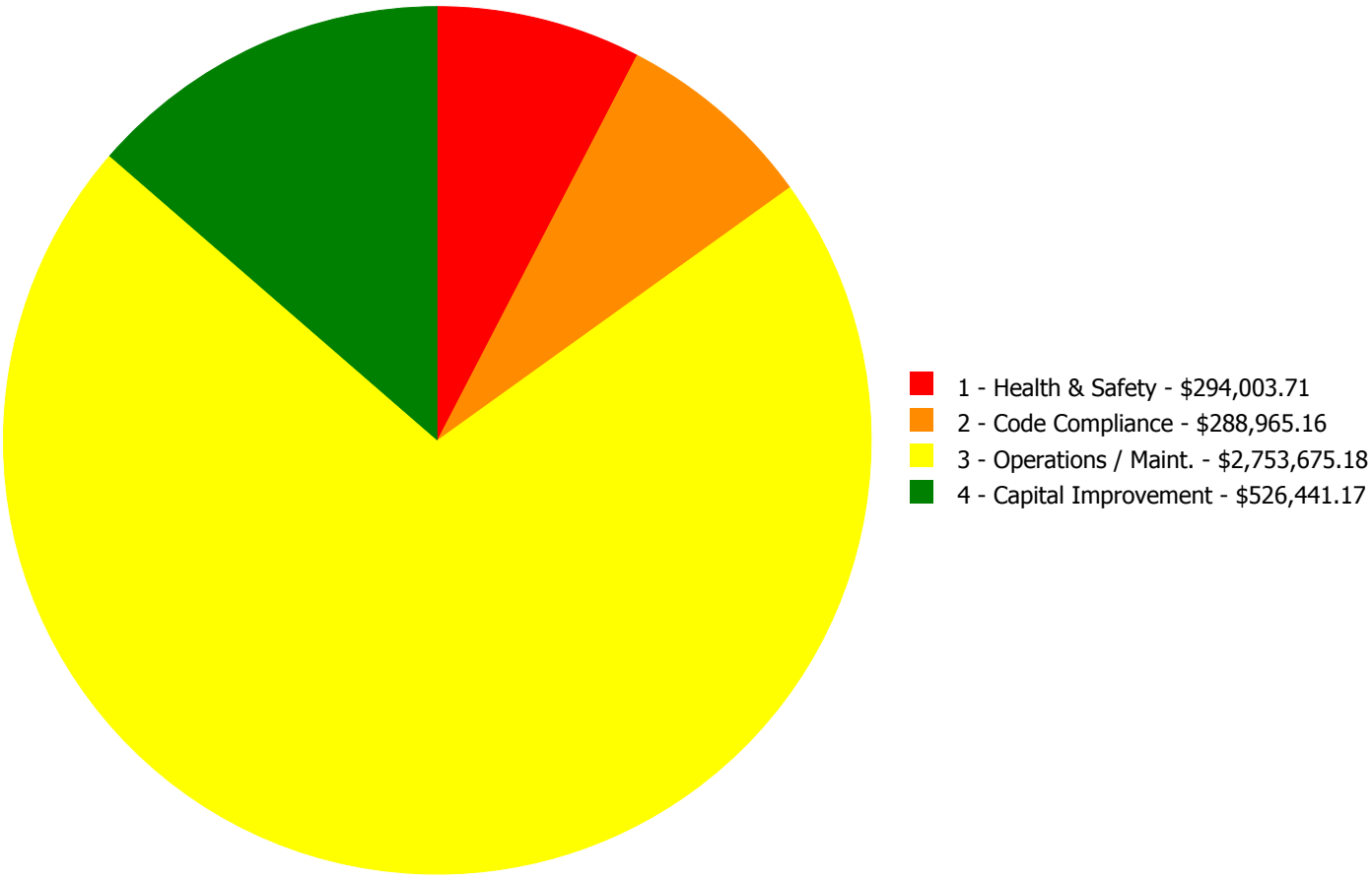
Deficiency By Priority Investment Table

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	$3,883.38	$0.00	$0.00	$0.00	$3,883.38
B2020	Exterior Windows	$0.00	$393,599.24	$0.00	$0.00	$0.00	$393,599.24
B3010105	Built-Up	$186,351.08	$0.00	$0.00	$0.00	$0.00	$186,351.08
B3020	Roof Openings	$0.00	$3,679.33	$0.00	$0.00	$0.00	$3,679.33
C1020	Interior Doors	$0.00	$141,262.64	$0.00	$0.00	$0.00	$141,262.64
C1030	Fittings	$0.00	$28,658.61	$0.00	$0.00	$0.00	$28,658.61
C2010	Stair Construction	$56,650.37	$0.00	$0.00	$0.00	$0.00	$56,650.37
C3010230	Paint & Covering	$0.00	$17,134.15	$0.00	$0.00	$0.00	$17,134.15
C3020413	Vinyl Flooring	$0.00	$174,416.68	$0.00	$0.00	$0.00	$174,416.68
C3030	Ceiling Finishes	$0.00	$167,197.41	$0.00	$0.00	$0.00	$167,197.41
D2010	Plumbing Fixtures	$0.00	$241,954.20	$0.00	$0.00	$0.00	$241,954.20
D2020	Domestic Water Distribution	$0.00	$51,112.25	$0.00	$0.00	$76,010.45	$127,122.70
D2030	Sanitary Waste	$0.00	$0.00	$73,586.24	$0.00	$0.00	$73,586.24
D3020	Heat Generating Systems	$0.00	$0.00	$137,789.55	$66,334.28	$0.00	$204,123.83
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$306,695.28	$306,695.28
D3040	Distribution Systems	$0.00	$598,544.07	$91,932.18	$0.00	$48,424.97	$738,901.22
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$268,671.04	$0.00	$268,671.04
D4010	Sprinklers	$0.00	$0.00	$0.00	$0.00	$214,581.71	$214,581.71
D5010	Electrical Service/Distribution	$0.00	$0.00	$219,745.89	$0.00	$0.00	$219,745.89
D5020	Lighting and Branch Wiring	$0.00	$0.00	$0.00	$172,367.87	$0.00	$172,367.87
D5030	Communications and Security	$0.00	$0.00	$79,422.00	$18,830.53	$0.00	$98,252.53
D5090	Other Electrical Systems	$0.00	$0.00	$24,249.82	$0.00	$0.00	$24,249.82
	Total:	$243,001.45	$1,821,441.96	$626,725.68	$526,203.72	$645,712.41	$3,863,085.22

