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.

Ziegler School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	5935 Saul St.	Enrollment	539
	Philadelphia, Pa 19149	Grade Range	'00-08'
Phone/Fax	215-537-2510 / 215-537-2987	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Ziegler	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	**19.53%**	**$6,114,331**	**$31,310,052**
Building	19.72 %	$6,065,285	$30,750,681
Grounds	08.77 %	$49,047	$559,371

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	33.95 %	$379,086	$1,116,577
Exterior Walls (Shows condition of the structural condition of the exterior facade)	01.93 %	$42,106	$2,178,613
Windows (Shows functionality of exterior windows)	89.28 %	$949,047	$1,063,040
Exterior Doors (Shows condition of exterior doors)	18.75 %	$16,044	$85,586
Interior Doors (Classroom doors)	09.21 %	$19,082	$207,178
Interior Walls (Paint and Finishes)	02.19 %	$17,134	$782,350
Plumbing Fixtures	34.75 %	$277,302	$798,018
Boilers	00.00 %	$0	$1,101,997
Chillers/Cooling Towers	38.90 %	$562,093	$1,444,932
Radiators/Unit Ventilators/HVAC	83.09 %	$2,108,463	$2,537,485
Heating/Cooling Controls	67.30 %	$536,300	$796,838
Electrical Service and Distribution	00.00 %	$0	$1,717,629
Lighting	00.24 %	$4,943	$2,046,987
Communications and Security (Cameras, Pa System and Fire Alarm)	00.00 %	$0	$766,735

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

S746001;Ziegler

Final

Site Assessment Report

January 31, 2017

PARSONS

Table of Contents

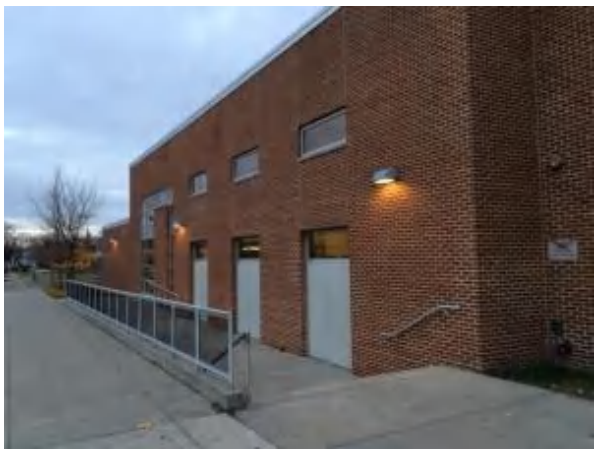
Site Executive Summary

The organization of this report, as displayed in the Table of Contents, follows the structure of the associated eCOMET database. The overall node for each school campus begins with the letter "S", which indicates the "Site" label. Each Site is comprised of separate "Building" and "Grounds" nodes; their asset names begin with the letters "B" and "G" respectively. Information rolls up to the Site node from the Building and Grounds nodes. This Site report combines facility information with subsections for the Buildings And Grounds nodes.

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

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

Gross Area (SF):	59,025
Year Built:	1957
Last Renovation:	2008
Replacement Value:	$31,310,052
Repair Cost:	$6,114,331.14
Total FCI:	19.53 %
Total RSLI:	60.99 %



Description:

Facility Condition Analysis
December 2015

School District of Philadelphia
William Ziegler Elementary School
1655 Unity Street
Philadelphia, PA 19124

59,025 SF / 556 Students / LN 07

William Ziegler Elementary School is located at 5935 Saul Street. The original building was constructed in 1957 and an addition was constructed in 2008 more than doubling the size of the school. The total area of the school is now 59,025 square feet. The original building is 2 stories tall and has a partial basement. The addition has a 2 story classroom wing and 1 story elements that contain the cafetorium (combined cafeteria and auditorium), kitchen, gymnasium, and library. Mechanical and electrical equipment are located in the partial basement under the original building and on the roofs of the new addition. The front entrance to the school faces Saul Street. The cafetorium faces Penn Street and has 3 sets of doors that open onto that street. An asphalt playground is located on the back of the school and enclosed on three sides by the original building and the new addition. A faculty parking lot is located to the southwest of the playground and separated by a 48” high chain link fence. Mike Stutz, the Building Engineer accompanied the FCA

team during the inspection.

The inspection Team met Principal Paul Spina who expressed concern over some issues. He indicated that the heating system controls in the old building do not work properly causing hot and cold areas during heating season. The original building has old windows, not replaced during the construction of the addition; they are difficult to open, do not stay open, and are leaky. The new building does not have security screens on the windows facing the playground; these are needed to prevent glass from being broken. Some of the limestone panels on the original building area cracked.

ARCHITECTURAL/STRUCTURAL SYSTEMS

Foundations in the original building are constructed of concrete. No major settlement cracks were observed. Basement walls are dirty and should be repainted, but there were no major areas of peeling. One concrete beam up at the underside of the first floor was seen to be spalling and the reinforcing rods rusting. Footings were not seen and their construction type or condition could not be ascertained. The crawlspace under the original building was not inspected due to the presence of asbestos in the area.

Floor slabs in the original building basement mechanical rooms are in good condition although covered with dirt and in need of stripping, cleaning and resealing. Upper floor slabs are also constructed of cast-in-place concrete with cast-in-place concrete beams. The second floor corridor slab in the original building is somewhat lumpy and should be leveled when a new floor is installed. Upper floor slabs in the new addition are in good condition, but the means of their structural support could not be seen. No major cracks were seen in any of the slabs.

Roof construction over the original building consists of reinforced concrete beams and deck, bearing on masonry walls and concrete columns. The open 1 story spaces in the new building, the "cafetorium" and gymnasium have exposed, longspan steel bar joists and metal roof deck system; although not observed, it is suspected that the same system extends over the classroom section of the new building. The roof deck above the original building consists of a "flat" deck with minimum overall slope and pitch to roof drains and has no parapets; roof access is via a hatch in the roof. Equipment supported on the roof consists of exhaust fans, gravity ventilation units, and a brick chimney. The roof deck above the new building is also flat and has no parapets; roof access is via a hatch in the roof. Two large air handlers are located on the roof on steel supports connected to the roof structure through pitch pockets. Some equipment located on the southwestern new roof (roof #4 on roof plan attached) and the main roof (roof #2) is closer than 10ft from the edge of the roof; the building code requires edge protection (guard rails 42" high) where equipment is closer than 10ft from an edge. All roofs have internal roof drains at low points. Vertical leaders run through the building in internal chases. There are no vertical leaders running down the outside of the exterior walls. None of the roofs have overflow scuppers or overflow roof drains; this is not required since there are no measureable parapets and the roof deck will not hold any appreciable amount of water.

Exterior walls of the original building are constructed of brick with concrete column elements creating white vertical bands between window strips on most wall elevations. There are a few small areas of brick cracking; a vertical crack is located adjacent to the exit door facing E. Comly Street and some cracked bricks can be seen at the top of the chimney. The north wall is finished with a plaster system that has cracked, spalled, and has become filthy with soot and mildew. The existing finish needs to be removed and a new finish applied. The new addition exterior is also constructed of brick. Aluminum curtainwall windows are set into the brick using steel lintels and concrete sills. Lintels and supporting brickwork are in good condition, but the concrete sills on all elevations are filthy with mildew and need to be cleaned. Additionally, some efflorescence has washed down onto the bricks below on the northeast corner window sill. Brickwork and expansion joints on major wall surfaces are in good condition.

Exterior windows on the original building are constructed of dark bronze anodized frames and single glazed plexiglass; these are probably replaced the original windows and were probably installed sometime in the 1990's. The aluminum window frames are corroding where moisture has accumulated and the plexiglass panels have become etched and cloudy. Windows are difficult to open and close; when opened they sometimes fall. These single glazed units provide almost no insulation value and do not meet today's energy code requirements making them a large source of heat loss. Almost all windows on both first and second floors have galvanized steel security screens on the exterior, all in good condition. All windows on the original building are in need of replacement. Windows on the new building are constructed of clear anodized aluminum tube frame units with insulating glass and small operating panels distributed throughout the elevations. These windows are up to date units providing good insulation and ample daylight. Units on the playground side do not have security screens to protect the glass from balls and other airborne playground equipment. It was noted during the inspection that a window unit in the cafetorium facing the street was broken. Therefore the District should confirm that these windows are tempered or laminated safety units; if so, they should not need the additional security screen protection. However with consideration given to the existence of a broken window unit, security screens might be required in critical locations like along the street and playground areas.

Exterior doors in the original building at the main building front entrance, first floor toilet rooms, and stairway exits are painted hollow metal with steel frames; some have narrow glass vision panels with security screens. Hollow metal doors are generally in fair condition, with some minor dents and scratches. Weatherstripping is missing on most doors as gaps can be seen around the older

doors. Door frames are starting to show signs of rust and corrosion. New doors, frames, cold weather weatherstripping, and hardware is needed for the original building. The new building has flush, solid hollow metal doors and steel frames at cafetorium exits, gymnasium exits and other exits around the building, all in good condition with properly operating panic hardware. However, a new coat of paint and new weatherstripping is needed on all of these doors. The exit doors from the kitchen are FRP in steel frames in good condition with good weatherstripping and panic hardware.

Roof coverings over the original building consist of a built-up asphalt roofing system, with embedded light grey granules into the roofing membrane. It is guessed from aerial photos and information given to the inspection Team that the roof is probably more than 20 years old. Flashing is asphalt-backed aluminum-faced, adhered flashing. Roof structures include a masonry chimney, plumbing vents, gravity vents, and roof drains. The granular membrane still appears to be in good condition; no leaks were reported to the inspection Team. Aluminum coping and flashing are in good condition. Since the roof is probably more than 20 years old but still seems to have some extra, useful life remaining, it should be replaced in the next 5 years. The roof on the new building is a built-up asphalt and gravel system. Loose gravel is laid over hot asphalt to become embedded into the surface. Roof structures include exhaust fans, smoke vents, roof hatches, and pitch pockets with structural supports for the large air handlers located on the roof. Walk pads are provided to help maintain the gravel coating and minimize damage from frequent foot traffic for maintenance. Flashing used along the low roof edge (no parapet), a low roof intersects a brick wall, and along equipment is the same granule embedded asphalt flashing used on the old building roof. This roof was installed in 2008 and is in good condition with no leaks reported.