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: $3,863,085.22

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):

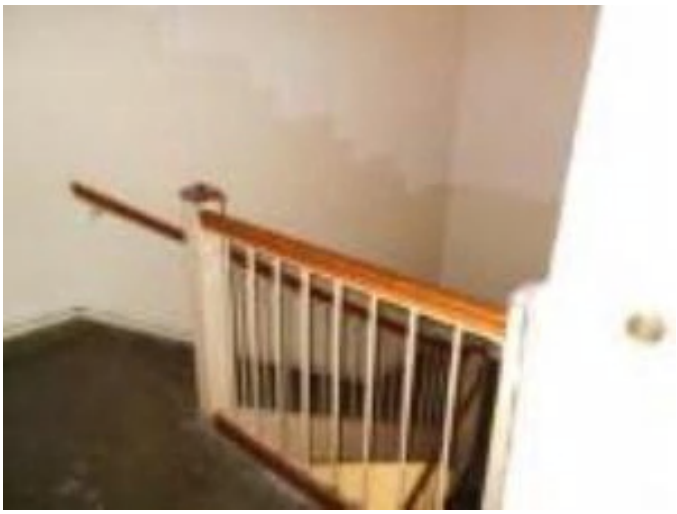
System: B3010105 - Built-Up

This deficiency has no image.

Location: Roof
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Remove and Replace Built Up Roof
Qty: 5,500.00
Unit of Measure: S.F.
Estimate: $186,351.08
Assessor Name: System
Date Created: 02/24/2016

Notes: Replace failing roofing system including insulation, flashing, counter flashing, reglets and coping - no photo - inaccessible

System: C2010 - Stair Construction



Location: Stairways
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 1 - Response Time (< 2 yr)
Correction: Replace inadequate or install proper stair railing - select appropriate material
Qty: 100.00
Unit of Measure: L.F.
Estimate: $56,650.37
Assessor Name: System
Date Created: 02/24/2016

Notes: Replace stairway handrails with code compliant handrails.

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

System: B2010 - Exterior Walls

Location: Stair tower
Distress: Accessibility
Category: 2 - Code Compliance
Priority: 2 - Response Time (2-3 yrs)
Correction: Add fixed ladders to wall
Qty: 14.00
Unit of Measure: V.L.F.
Estimate: $3,883.38
Assessor Name: System
Date Created: 02/24/2016

Notes: Provide a fixed interior metal ladder on the second floor of the stair tower with a locking access hatch at the roof level.

System: B2020 - Exterior Windows

Location: Exterior windows
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Remove and replace double slider windows
Qty: 78.00
Unit of Measure: Ea.
Estimate: $393,599.24
Assessor Name: System
Date Created: 02/24/2016

Notes: Replace single pane exterior windows

System: B3020 - Roof Openings

Location: Roof

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Replace roof hatch - pick the closest size

Qty: 1.00

Unit of Measure: Ea.

Estimate: $3,679.33

Assessor Name: System

Date Created: 02/24/2016

Notes: Provide a fixed interior metal ladder on the second floor of the stair tower with a locking access hatch at the roof level.

System: C1020 - Interior Doors

Location: Throughout the building

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Remove and replace interior doors - wood doors with wood frame - per leaf

Qty: 30.00

Unit of Measure: Ea.

Estimate: $141,262.64

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace interior classroom doors and provide recess to minimize swing into corridor.

System: C1030 - Fittings

Location: Restrooms

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace toilet partitions

Qty: 8.00

Unit of Measure: Ea.

Estimate: $20,531.24

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace the damaged metal toilet partitions.

System: C1030 - Fittings

Location: Throughout the building

Distress: Accessibility

Category: 2 - Code Compliance

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

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

Qty: 30.00

Unit of Measure: Ea.

Estimate: $8,127.37

Assessor Name: System

Date Created: 02/24/2016

Notes: Provide adequate interior directional signage

System: C3010230 - Paint & Covering

Location: First floor and boiler room

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 2,000.00

Unit of Measure: S.F.

Estimate: $17,134.15

Assessor Name: System

Date Created: 02/24/2016

Notes: Repair and paint the inside plaster surfaces of the exterior walls damaged by water infiltration at the window heads and bases in two spaces on 1st and in the boiler room.

System: C3020413 - Vinyl Flooring

Location: Throughout the building

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 11,500.00

Unit of Measure: S.F.