Partitions in the original building are constructed of block (concrete masonry units) throughout the entire building. The lower half (54") of the corridor walls are glazed block; the upper half are painted. Toilet rooms and stairs are glazed block full height. Classrooms and offices are painted block full height. Block corners utilize bull-nose block to soften the hard edges and provide a more durable surface. Generally, this highly durable wall system is in good condition with no joint cracks seen during the inspection. Above the doors into classrooms are wired glass vision panels, which appear to be consistent with a 1 hour fire rating required of corridors in a non-sprinklered building, which was the design before the addition was constructed and an automatic fire sprinkler system was added to the old and new building.

Partitions in the new addition classrooms, corridors, and library (IMC) in new building are gypsum board on metal studs. Already, these partitions are showing signs of damage at corners and in corridors. Gypsum board is not nearly as durable as block and must be patched and painted more often to maintain a good appearance. Partitions in the stairs, cafetorium, kitchen, and gymnasium are block and in good condition.

Interior doors in the original building classrooms, offices, storage rooms, and bathrooms are the original solid wood doors with steel frames that were painted blue when the addition was constructed. Most classroom doors have large triple divided lite wired glass vision panels. Classroom doors have wired glass transoms over the doors; a few had been broken and replaced by plywood. Most doors are in good condition, although classroom doors do not have closers, as required by code on corridor doors. All doors in old and new buildings have security lock feature that allow them to be locked from the inside of the classroom, as required today for lock-down security. Steel doors and frames at stairways are in good condition.

Interior doors in the new addition classrooms, toilet rooms, cafetorium, and gymnasium are also wood but have a clear stained finish to show the attractive oak grain. The gymnasium doors cannot close properly due to wood expansion and need to be replaced. Stairway doors are steel doors with wired glass vision panels and steel door frames. These doors and frames have panic hardware which latches as required by today's codes. Doors appear to be in fair condition, but need to be repainted, since their surface is worn and scratched.

Interior fittings/hardware in the original and new buildings include whiteboards and tackboards with metal trays mounted on one wall in each classroom. Classrooms also have smartboards. The library has free-standing wood bookcases, plastic laminate and wood tables, and chairs that are all new. Classrooms in the old building have alcoves for coats and storage and also built-in metal cabinets. Kindergartens have wood cubbies and small kitchenette cabinets with a sink. Classrooms in the new addition have steel lockers inside the classrooms instead of lining the corridors. Toilet rooms in the old and new buildings have HDPE (high density polyethylene) floor mounted partitions and all the necessary accessories. At least one toilet room per floor has an ADA accessible layout and accessories.

Stair construction in the old building consists of concrete treads with steel nosings, concrete risers, and concrete stringers with vinyl tread/riser overlays. Handrails are stainless steel 32" high along stairways and guards are 38" high at tops of landings. All stairway handrail and guard heights are slightly less than today's code requirements for railings (34"), guards (42"); baluster spacing is not in compliance with the 4" maximum spacing required. Railing and guard heights should be reviewed with the local building official who has the authority to accept a "slightly" non-conforming height; code compliant balusters, however, should be provided to make it more difficult to fall off the edge of stairs and platforms. Stairways in the new addition are constructed of steel treads, risers, and stringers with vinyl tread/riser overlays. Handrails are also stainless steel and comply with today's codes for railing height, guard height and

baluster spacing. Some stairways have solid concrete masonry walls instead of 4" spaced balusters, an acceptable alternative.

Wall finishes in the basement in the old building are full height painted concrete masonry units (block). First and Second floors are painted block in classrooms and painted block over 54" high glazed block in corridors. Toilet rooms and stairs are full height glazed block. All rooms with painted block are in good condition. The addition has painted gypsum board partitions in classrooms and corridors. There are many damages in the corridors; this material is not as durable as block and is more susceptible to damage then block. Painted block cafetorium, kitchen, and gymnasium are in good condition. Toilet rooms in the new building are finished with full height ceramic tile; no damages were seen in toilet rooms.

Floor finishes in all corridors, most classrooms, the lobby, gymnasium, stairways, cafetorium and stage consist of 12"x12" vinyl composition tile (VCT). Floors in the old building were replaced when the new addition was constructed and now, all floors are in good condition. Toilet rooms in the old building have sealed concrete which is dirty and needs to be stripped and cleaned to promote a healthier environment. Basement mechanical rooms in the old building also have sealed concrete finishes which are in need of stripping, cleaning, and resealing. Toilet rooms in the new addition have ceramic tile, in good condition. The kitchen serving the new cafetorium has quarry tile, which is appropriate for and institutional kitchen and in good condition.

Ceiling finishes consist of exposed concrete deck, exposed steel, or acoustical tile ceilings. Corridors have surface mounted exposed concrete decks with surface mounted 1x4 fluorescent lighting fixtures. Classrooms and offices in the original building have exposed concrete deck ceilings with surface mounted 1x4s. The exposed, painted ceiling surfaces are well maintained. Corridors, classrooms, kitchen, and the library in the new addition have 2x4 suspended acoustical tile ceilings with high efficiency recessed 2x4 lighting fixtures. The gym has precast concrete planks over an exposed steel longspan joist structure, with suspended high-bay lighting fixtures, all painted white and in good condition.

Fixed furnishings include wood or plastic laminate base cabinets, benchtops and wall cabinets in science rooms, art room, and other rooms. Most classrooms in the original building have storage areas with repainted original, coordinated 6-panel sliding closet doors, or open areas with the doors removed. Classrooms in the new addition and some in the old building have open cubbie/locker storage units, along one wall. The gym has folding tables for serving students. The kitchen food service area has institutional stainless steel food warming and service counters.

There is a 2000lb capacity 2 stop hydraulic elevator installed in the new addition. This unit provides audible and tactile notifications, and appears to comply with the latest ADA guidelines. Stainless steel finishes in the cab are in good condition and were protected by "movers' fabric", hanging in the cab.

Both the original building and the new addition are protected with an automatic fire-sprinkler system.

MECHANICAL SYSTEMS

Most of the original plumbing fixtures remain in service. Fixtures in the restrooms on each floor consist of wall mounted flush valve water closets, wall hung urinals and lavatories with wheel handle faucets. Water closets in the staff restrooms are floor mounted. Sinks are installed in many of the classrooms. The fixtures appear in good repair, but the older units have been in service for nearly 60 years and should be replaced with low flow fixtures as part of any renovation of the spaces.

Drinking fountains in the corridors and at the restrooms are wall hung stainless steel fixtures with refrigerated coolers that have been replaced in the last few years. These units are well within their service life and should provide reliable service for the next 5-10 years; at least one fountain on each floor is dual level, accessible type.

A floor mounted, molded stone service sink is available on each floor for use by the janitorial staff. The Cafeteria has a three compartment, stainless steel pot and pan sink with lever operated faucets and a grease trap. A manual station supplied by a vendor is available to added chemicals to the sanitizing basin. The scullery sink is equipped with a vacuum breaker and food waste grinder. An adequate number of hand washing sinks are provided in the kitchen prep areas.

A 3" city water service enters the building from Saul Street. The 3" meter and valves are located in the boiler room. A reduced pressure backflow preventer is installed on the supply to the building. The original domestic hot and cold water distribution piping in the older portion of the building was installed in 1957 with copper piping and sweat fittings. Wheel handle gate valves available in the corridors of the older portion shut off large groups of fixtures on both floors. The maintenance staff reports no significant problems with the domestic piping and the supply seems adequate to the fixtures. However, the domestic water piping in the older portion should be in replaced as it is well beyond the anticipated service life.

Two gas-fired, tankless instantaneous (on demand) water heaters manufactured by Paloma were installed in the boiler room in 2005

to supply hot water for domestic use. These heaters supply the original hot water storage tank. A 150 gallon vertical tank type water heater installed in 2008 supplies the kitchen. The units are equipped with T&P relief valves and the system has a circulation pump. The dishwasher is equipped with an electric booster heater. The building has a water softener for conditioning water supplied to the boilers.

Roof drains conduct storm water to the sewer system on the site. The original sewer discharges to Saul Street and combines sanitary wastes and storm drainage. Piping is galvanized steel with threaded fittings. The roof parapet is low enough that overflow drains are not required. A new manhole and sanitary waste piping should be installed to separate the storm and sanitary sewer systems to avoid backups through the drains on the lower level.

The small sewage ejector pit located in basement boiler room receives waste from the drains in that area. It has self-priming pump that were installed in 2008. The pumps are within their service life and should provide reliable service for the next 5-10 years.

The maintenance staff reported no problems with the sanitary waste piping systems. However, the original sewer piping in the older portion of the building is galvanized steel with threaded fittings that has been in service for nearly 60 years and will require more frequent attention from the maintenance staff as time passes. Sections of pipe have been replaced using cast iron pipe with hub less fittings joined with banded couplings. The District should hire a qualified contractor to examine the sanitary waste piping using video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

Low pressure steam is generated at 15 lbs/sq. in. or less by two 120 HP Weil McLain cast iron sectional boilers installed in 2008. Each boiler is equipped with a Power Flame burner designed to operate on natural gas or fuel oil. Combustion air makeup is supplied by louvers equipped with motorized dampers. Burner controls provide full modulation with electronic ignition, solid state flame sensing and pressure atomization on oil. Burner oil pumps are loose and not driven by the fan motor. The gas train serving each boiler appears to have code required venting of the regulators and dual solenoid valves with venting of the chamber between. The oil supply to the burner is equipped with dual solenoid valves and strainer, but has no disposable media filter. Cast iron sectional boilers have an anticipated service life of 35 years or more; these units have been in service less than 10 years. The boilers appear to have been maintained well and should provide reliable service for the next 5-10 years.

The reserve oil supply is stored in a 4,000 gallon underground storage tank (UST). The tank is equipped with automatic leak detection and monitoring. Duplex pumps located in the old coal ash bunker circulate oil through the system. Oil is used as a backup fuel and the District receives credit from the gas utility as an interruptible service. The fuel supply should be tested for quality on a regular schedule. USTs have an anticipated service life of 20 years. The actual installation date for this tank and the condition of the fuel side are unknown. However, the design engineers elected not to replace this tank when constructing the new building, so it should provide reliable service for the next 5-10 years.

A 3” natural gas service enters the building from Saul Street. The meter and valves are located in the boiler room near the stair. A booster is installed on the incoming service to provide sufficient capacity and pressure to support burning natural gas as the primary fuel.

The condensate receiver tank and boiler feed pump assembly were installed in 2008. No problems were reported with failed steam traps and the District services them on a regular schedule.

Steam piping is black steel (ASTM A53) with welded fittings. The condensate piping is Schedule 80 black steel with threaded fittings. Steam and condensate piping mains from the basement level run up through the older portion of the building to the unit ventilators and heating terminal units. The original distribution piping installed in 1957 has been in service nearly 60 years and will require more frequent attention from the maintenance staff to address pipe/valve failures as time passes. The District should hire a qualified contractor to examine the steam and condensate piping and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 10 years.

A steam converter in the boiler room provides hot water for the heating terminals and air handling units in the newer portion of the building. Hydronic heating piping in the newer portion is black steel (ASTM A53) with welded fittings. The distribution piping was installed in 2008 and has been in service less than 10 years and should provide reliable service for the next 5-10 years.

A 115 ton water-cooled scroll chiller (R-410a) was installed on the roof in 2008. The evaporative section of the chiller is drained and the shutdown in the heating season. A pair of centrifugal pumps in the roof level mechanical room circulates CHW to the fan coil units and air handlers throughout the building.

Unit ventilators provide heating, ventilation and air conditioning for the classrooms in the older portion of the building. Most are the original units installed in 1957 and are equipped with steam coils, mixing dampers and coil bypass dampers that allow operation on full

outdoor air. The air intake for these units is ducted directly through the wall from outdoor louvers. Excess air supplied by the unit ventilators transfers to the corridor ceiling through wall grilles above the door and relieves to the outdoors through gravity hoods on the upper level. Exhaust from the restrooms is made up by air transferred from the corridors through louvers in the doors. These conditions do not meet requirements of NFPA 90A that prohibit utilizing an egress corridor as part of the air path. The original unit ventilators have been in service for nearly 60 years. They are well beyond their anticipated service life and should be scheduled for replacement. The new units should be designed for quiet operation and equipped with hot water and chilled water coils, and integral air-to-air heat exchanger to supply code required minimum outdoor air ventilation.

In addition, a few of the rooms in the older section of the school building have window air conditioning units. A second chiller with pumps and distribution piping should be installed to supply air conditioning for the new unit ventilators proposed for the older building.

The classrooms in the newer portion have fan coil units with HW heating coils and chilled water cooling coils installed in 2008. Outdoor ventilation air supplied to these classrooms from an energy recovery unit located on the roof. Air handling units equipped with mixing dampers, HW heating coils and chilled water cooling coils serve the Gymnasium, IMC and Cafetorium. Finned tube radiation terminals provide supplemental heat for many of the spaces including the classrooms, offices, and the lunchroom.

Power roof ventilators exhaust air from the restrooms and utility rooms. Nine (9) fans are located on the roof. They are controlled by a time clock. The original fans have been replaced and all appear to be within their anticipated service life. The kitchen has an exhaust hood and gas-fired makeup air system.

The original pneumatic systems still provide basic control functions in the older portion of the building. Pneumatic room thermostats drive the unit ventilators, the damper actuators and control valves. Pneumatic control air is supplied from a compressor and dryer located in the boiler room. The maintenance staff reports temperature control is poor due, which may be due to significant problems with oil or moisture in the pneumatic supply lines and failed copper tubing buried in the walls and floor slabs. The older pneumatic controls have small rubber gaskets and tubing connections at devices that have become brittle and fail regularly. The pneumatic systems in the older portion are beyond their service life and require too much attention from the maintenance staff. The original control valves, dampers and pneumatic actuators are nearly 60 years old and should be rebuilt or replaced. These controls should be converted to DDC.

A building automation system (BAS) with modern DDC modules and communications network provided by CM3 serves the HVAC systems in the newer portion of the building. An interface should be provided with the preferred system in use throughout the District.

The school building is covered by an automatic sprinkler system installed in 2008. The sprinkler system includes quick response type heads and operates on the available city water pressure. The kitchen exhaust hood is equipped with dry chemical fire suppression system

ELECTRICAL SYSTEMS

Electrical service for the facility is by the Boiler Room located switchboard MDP rated 800A, 480/277V, 3PH, 4 wires. This Switchboard MDP is fed from a pad mounted 500KVA utility transformer located outside of the building on Saul St. The utility meter is located adjacent to the utility transformer. The Switchboard MDP feeds, directly or via step down transformers, all of the boilers, unit ventilators, lighting and power panels located in the original building. The step down transformers, 480-volts to 208/120-volts, are sized 15KVA to 112.5KVA. Switchboard MDP also feeds the switchboard MDPA located in the Multipurpose Room stage area in the newer building. The switchboard MDPA, 600A rated, feeds mechanical and kitchen equipment's as well as lighting and power panels in the newer building directly or via a 150KVA, 480V to 208/120V step down transformer. Electrical service is installed in 2009 and is in good condition

General building power is achieved through corridor located lighting/receptacle panels on each floor, two in the original building and two in the new building. There are also five additional panel boards in newer building that serve kitchen equipment and other 208-volts loads. Power distribution system, either retrofitted or installed in 2009 are in good condition. No major deficiencies

Classrooms, corridors, offices, and other areas typically have an adequate number of duplex receptacles on each wall. No major deficiencies with respect to receptacle number and location were observed except the receptacles in Kindergarten classrooms which are not of tamper-resistant type. This is in violation of the electrical codes that receptacles that are subject to child access be of either tamper proof or GFCI.

Interior building spaces are illuminated by various types of fluorescent lighting fixtures with T8 lamps. 2x4 lay in grid type fluorescent fixtures are used in classrooms, offices, cafeteria and kitchen and corridors. Corridors utilize by 1x4, surface mounted fixtures. In general the fixtures are in good condition and not required to be replaced but some minor maintenance especially for cleaning and

removing the dead bugs from the cover lens of the fixtures is required. Gymnasium illuminated with pendent mounted metal halide fixtures which have high energy consumption and are difficult to re-lamp.

The Fire Alarm system is addressable, and in compliance with minimum requirements of current fire alarm codes. The Smoke detection system consists of area smoke detectors is provided in recommended area by code. There are also manual pull stations for fire notification. Classrooms, corridors, offices are provided with horn/strobe in newer building.

The Fire Alarm system is automated, addressable, and in compliance with today's safety codes. The Smoke detection system consists of smoke detectors in ductwork and corridors. There are also manual pull stations for fire notification. There are a sufficient number of horn/strobes installed in the classrooms, corridors, offices in newer building. The original building is provided with horn/strobe only in corridors.

The school telephone and data systems are new and working adequately. A main distribution frame (MDF) along whit a telephone PBX system (telephone within an enterprise that switches calls between enterprise users on local lines while allowing all users to share a certain number of external phone lines) located in room 209b and one IDF (local Distribution Frame) located in computer room servicing the communication system of the building. School also equipped with wifi system.

Separate PA system does not exist. School uses the telephone systems for public announcement. This system is working adequately.

Each classroom is provided by intercom telephone service. The system is permit paging and intercom communication between main office phone to classroom phones, and classroom to main office, classroom to classroom, and to office. Outside line access from a classroom phone through the PBX is blocked. The system is interfaces with master clock system for class change signaling utilizing paging speakers. The system also equipped with a tone generator and input from program/clock controller.

In general clock and Program system in the both buildings are functioning. Our observation showing that in some area the clocks do not have a good signal reception. Providing additional transmitter may solve the problem. However further investigation is required for troubleshooting to make the system fully operational.

Television System is not provided in the school.

Video surveillance system is not provided in the school. School provided only with access control system such a door contacts on IMC, and main entrance doors and motion security sensors in corridors. The school desires a complete video surveillance system with cameras located in critical areas, such as exit doors, corridors, and building exterior areas. The cameras should be controlled by a Closed Circuit Television (CCTV) system.

Emergency Power System is provided in the school. A new 30KVA, 480/277V, three phase, 4W diesel generator along with a 15KVA step down transformer (converting 480V to 208/120V) is provided in Boiler room for feeding emergency lightings throughout the campus.

Uninterruptible Power System (UPS) is provided for Local Area Network in the main IT room.

Emergency lighting system, including exit lights are provided in the school. Numbers of lighting fixtures in corridors and all exit signs are fed by emergency pack up generator.

Lightning Protection System is accomplished with a few air terminals mounted on the chimney on the roof and connected to the ground system. Further study is needed to verify that the air terminals provide the proper coverage.

An estimated 20 horsepower rated hydraulic type elevator manufactured by Thyssen Krupp is in operation at the school. The elevator appears to be working properly.

Theatrical lighting and dimming control is not provided in the school multipurpose room. In modern school auditorium/ multipurpose, Stage requires front, upstage, high side, backlighting, scenery lighting and controllers by automatic dimmer bank controller. In addition to the stage lights, supplemental fluorescent lighting is also requires to be provided in stage area for lectures and testing. These supplemental lighting could be also turned off automatically by dimmer bank controls during performance.

A sound system is provided in multipurpose room. System is new and working adequately.

Campus areas, parking areas, and building perimeters have lighting that is adequate for personnel safety and security of property.

The exterior building and parking areas are monitored by a video surveillance system.

Site paging system appears to have a sufficient number of speakers located on building exterior walls and appears to be working adequately.

GROUNDS SYSTEMS

Paving and parking is constructed of asphalt. There is a small parking lot for 8 cars, not large enough to meet the needs of the school faculty and staff; street parking must be utilized. Visitor parking is not provided; street parking must also be utilized. The playground paving has minor cracking and should be filled and sealed to minimize future cracking.

The ADA accessible ramp into the building is located at the front door into the building. Railings and guards along the ramps are in good condition. Entrances into the new addition from the playground area are at grade and are accessible. The cafeteria exit doors are also at grade and can be opened to serve as accessibly entrances if desired.