Estimate: $174,416.68

Assessor Name: System

Date Created: 02/24/2016

Notes: Remove the VAT floors and replace with VCT throughout the building.

System: C3030 - Ceiling Finishes

Location: Throughout the building

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace ceiling tiles only in suspended ceiling - pick the proper material

Qty: 15,000.00

Unit of Measure: S.F.

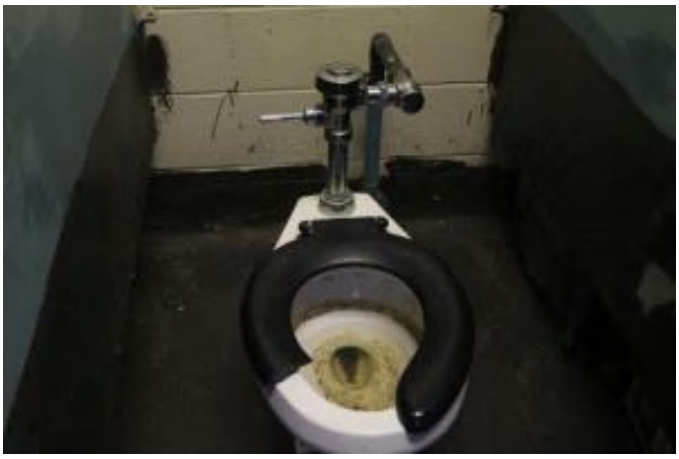
Estimate: $167,197.41

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace damaged acoustical ceiling panels occurring throughout the building. Clean or paint existing grid.

System: D2010 - Plumbing Fixtures



Location: Toilet rooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace water closet - quantify additional units

Qty: 16.00

Unit of Measure: Ea.

Estimate: $119,394.37

Assessor Name: System

Date Created: 02/18/2016

Notes: Replace all water closets due to appearance and damage

System: D2010 - Plumbing Fixtures

Location: Toilet rooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace lavatory - quantify accessible if required

Qty: 19.00

Unit of Measure: Ea.

Estimate: $83,581.28

Assessor Name: System

Date Created: 02/18/2016

Notes: Replace all lavatories due to appearance

System: D2010 - Plumbing Fixtures

Location: Service closets

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Remove and replace floor janitor or mop sink - insert the quantity

Qty: 3.00

Unit of Measure: Ea.

Estimate: $20,448.28

Assessor Name: System

Date Created: 02/18/2016

Notes: Replace all service sinks due to appearance

System: D2010 - Plumbing Fixtures

Location: Toilet rooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace wall hung urinals

Qty: 5.00

Unit of Measure: Ea.

Estimate: $18,530.27

Assessor Name: System

Date Created: 02/18/2016

Notes: Replace all urinals due to age and appearance

System: D2020 - Domestic Water Distribution

Location: Boiler room

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: 02/18/2016

Notes: Install 4 inch backflow preventer for entire building

System: D3040 - Distribution Systems

Location: Classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 12.00

Unit of Measure: Ea.

Estimate: $598,544.07

Assessor Name: System

Date Created: 02/18/2016

Notes: Replace unit vents due to age and lack of cooling coils

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

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: 15,000.00

Unit of Measure: S.F.

Estimate: $73,586.24

Assessor Name: System

Date Created: 02/18/2016

Notes: Replace sanitary drain pipes 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 (50 HP)

Qty: 0.50

Unit of Measure: Ea.

Estimate: $122,777.55

Assessor Name: System

Date Created: 02/18/2016

Notes: Replace boiler due to age

System: D3020 - Heat Generating Systems

Location: Boiler room

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair boiler

Qty: 1.00

Unit of Measure: Ea.

Estimate: $15,012.00

Assessor Name: System

Date Created: 02/18/2016

Notes: Replace boiler chimney and draft damper due to rust damage

System: D3040 - Distribution Systems

Location: Toilet rooms

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace power roof ventilator (36" dia.)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $91,932.18

Assessor Name: System

Date Created: 02/18/2016

Notes: Repair, install, or upgrade rooftop toilet room exhaust fan

System: D5010 - Electrical Service/Distribution

Location: Basement

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Replace Switchboard

Qty: 1.00

Unit of Measure: Ea.

Estimate: $111,366.18

Assessor Name: System

Date Created: 02/09/2016

Notes: Provide a new electrical service 120/208V, 3 phase power, 600 Amperes.

System: D5010 - Electrical Service/Distribution

Location: Entire Building

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Replace Electrical Distribution System (U)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $108,379.71

Assessor Name: System

Date Created: 02/09/2016

Notes: Replace the entire distribution system with new panels and new wiring/conduits. Approximate (4) 208/120V panel boards

System: D5030 - Communications and Security

Location: Entire Building
Distress: Life Safety / NFPA / PFD
Category: 1 - Health & Safety
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace fire alarm system
Qty: 1.00
Unit of Measure: S.F.
Estimate: $79,422.00
Assessor Name: System
Date Created: 02/09/2016

Notes: Provide new fire alarm system. Approximate 20 devices.

System: D5090 - Other Electrical Systems

Location: Roof
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 3 - Response Time (3-4 yrs)
Correction: Repair Lightning Protection System
Qty: 1.00
Unit of Measure: Job
Estimate: $24,249.82
Assessor Name: System
Date Created: 02/09/2016

Notes: Prepare a study to determine if the air terminals mounted on the chimney provide the proper protection to the school building.