Site fencing is composed of chain link fencing which is in fair condition with some sections beginning to rust around the site. There are gates to close-off the entrances to the parking lot and the building.

RECOMMENDATIONS

Strip and reseal concrete floors in old basement (2,000 sf)

Repaint all exterior metal doors and metal frames; replace all weatherstripping (18 3x7)

Replace roof on original building (10,00 sf)

Provide guard rails around equipment on roof closer than 10’ from edge of roof (2 locations, 80ft)

Replace all windows around the old building (150 – 3’x7’)

Repoint lintels on original building facing Saul St. (30 ft)

Replace broken window in cafeteria (25 sf)

Provide security screens on (large, fixed) new addition first floor windows facing playground (300sf)

Replace plaster system on north wall of original building (500sf)

Powerwash brick walls on new addition below first floor windows, on old building facing Saul St., and window sills where dirty (2,000 sf)

Replace damaged doors and hardware in gymnasium (4 3’x7’)

Repair and repaint damaged gyp bd walls in new addition corridor and classroom walls (2,000 sf)

Repaint ceilings with peeling paint in original building (2,000 sf)

Replace stained 2x4 acoustical ceiling tiles in classrooms and cafetorium in new addition (1,000 sf)

Repair cracked brick on old building exterior walls (200 sf)

Repair cracked concrete beam in basement in old building

Replace damaged VCT in miscellaneous areas in both buildings (1000 sf)

MECHANICAL

- Replace the original wall hung lavatories and wheel handle faucets with low flow fixtures.

- Replace the original water closets in the restrooms with low flow fixtures.
- Replace the original wall hung urinals with low flow fixtures.
- Replace the original galvanized steel domestic water piping in service for nearly 60 years.
- Perform a detailed examination of the original galvanized steel sanitary waste piping in service in the older section of the building for nearly 60 years using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Perform a detailed examination of the original galvanized steel storm drainage piping in service in the older section of the building for nearly 60 years using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Provide a new manhole and sanitary waste piping to separate the storm and sanitary sewer systems to avoid backups through the drains on the lower level.
- Perform additional testing of the steam and condensate piping in service in the older section of the building for nearly 60 years to locate and replace any damaged sections and to further quantify the extent of potential failures.
- Replace the existing unit ventilators in service in the older section of the building for nearly 60 years with new units designed to provide adequate ventilation per ASHRAE Std 62. The new units should be equipped with hot water / chilled water coils and integral heat recovery wheels. Install circulating pumps, distribution piping and controls for the new coils.
- Provide ventilation for the corridors and entryways by installing two RTAHUs. Remove the gravity roof ventilators and seal air transfer openings through the corridor walls.
- Install a second evaporative chiller with two refrigerant circuits on the roof and chilled water distribution piping and pumps located in the boiler room to supply air conditioning to the new unit ventilators proposed for the older section of the building. /88
- Replace the pneumatic controls for the HVAC systems in service in the older section of the building for nearly 60 years with modern DDC modules, valves and actuators to improve reliability and energy efficiency. Extend the CM3 building automation system (BAS) to provide communication interface for these areas to the preferred system in use throughout the District.

ELECTRIAL

- Provide new modern stage lighting with automatic dimmer bank controller in the Auditorium.
- Provide lightning protection studies to ascertain adequacy of existing systems.
- Replace all existing receptacles with GFCI type receptacle in areas subject to kid access. Estimated 30 receptacles.

GROUNDS

- Repave broken sidewalks around building (200 sf)
- Repoint front stairs (30 ft)
- Repaint chain link fences and gates (700 lf)

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 2
Status:	Accepted by SDP	Team:	Tm 2
Site ID:	S746001		

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 %	0.13 %	$6,719.04
B20 - Exterior Enclosure	62.28 %	30.27 %	$1,007,196.54
B30 - Roofing	65.00 %	33.95 %	$379,085.79
C10 - Interior Construction	52.94 %	1.32 %	$19,082.35
C20 - Stairs	42.00 %	0.00 %	$0.00
C30 - Interior Finishes	71.44 %	2.06 %	$58,312.67
D10 - Conveying	80.00 %	0.00 %	$0.00
D20 - Plumbing	77.83 %	105.19 %	$1,267,790.58
D30 - HVAC	72.79 %	48.84 %	$3,206,855.01
D40 - Fire Protection	80.00 %	0.00 %	$0.00
D50 - Electrical	67.61 %	0.58 %	$26,796.80
E10 - Equipment	80.00 %	9.94 %	$93,445.81
E20 - Furnishings	82.50 %	0.00 %	$0.00
G20 - Site Improvements	0.00 %	11.87 %	$49,046.55
G40 - Site Electrical Utilities	0.00 %	0.00 %	$0.00
Totals:	**60.99 %**	**19.53 %**	**$6,114,331.14**

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)
B746001;Ziegler	59,025	19.72	$1,715,423.17	$1,618,036.33	$618,130.84	$0.00	$2,113,694.25
G746001;Grounds	33,600	8.77	$0.00	$49,046.55	$0.00	$0.00	$0.00
Total:		**19.53**	**$1,715,423.17**	**$1,667,082.88**	**$618,130.84**	**$0.00**	**$2,113,694.25**

Deficiencies By Priority

- 1 - Response Time (< 2 yr) - $1,715,423.17
- 2 - Response Time (2-3 yrs) - $1,667,082.88
- 3 - Response Time (3-4 yrs) - $618,130.84
- 4 - Response Time (4-5 yrs)
- 5 - Response Time (> 5 yrs) - $2,113,694.25

Budget Estimate Total: $6,114,331.14

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):	59,025
Year Built:	1957
Last Renovation:	2008
Replacement Value:	$30,750,681
Repair Cost:	$6,065,284.59
Total FCI:	19.72 %
Total RSLI:	62.10 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B746001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S746001		

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 %	0.13 %	$6,719.04
B20 - Exterior Enclosure	62.28 %	30.27 %	$1,007,196.54
B30 - Roofing	65.00 %	33.95 %	$379,085.79
C10 - Interior Construction	52.94 %	1.32 %	$19,082.35
C20 - Stairs	42.00 %	0.00 %	$0.00
C30 - Interior Finishes	71.44 %	2.06 %	$58,312.67
D10 - Conveying	80.00 %	0.00 %	$0.00
D20 - Plumbing	77.83 %	105.19 %	$1,267,790.58
D30 - HVAC	72.79 %	48.84 %	$3,206,855.01
D40 - Fire Protection	80.00 %	0.00 %	$0.00
D50 - Electrical	67.61 %	0.58 %	$26,796.80
E10 - Equipment	80.00 %	9.94 %	$93,445.81
E20 - Furnishings	82.50 %	0.00 %	$0.00
Totals:	**62.10 %**	**19.72 %**	**$6,065,284.59**

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.	59,025	100	1957	2057		42.00 %	0.00 %	42			$1,086,060
A1030	Slab on Grade	$7.73	S.F.	59,025	100	1957	2057		42.00 %	0.00 %	42			$456,263
A2010	Basement Excavation	$6.55	S.F.	59,025	100	1957	2057		42.00 %	0.00 %	42			$386,614
A2020	Basement Walls	$12.70	S.F.	59,025	100	1957	2057		42.00 %	0.00 %	42			$749,618
B1010	Floor Construction	$75.10	S.F.	59,025	100	1957	2057		42.00 %	0.15 %	42		$6,719.04	$4,432,778
B1020	Roof Construction	$13.88	S.F.	59,025	100	1957	2057		42.00 %	0.00 %	42			$819,267
B2010	Exterior Walls	$36.91	S.F.	59,025	100	1957	2057		42.00 %	1.93 %	42		$42,105.59	$2,178,613
B2020	Exterior Windows	$18.01	S.F.	59,025	40	1957	1997	2057	105.00 %	89.28 %	42		$949,047.32	$1,063,040
B2030	Exterior Doors	$1.45	S.F.	59,025	25	1957	1982	2027	48.00 %	18.75 %	12		$16,043.63	$85,586
B3010105	Built-Up	$37.76	S.F.	29,002	20	1957	1977	2028	65.00 %	30.94 %	13		$338,820.11	$1,095,116
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	$0.74	S.F.	29,002	20	1957	1977	2028	65.00 %	187.62 %	13		$40,265.68	$21,461
C1010	Partitions	$17.91	S.F.	59,025	100	1957	2057		42.00 %	0.00 %	42			$1,057,138
C1020	Interior Doors	$3.51	S.F.	59,025	40	2008	2048		82.50 %	9.21 %	33		$19,082.35	$207,178
C1030	Fittings	$3.12	S.F.	59,025	40	2008	2048		82.50 %	0.00 %	33			$184,158
C2010	Stair Construction	$1.41	S.F.	59,025	100	1957	2057		42.00 %	0.00 %	42			$83,225

Site Assessment Report - B746001;Ziegler

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3010230	Paint & Covering	$13.21	S.F.	59,025	10	1957	1967	2022	70.00 %	2.20 %	7		$17,134.15	$779,720
C3010231	Vinyl Wall Covering	$0.97	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.	1,000	30	2008	2038		76.67 %	0.00 %	23			$2,630
C3020411	Carpet	$7.30	S.F.	1,000	10	2008	2018	2020	50.00 %	0.00 %	5			$7,300
C3020412	Terrazzo & Tile	$75.52	S.F.	3,000	50	2008	2058		86.00 %	0.00 %	43			$226,560
C3020413	Vinyl Flooring	$9.68	S.F.	45,025	20	2008	2028		65.00 %	2.76 %	13		$12,017.53	$435,842
C3020414	Wood Flooring	$22.27	S.F.	6,000	25	2008	2033		72.00 %	0.00 %	18			$133,620
C3020415	Concrete Floor Finishes	$0.97	S.F.	4,000	50	1957	2007	2050	70.00 %	198.17 %	35		$7,689.07	$3,880
C3030	Ceiling Finishes	$20.97	S.F.	59,025	25	2008	2033		72.00 %	1.73 %	18		$21,471.92	$1,237,754
D1010	Elevators and Lifts	$1.53	S.F.	59,025	35	2008	2043		80.00 %	0.00 %	28			$90,308
D2010	Plumbing Fixtures	$13.52	S.F.	59,025	35	2008	2043		80.00 %	34.75 %	28		$277,302.07	$798,018
D2020	Domestic Water Distribution	$1.68	S.F.	59,025	25	2008	2033		72.00 %	255.51 %	18		$253,368.31	$99,162
D2030	Sanitary Waste	$2.90	S.F.	59,025	25	2008	2033		72.00 %	301.10 %	18		$515,398.70	$171,173
D2040	Rain Water Drainage	$2.32	S.F.	59,025	30	2008	2038		76.67 %	161.91 %	23		$221,721.50	$136,938
D3020	Heat Generating Systems	$18.67	S.F.	59,025	35	2008	2043		80.00 %	0.00 %	28			$1,101,997
D3030	Cooling Generating Systems	$24.48	S.F.	59,025	30	2008	2038		76.67 %	38.90 %	23		$562,092.50	$1,444,932
D3040	Distribution Systems	$42.99	S.F.	59,025	25	2008	2033		72.00 %	83.09 %	18		$2,108,462.72	$2,537,485
D3050	Terminal & Package Units	$11.60	S.F.	59,025	20	2008	2028		65.00 %	0.00 %	13			$684,690
D3060	Controls & Instrumentation	$13.50	S.F.	59,025	20	2008	2028		65.00 %	67.30 %	13		$536,299.79	$796,838
D4010	Sprinklers	$7.05	S.F.	59,025	35	2008	2043		80.00 %	0.00 %	28			$416,126
D4020	Standpipes	$1.01	S.F.	59,025	35	2008	2043		80.00 %	0.00 %	28			$59,615
D5010	Electrical Service/Distribution	$9.70	S.F.	59,025	30	2008	2038		76.67 %	0.00 %	23			$572,543
D5010	Electrical Service/Distribution (1)	$9.70	S.F.	59,025	30	2008	2038		76.67 %	0.00 %	23			$572,543
D5010	Electrical Service/Distribution (2)	$9.70	S.F.	59,025	30	2008	2038		76.67 %	0.00 %	23			$572,543
D5020	Lighting and Branch Wiring	$34.68	S.F.	59,025	20	2008	2028		65.00 %	0.24 %	13		$4,942.72	$2,046,987
D5030	Communications and Security	$12.99	S.F.	59,025	15	2008	2023		53.33 %	0.00 %	8			$766,735
D5090	Other Electrical Systems	$1.41	S.F.	59,025	30	2008	2038		76.67 %	26.26 %	23		$21,854.08	$83,225
E1020	Institutional Equipment	$4.82	S.F.	59,025	35	2008	2043		80.00 %	32.85 %	28		$93,445.81	$284,501
E1090	Other Equipment	$11.10	S.F.	59,025	35	2008	2043		80.00 %	0.00 %	28			$655,178
E2010	Fixed Furnishings	$2.13	S.F.	59,025	40	2008	2048		82.50 %	0.00 %	33			$125,723
								Total	**62.10 %**	**19.72 %**			**$6,065,284.59**	**$30,750,681**

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: B2020 - Exterior Windows — This system contains no images

Note: replace old exterior windows from 1990s
new windows installed in 2008 - OK

System: B3010105 - Built-Up — This system contains no images

Note: old building = 10,000sf installed in 1990s - need replacement
new building = 19,000 installed in 2008 - OK

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

Note: paint 95%
ceramic tile 5%

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

Note:

Concrete =	4,000sf	7%
VCT =	45,025sf	76%
Wood =	6,000sf	10%
Carpet =	1,000sf	2%
Ceramic tile / quarry tile =	3,000sf	5%

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

Note:

ACT (2x4)	53,025sf	90%
Painted deck or steel =	6,000sf	- 10%

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

Note: one 150KVA, 480V to 208/120V distribution transformer
one 112.5KVA, 480V to 208/120V distribution transformer
Two 15KVA, 480V to 208/120V distribution transformer

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:	**$6,065,285**	**$0**	**$0**	**$0**	**$0**	**$9,309**	**$0**	**$1,054,853**	**$1,068,404**	**$0**	**$0**	**$8,197,851**
*** 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	$6,719	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$6,719**
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	$42,106	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$42,106**
B2020 - Exterior Windows	$949,047	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$949,047**
B2030 - Exterior Doors	$16,044	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$16,044**
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	$338,820	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$338,820**
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	$40,266	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$40,266**
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**

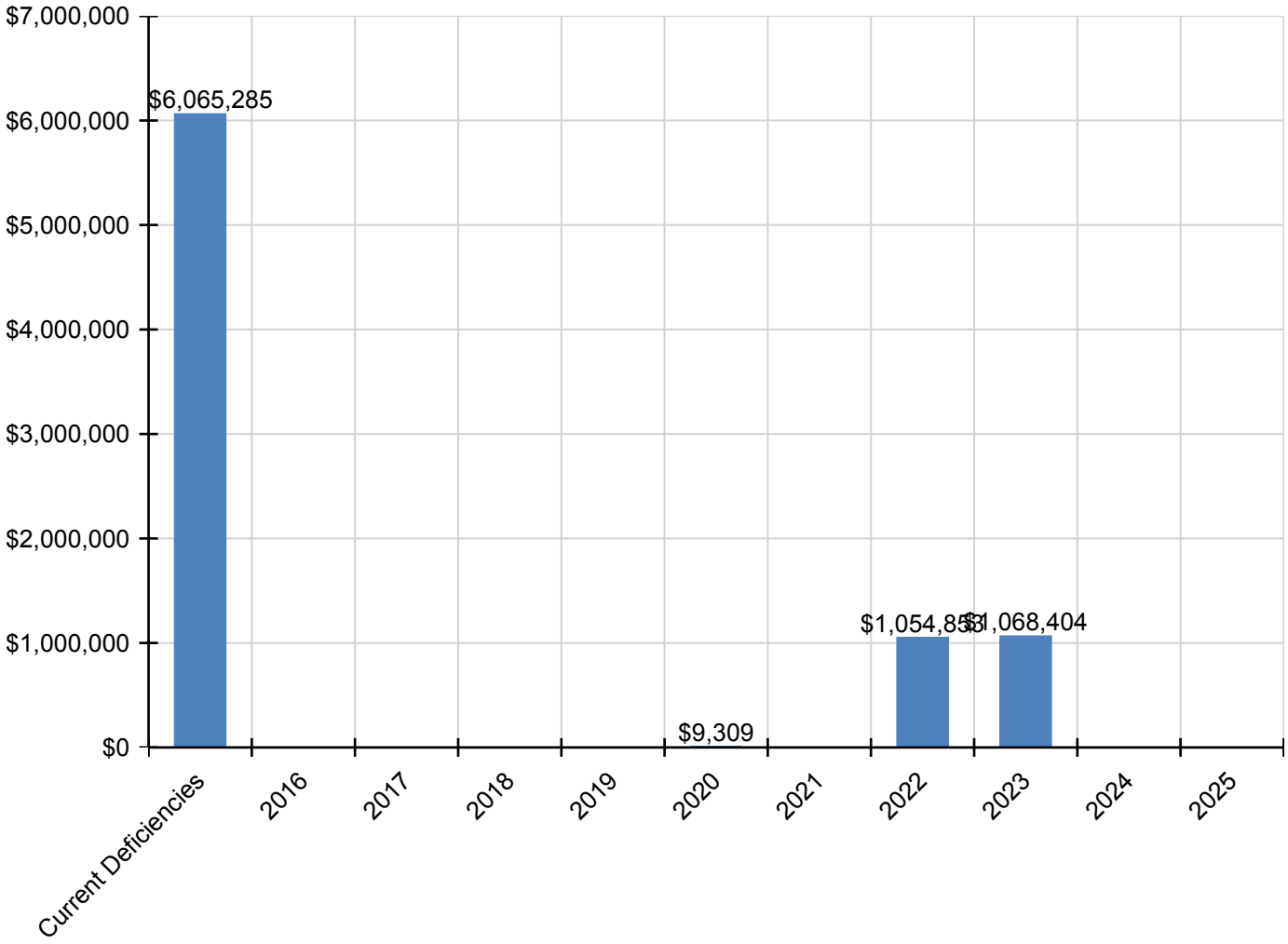
C1020 - Interior Doors	$19,082	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$19,082**
C1030 - Fittings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$17,134	$0	$0	$0	$0	$0	$0	$1,054,853	$0	$0	$0	**$1,071,987**
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	$9,309	$0	$0	$0	$0	$0	**$9,309**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$12,018	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$12,018**
C3020414 - Wood Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020415 - Concrete Floor Finishes	$7,689	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$7,689**
C3030 - Ceiling Finishes	$21,472	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$21,472**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D10 - Conveying	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D1010 - Elevators and Lifts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$277,302	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$277,302**
D2020 - Domestic Water Distribution	$253,368	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$253,368**
D2030 - Sanitary Waste	$515,399	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$515,399**
D2040 - Rain Water Drainage	$221,722	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$221,722**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3030 - Cooling Generating Systems	$562,093	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$562,093**
D3040 - Distribution Systems	$2,108,463	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,108,463**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$536,300	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$536,300**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4020 - Standpipes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

D50 - Electrical	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution (2)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5020 - Lighting and Branch Wiring	$4,943	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,943**
D5030 - Communications and Security	$0	$0	$0	$0	$0	$0	$0	$0	$1,068,404	$0	$0	**$1,068,404**
D5090 - Other Electrical Systems	$21,854	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$21,854**
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	$93,446	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$93,446**
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