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

System: D3020 - Heat Generating Systems

Location: Boiler room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $66,334.28

Assessor Name: System

Date Created: 02/18/2016

Notes: Replace base mounted hydronic circulation pump

System: D3060 - Controls & Instrumentation

Location: Entire building

Distress: Obsolete

Category: 3 - Operations / Maint.

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

Correction: Replace pneumatic controls with DDC (150KSF)

Qty: 15,000.00

Unit of Measure: S.F.

Estimate: $268,671.04

Assessor Name: System

Date Created: 02/18/2016

Notes: Replace obsolete pneumatic controls with DDC

System: D5020 - Lighting and Branch Wiring

Location: Entire Building
Distress: Obsolete
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Add Lighting Fixtures
Qty: 200.00
Unit of Measure: Ea.
Estimate: $172,367.87
Assessor Name: System
Date Created: 02/09/2016

Notes: Replace fluorescent fixtures with T-12 lamps with fluorescent fixtures with T-8 lamps. Approximate 200 fixtures.

System: D5030 - Communications and Security

Location: Entire Building
Distress: Obsolete
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Provide wireless GPS clock system
Qty: 1.00
Unit of Measure: LS
Estimate: $18,830.53
Assessor Name: System
Date Created: 02/09/2016

Notes: Replace clock system with wireless, synchronized, battery operated, clock system. Approximate 20 clocks.

Priority 5 - Response Time (> 5 yrs):

System: D2020 - Domestic Water Distribution

Location: Entire building
Distress: Appearance
Category: 3 - Operations / Maint.
Priority: 5 - Response Time (> 5 yrs)
Correction: Replace domestic water piping (75 KSF)
Qty: 15,000.00
Unit of Measure: S.F.
Estimate: $76,010.45
Assessor Name: System
Date Created: 02/18/2016

Notes: Replace domestic water plumbing for entire building

System: D3030 - Cooling Generating Systems

This deficiency has no image.

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. (+25KSF)
Qty: 10,500.00
Unit of Measure: S.F.
Estimate: $306,695.28
Assessor Name: System
Date Created: 02/18/2016

Notes: Install 35 ton air conditioning system for entire building

---

System: D3040 - Distribution Systems

Location: Toilet rooms, storage areas

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace finned tube radiation terminals (per 100 LF)

Qty: 120.00

Unit of Measure: L.F.

Estimate: $48,424.97

Assessor Name: System

Date Created: 02/18/2016

Notes: Replace convectors

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: 15,000.00

Unit of Measure: S.F.

Estimate: $214,581.71

Assessor Name: System

Date Created: 02/18/2016

Notes: Install a fire protection sprinkler system including 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, hot water, gross output, 765 MBH, includes standard controls and insulated jacket, packaged	1.00	Ea.	Boiler room					35	1967	2052	$21,223.00	$23,345.30
D5010 Electrical Service/Distribution	Load centers, 1 phase, 3 wire, main lugs, rainproof, 120/240 V, 400 amp, 42 circuits, incl 20 A 1 pole plug-in breakers	1.00	Ea.	Basement					30	1980	2047	$3,663.90	$4,030.29
												Total:	**$27,375.59**

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):	24,200
Year Built:	1948
Last Renovation:	
Replacement Value:	$520,356
Repair Cost:	$161,042.25
Total FCI:	30.95 %
Total RSLI:	33.84 %

Description:

Attributes:

General Attributes:

Bldg ID:	S130101	Site ID:	S130101

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	34.03 %	28.53 %	$108,339.28
G40 - Site Electrical Utilities	33.33 %	37.48 %	$52,702.97
Totals:	**33.84 %**	**30.95 %**	**$161,042.25**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2010	Roadways	$11.52	S.F.		30				0.00 %	0.00 %				$0
G2020	Parking Lots	$8.50	S.F.	4,700	30				0.00 %	44.82 %			$17,904.96	$39,950
G2030	Pedestrian Paving	$12.30	S.F.	18,800	40	1948	1988	2032	42.50 %	29.02 %	17		$67,107.63	$231,240
G2040	Site Development	$4.36	S.F.	24,200	25	1948	1973	2022	28.00 %	22.11 %	7		$23,326.69	$105,512
G2050	Landscaping & Irrigation	$4.36	S.F.	700	15	1948	1963	2022	46.67 %	0.00 %	7			$3,052
G4020	Site Lighting	$4.84	S.F.	24,200	30	1995	2025		33.33 %	0.00 %	10			$117,128
G4030	Site Communications & Security	$0.97	S.F.	24,200	30	1995	2025		33.33 %	224.52 %	10		$52,702.97	$23,474
								Total	**33.84 %**	**30.95 %**			**$161,042.25**	**$520,356**

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.