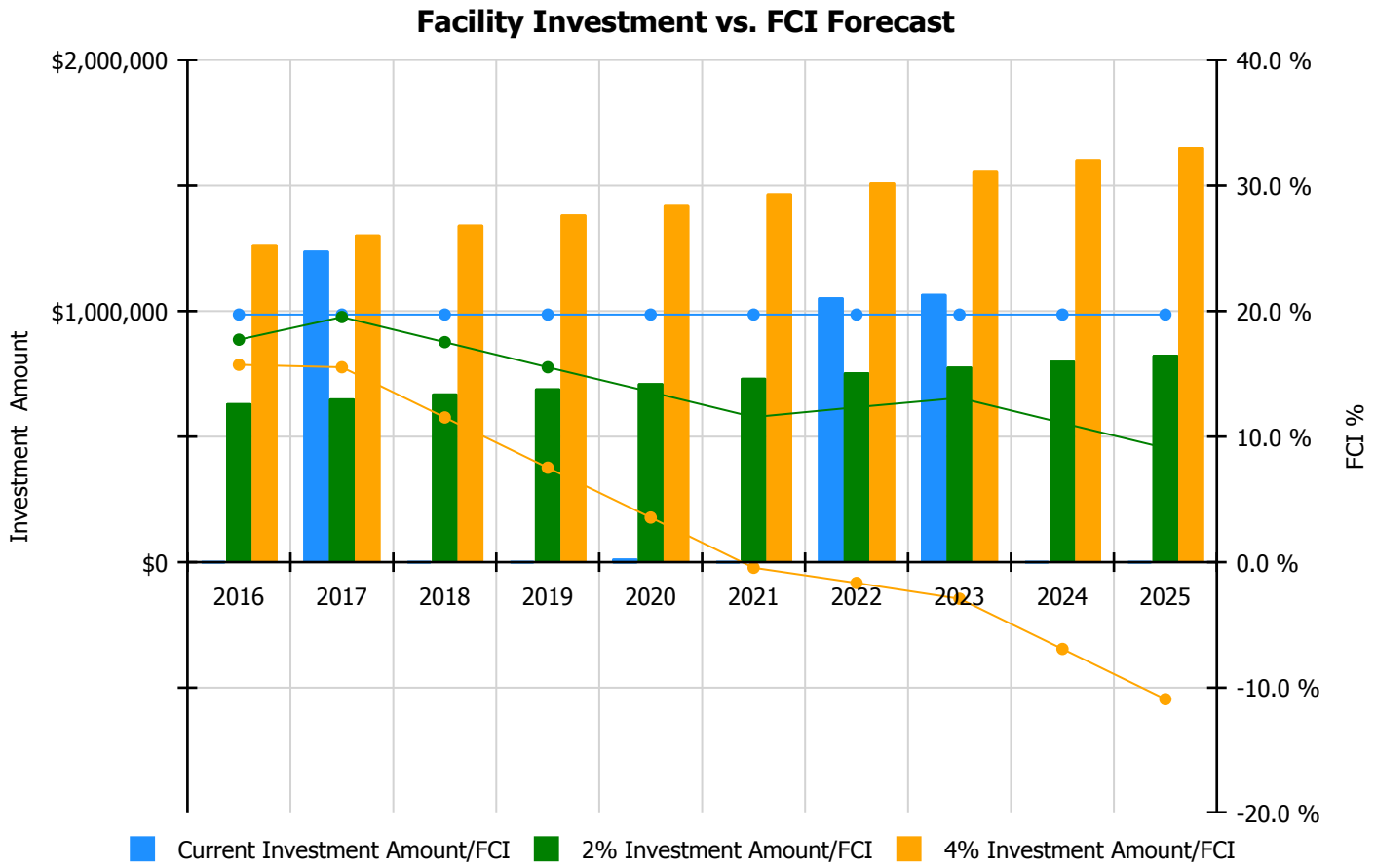
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

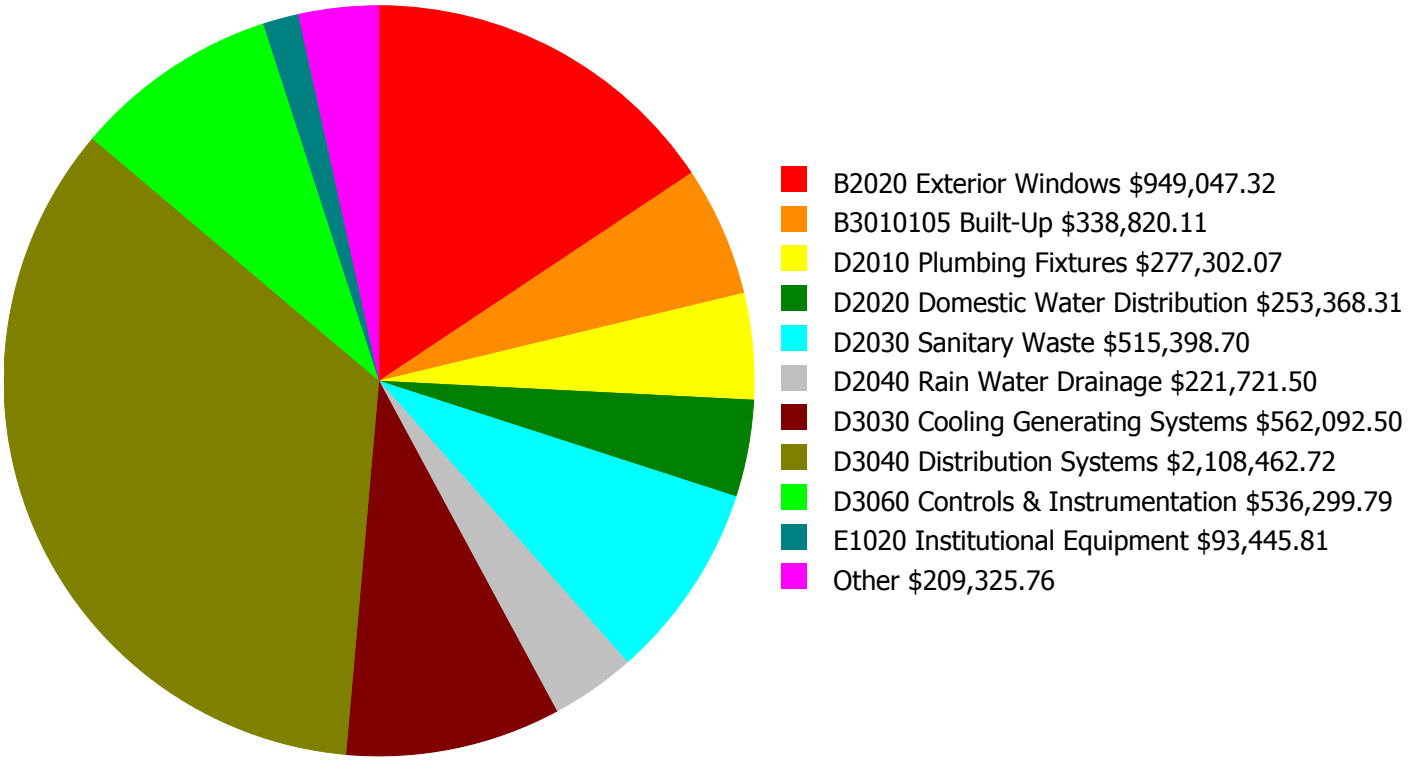
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 19.72%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$633,464.00	17.72 %	$1,266,928.00	15.72 %
2017	$1,240,557	$652,468.00	19.53 %	$1,304,936.00	15.53 %
2018	$0	$672,042.00	17.53 %	$1,344,084.00	11.53 %
2019	$0	$692,203.00	15.53 %	$1,384,406.00	7.53 %
2020	$9,309	$712,969.00	13.55 %	$1,425,939.00	3.55 %
2021	$0	$734,358.00	11.55 %	$1,468,717.00	-0.45 %
2022	$1,054,853	$756,389.00	12.34 %	$1,512,778.00	-1.66 %
2023	$1,068,404	$779,081.00	13.08 %	$1,558,162.00	-2.92 %
2024	$0	$802,453.00	11.08 %	$1,604,907.00	-6.92 %
2025	$0	$826,527.00	9.08 %	$1,653,054.00	-10.92 %
Total:	**$3,373,123**	**$7,261,954.00**		**$14,523,911.00**	

Deficiency Summary by System

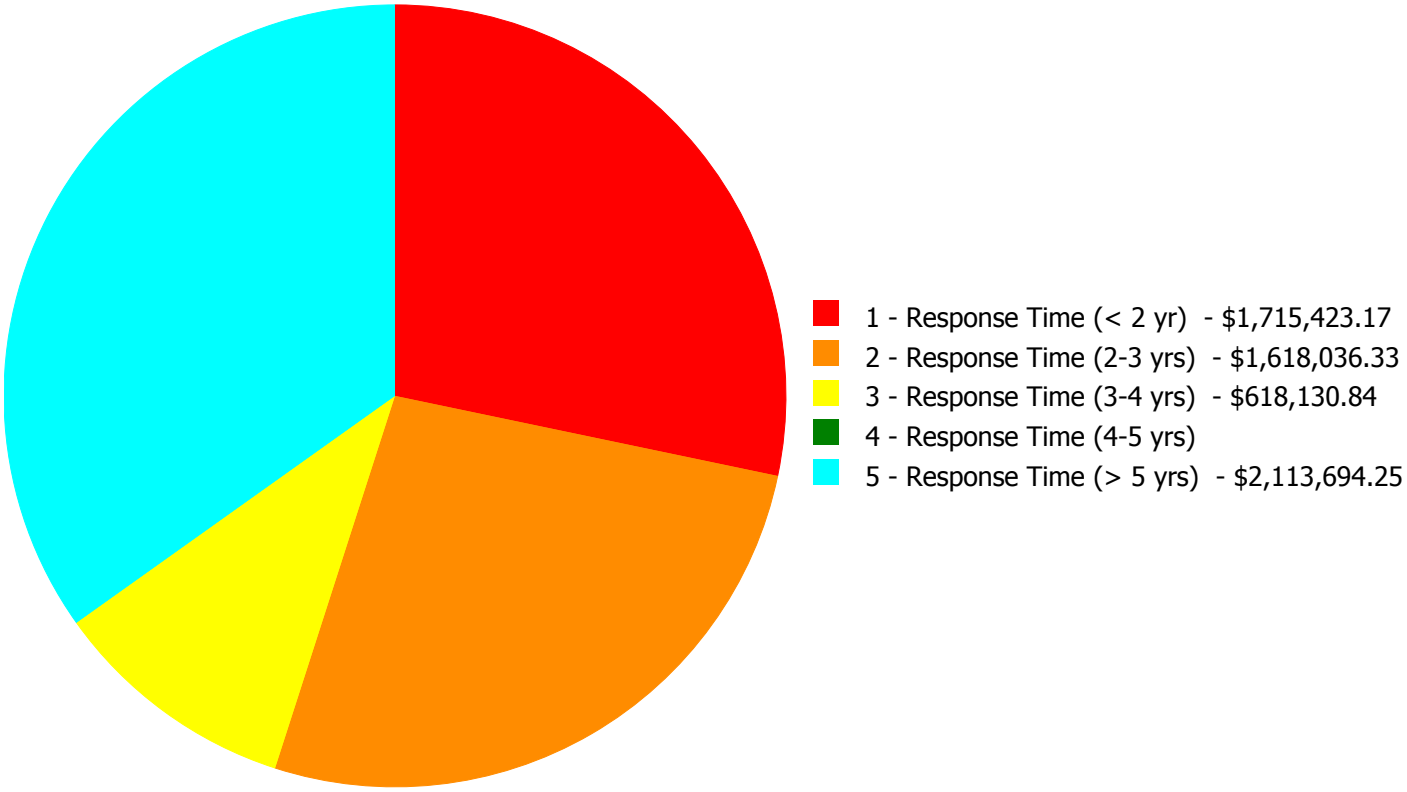
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $6,065,284.59

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: $6,065,284.59

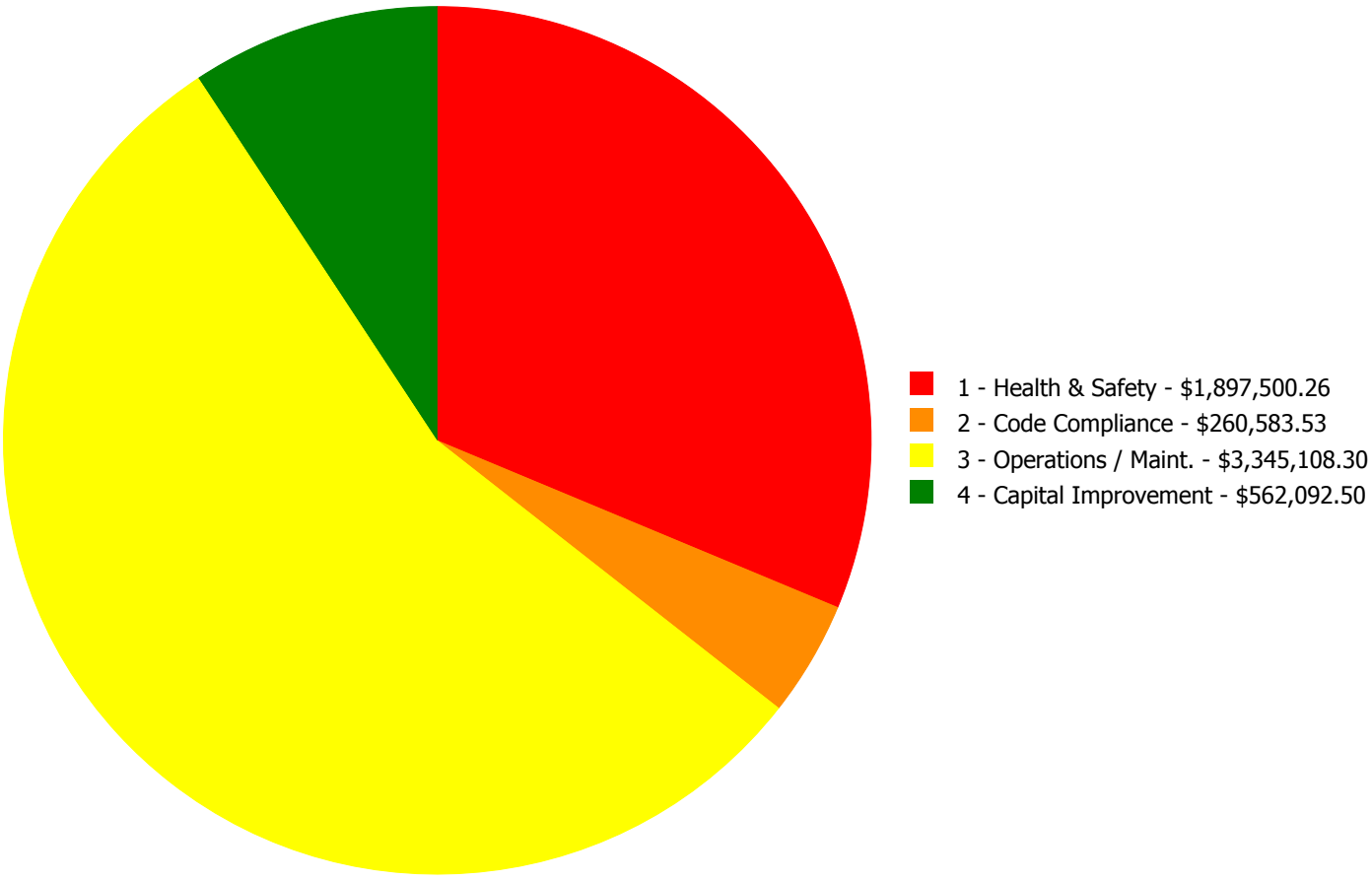
Deficiency By Priority Investment Table

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
B1010	Floor Construction	$0.00	$6,719.04	$0.00	$0.00	$0.00	$6,719.04
B2010	Exterior Walls	$0.00	$42,105.59	$0.00	$0.00	$0.00	$42,105.59
B2020	Exterior Windows	$0.00	$949,047.32	$0.00	$0.00	$0.00	$949,047.32
B2030	Exterior Doors	$0.00	$16,043.63	$0.00	$0.00	$0.00	$16,043.63
B3010105	Built-Up	$338,820.11	$0.00	$0.00	$0.00	$0.00	$338,820.11
B3020	Roof Openings	$40,265.68	$0.00	$0.00	$0.00	$0.00	$40,265.68
C1020	Interior Doors	$0.00	$19,082.35	$0.00	$0.00	$0.00	$19,082.35
C3010230	Paint & Covering	$0.00	$17,134.15	$0.00	$0.00	$0.00	$17,134.15
C3020413	Vinyl Flooring	$0.00	$12,017.53	$0.00	$0.00	$0.00	$12,017.53
C3020415	Concrete Floor Finishes	$0.00	$7,689.07	$0.00	$0.00	$0.00	$7,689.07
C3030	Ceiling Finishes	$0.00	$11,897.86	$9,574.06	$0.00	$0.00	$21,471.92
D2010	Plumbing Fixtures	$0.00	$0.00	$0.00	$0.00	$277,302.07	$277,302.07
D2020	Domestic Water Distribution	$0.00	$0.00	$0.00	$0.00	$253,368.31	$253,368.31
D2030	Sanitary Waste	$0.00	$0.00	$0.00	$0.00	$515,398.70	$515,398.70
D2040	Rain Water Drainage	$0.00	$0.00	$0.00	$0.00	$221,721.50	$221,721.50
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$562,092.50	$562,092.50
D3040	Distribution Systems	$1,216,094.77	$0.00	$608,556.78	$0.00	$283,811.17	$2,108,462.72
D3060	Controls & Instrumentation	$0.00	$536,299.79	$0.00	$0.00	$0.00	$536,299.79
D5020	Lighting and Branch Wiring	$4,942.72	$0.00	$0.00	$0.00	$0.00	$4,942.72
D5090	Other Electrical Systems	$21,854.08	$0.00	$0.00	$0.00	$0.00	$21,854.08
E1020	Institutional Equipment	$93,445.81	$0.00	$0.00	$0.00	$0.00	$93,445.81
	Total:	$1,715,423.17	$1,618,036.33	$618,130.84	$0.00	$2,113,694.25	$6,065,284.59

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: $6,065,284.59

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: old building - roof
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Remove and Replace Built Up Roof
Qty: 10,000.00
Unit of Measure: S.F.
Estimate: $338,820.11
Assessor Name: System
Date Created: 02/11/2016

Notes: Replace roof on original building (10,00sf)

System: B3020 - Roof Openings

Location: new building - roof
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 1 - Response Time (< 2 yr)
Correction: Install safety guard rails at roof perimeter (OSHA required if roof hatch is 10’ from roof edge).
Qty: 60.00
Unit of Measure: L.F.
Estimate: $40,265.68
Assessor Name: System
Date Created: 02/11/2016

Notes: Provide guard rails around equipment on roof closer than 10’ from edge of roof (2 locations, 80ft)

System: D3040 - Distribution Systems

Location: Old Building Classrooms

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

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

Qty: 25,000.00

Unit of Measure: S.F.

Estimate: $1,216,094.77

Assessor Name: System

Date Created: 02/10/2016

Notes: Replace the existing unit ventilators in service in the older section of the building for nearly 60 years with new units designed to provide adequate ventilation per ASHRAE Std 62. The new units should be equipped with hot water / chilled water coils and integral heat recovery wheels. Install circulating pumps, distribution piping and controls for the new coils.

System: D5020 - Lighting and Branch Wiring

Location: Kindergarten classrooms

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Replace Wiring Device

Qty: 1.00

Unit of Measure: Ea.

Estimate: $4,942.72

Assessor Name: System

Date Created: 01/22/2016

Notes: Replace all existing receptacles with GFCI type receptacle in areas subject to kid access. Estimated 30 receptacles.