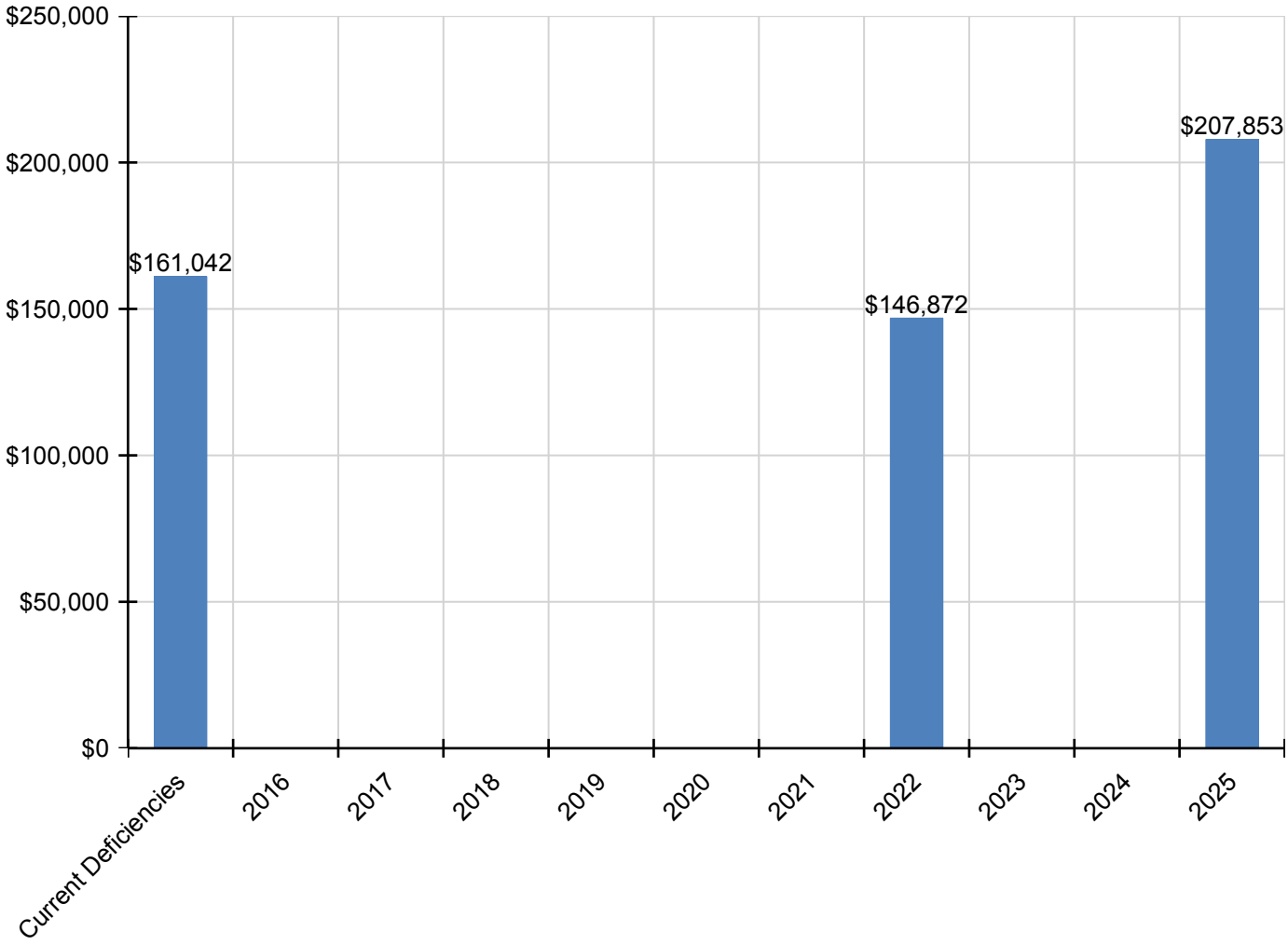
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$161,042**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$146,872**	**$0**	**$0**	**$207,853**	**$515,767**
G - Building Sitework	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G20 - Site Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2010 - Roadways	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2020 - Parking Lots	$17,905	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$17,905**
G2030 - Pedestrian Paving	$67,108	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$67,108**
G2040 - Site Development	$23,327	$0	$0	$0	$0	$0	$0	$142,743	$0	$0	$0	**$166,070**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$0	$0	$4,129	$0	$0	$0	**$4,129**
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	$173,152	**$173,152**
G4030 - Site Communications & Security	$52,703	$0	$0	$0	$0	$0	$0	$0	$0	$0	$34,701	**$87,404**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

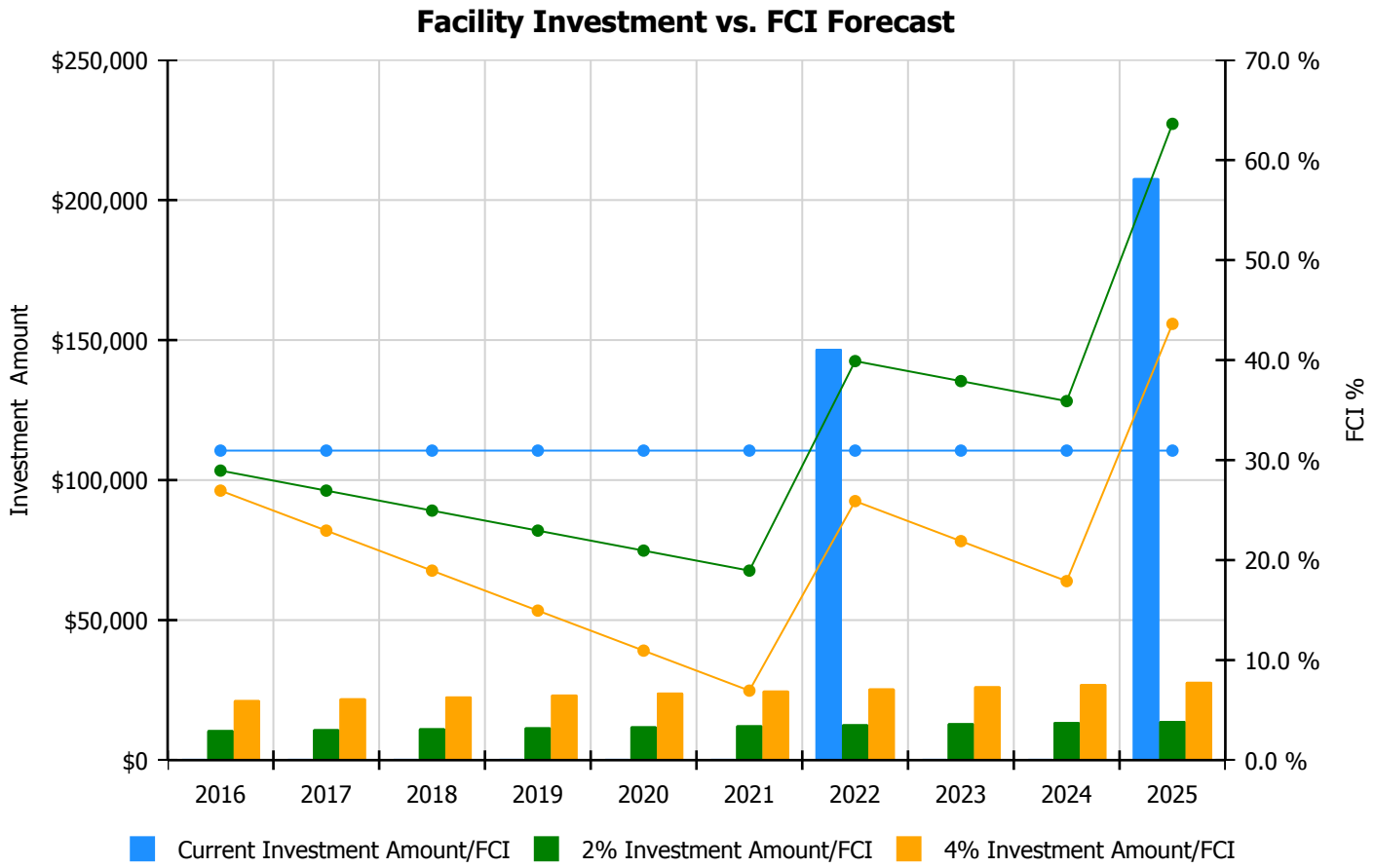
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

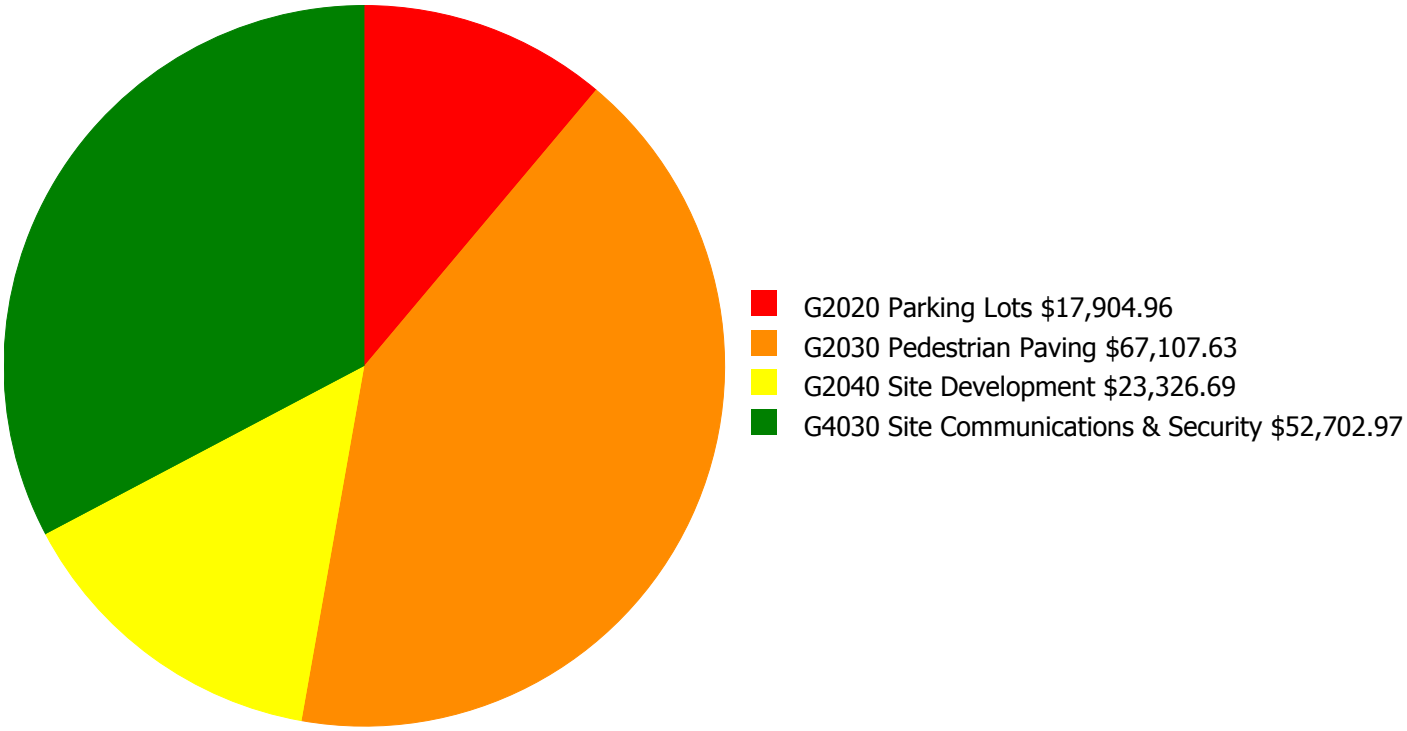
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 30.95%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$10,719.00	28.95 %	$21,439.00	26.95 %
2017	$0	$11,041.00	26.95 %	$22,082.00	22.95 %
2018	$0	$11,372.00	24.95 %	$22,744.00	18.95 %
2019	$0	$11,713.00	22.95 %	$23,427.00	14.95 %
2020	$0	$12,065.00	20.95 %	$24,129.00	10.95 %
2021	$0	$12,427.00	18.95 %	$24,853.00	6.95 %
2022	$146,872	$12,799.00	39.90 %	$25,599.00	25.90 %
2023	$0	$13,183.00	37.90 %	$26,367.00	21.90 %
2024	$0	$13,579.00	35.90 %	$27,158.00	17.90 %
2025	$207,853	$13,986.00	63.62 %	$27,973.00	43.62 %
Total:	**$354,724**	**$122,884.00**		**$245,771.00**	

Deficiency Summary by System

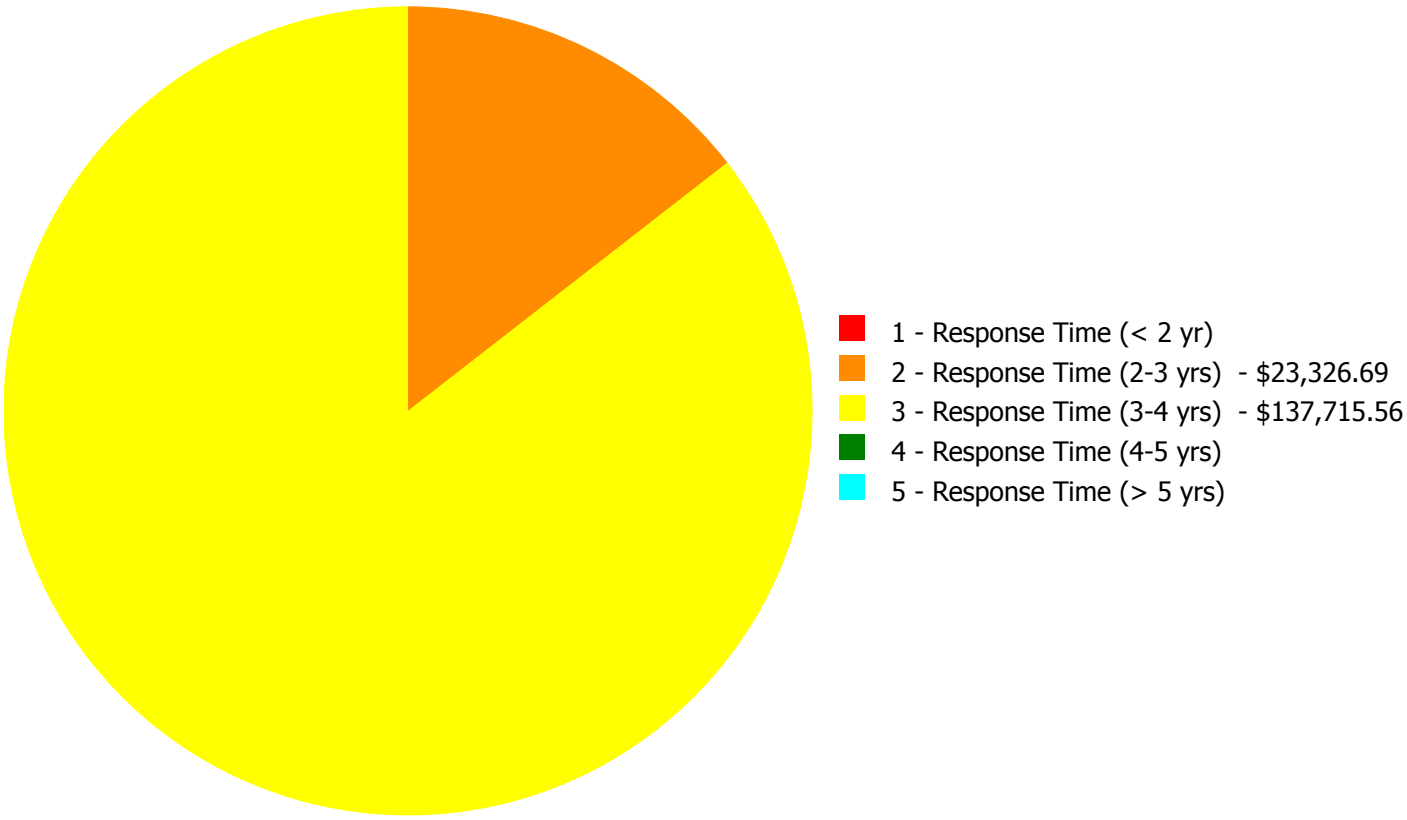
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $161,042.25

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: $161,042.25

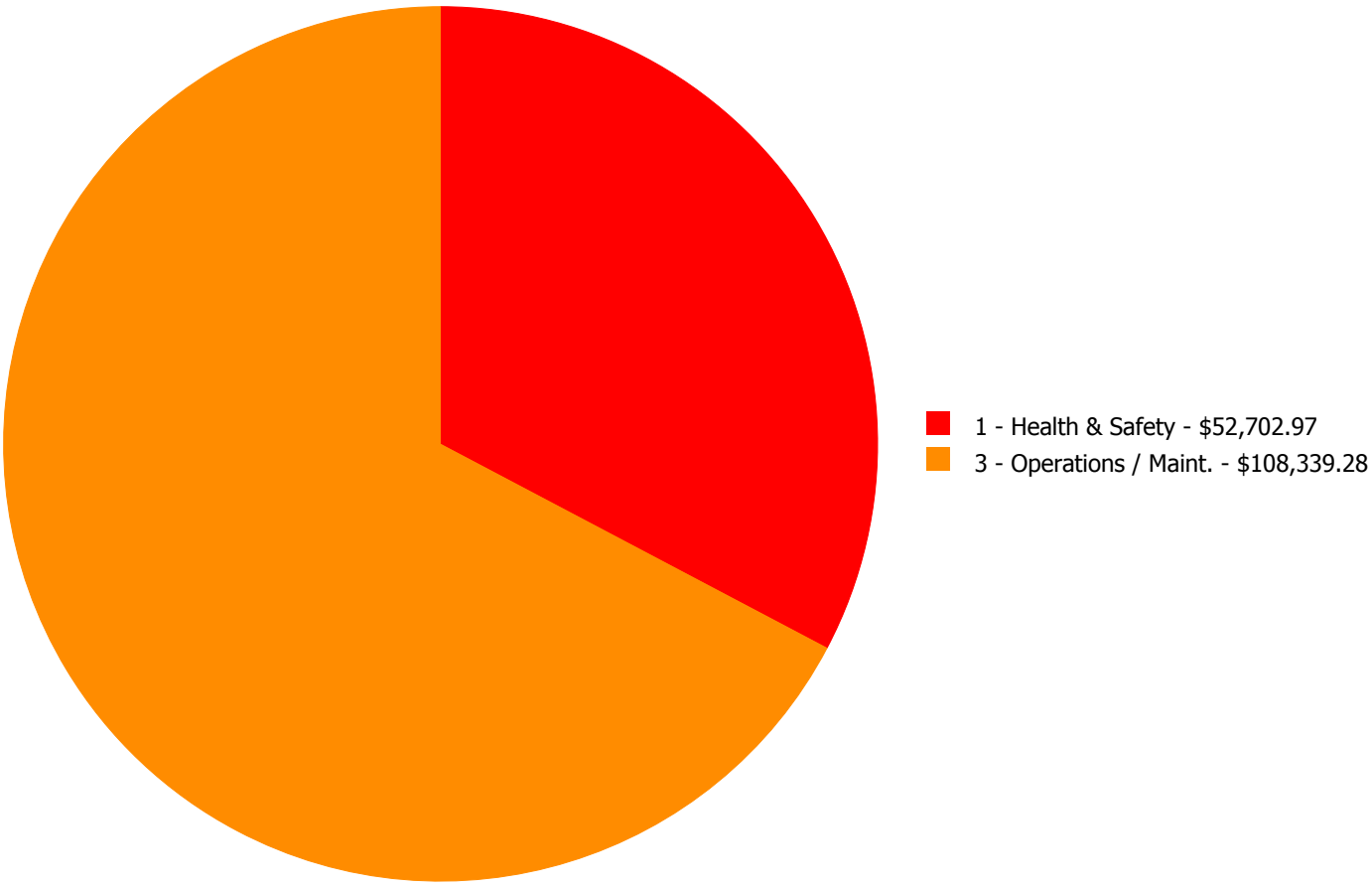
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2020	Parking Lots	$0.00	$0.00	$17,904.96	$0.00	$0.00	$17,904.96
G2030	Pedestrian Paving	$0.00	$0.00	$67,107.63	$0.00	$0.00	$67,107.63
G2040	Site Development	$0.00	$23,326.69	$0.00	$0.00	$0.00	$23,326.69
G4030	Site Communications & Security	$0.00	$0.00	$52,702.97	$0.00	$0.00	$52,702.97
	Total:	$0.00	$23,326.69	$137,715.56	$0.00	$0.00	$161,042.25

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: $161,042.25

Deficiency Details by Priority

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

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

System: G2040 - Site Development

Location: Playground fence

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace chain link fence - 6' high

Qty: 260.00

Unit of Measure: L.F.

Estimate: $23,326.69

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Replace the damaged chain link fence along two sides of the playground.

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

System: G2020 - Parking Lots

Location: Parking Lot

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Resurface parking lot - grind and resurface including striping

Qty: 4,700.00

Unit of Measure: S.F.

Estimate: $17,904.96

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Mill and overlay the asphalt surfaces of the parking and playground areas.

System: G2030 - Pedestrian Paving

This deficiency has no image.

Location: Playground

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Resurface AC pedestrian paving - grind and resurface

Qty: 18,800.00

Unit of Measure: S.F.

Estimate: $67,107.63

Assessor Name: Craig Anding

Date Created: 02/24/2016

Notes: Mill and overlay the asphalt surfaces of the parking and playground areas.

System: G4030 - Site Communications & Security

Location: Building Perimeter

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Add Video Surveillance System

Qty: 3.00

Unit of Measure: Ea.

Estimate: $52,702.97

Assessor Name: Craig Anding

Date Created: 02/09/2016

Notes: Provide outdoor surveillance CCTV cameras to the building exterior for full coverage of the perimeter. Approximate 3 CCTV 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