System: D5090 - Other Electrical Systems

Location: Roof

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Repair Lightning Protection System

Qty: 1.00

Unit of Measure: Job

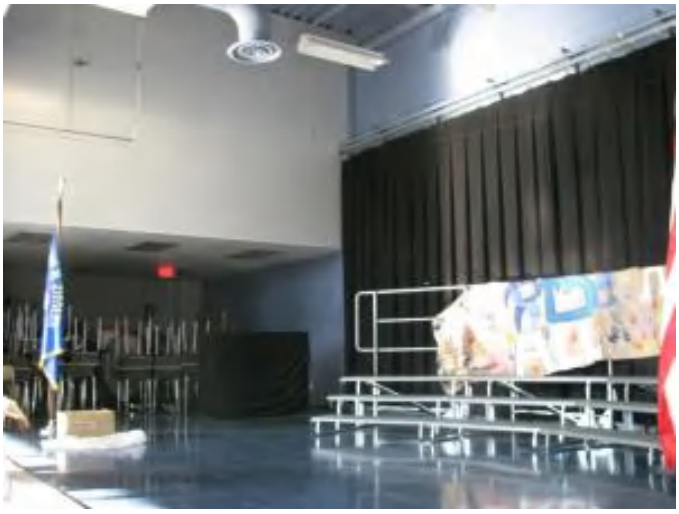
Estimate: $21,854.08

Assessor Name: System

Date Created: 01/22/2016

Notes: Provide lightning protection studies to ascertain adequacy of existing systems.

System: E1020 - Institutional Equipment



Location: Multipurpose Room

Distress: Inadequate

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Add/Replace Stage Theatrical Lighting System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $93,445.81

Assessor Name: System

Date Created: 01/22/2016

Notes: Provide new modern stage lighting with automatic dimmer bank controller in the Auditorium.

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

System: B1010 - Floor Construction

Location: old building - basement

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove and replace elevated concrete deck with one way concrete beams and slab

Qty: 25.00

Unit of Measure: S.F.

Estimate: $6,719.04

Assessor Name: System

Date Created: 02/11/2016

Notes: Repair cracked concrete beam in basement in old building

System: B2010 - Exterior Walls

Location: old building - exterior plaster wall

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior insulating finish system (EIFS)

Qty: 500.00

Unit of Measure: S.F.

Estimate: $31,522.85

Assessor Name: System

Date Created: 02/11/2016

Notes: Replace plaster system on north wall of original building (500sf)

System: B2010 - Exterior Walls

Location: old building - brick walls

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 200.00

Unit of Measure: S.F.

Estimate: $6,457.90

Assessor Name: System

Date Created: 02/11/2016

Notes: Repair cracked brick on old building exterior walls (200sf)

System: B2010 - Exterior Walls

Location: brick walls

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Sooty and dirty walls - powerwash

Qty: 2,000.00

Unit of Measure: S.F.

Estimate: $2,187.47

Assessor Name: System

Date Created: 02/11/2016

Notes: Powerwash brick walls on new addition below first floor windows, on old building facing Saul St., and window sills where dirty (2,000sf)

System: B2010 - Exterior Walls

Location: old building - lintels

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: 60.00

Unit of Measure: S.F.

Estimate: $1,937.37

Assessor Name: System

Date Created: 02/11/2016

Notes: Repoint lintels on original building facing Saul St. (30ft)

System: B2020 - Exterior Windows

Location: old building - windows

Distress: Beyond Service Life

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: 150.00

Unit of Measure: Ea.

Estimate: $901,387.50

Assessor Name: System

Date Created: 02/11/2016

Notes: Replace all windows around the old building (150 – 3’x7’)

System: B2020 - Exterior Windows

Location: new building - windows facing playground

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Replace security screens

Qty: 300.00

Unit of Measure: S.F.

Estimate: $46,051.91

Assessor Name: System

Date Created: 02/11/2016

Notes: Provide security screens on (large, fixed) new addition first floor windows facing playground (300sf)

System: B2020 - Exterior Windows

Location: new building - cafetorium window

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace glazing - broken or plywood covered - pick the appropriate material

Qty: 25.00

Unit of Measure: S.F.

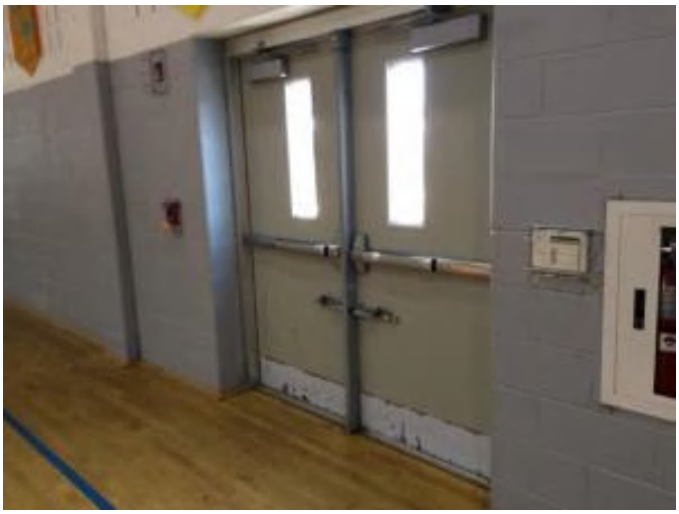
Estimate: $1,607.91

Assessor Name: System

Date Created: 02/11/2016

Notes: Replace broken window in cafetorium (25sf)

System: B2030 - Exterior Doors



Location: exterior doors

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace hardware with compliant hardware, paint and weatherstrip - per leaf

Qty: 18.00

Unit of Measure: Ea.

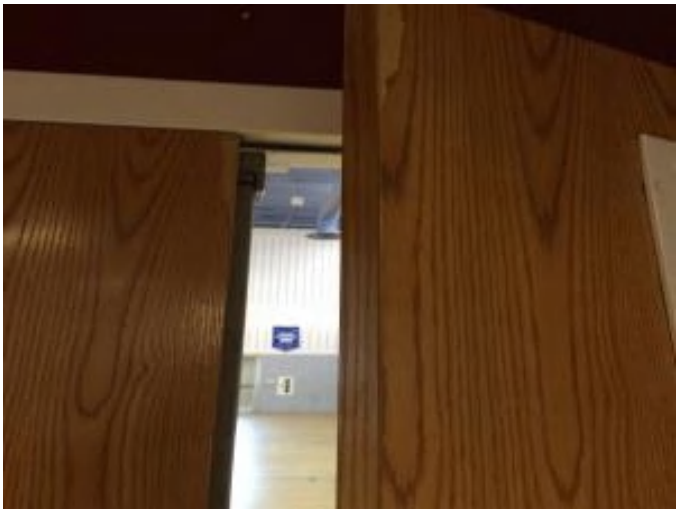
Estimate: $16,043.63

Assessor Name: System

Date Created: 02/11/2016

Notes: Repaint all exterior metal doors and metal frames; replace all weatherstripping (18 3x7)

System: C1020 - Interior Doors



Location: new building - gym doors

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 4.00

Unit of Measure: Ea.

Estimate: $19,082.35

Assessor Name: System

Date Created: 02/11/2016

Notes: Replace damaged doors and hardware in gymnasium (4 3’x7’)

System: C3010230 - Paint & Covering

Location: new building walls

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.

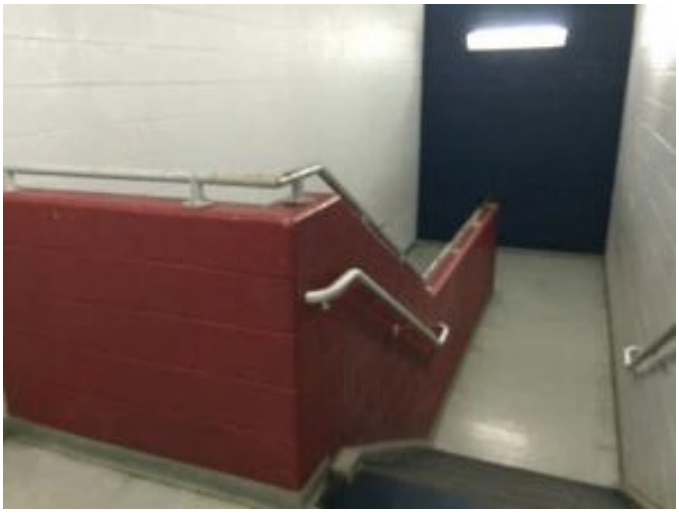
Estimate: $17,134.15

Assessor Name: System

Date Created: 02/11/2016

Notes: Repair and repaint damaged gyp bd walls in new addition corridor and classroom walls (2,000sf)

System: C3020413 - Vinyl Flooring



Location: floors

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace VCT

Qty: 1,000.00

Unit of Measure: S.F.

Estimate: $12,017.53

Assessor Name: System

Date Created: 02/11/2016

Notes: Replace damaged VCT in miscellaneous areas in both buildings (1000sf)

System: C3020415 - Concrete Floor Finishes

Location: old building - basement

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Clean and reseal concrete floors

Qty: 2,000.00

Unit of Measure: S.F.

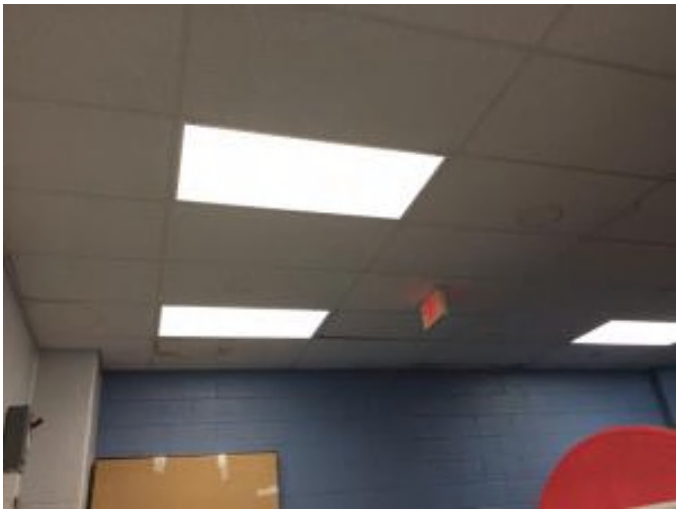
Estimate: $7,689.07

Assessor Name: System

Date Created: 02/11/2016

Notes: Strip and reseal concrete floors in old basement (2,000sf)

System: C3030 - Ceiling Finishes



Location: new building - ceilings

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: 1,000.00

Unit of Measure: S.F.

Estimate: $11,897.86

Assessor Name: System

Date Created: 02/11/2016

Notes: Replace stained 2x4 acoustical ceiling tiles in classrooms and cafetorium in new addition (1,000sf)

System: D3060 - Controls & Instrumentation

This deficiency has no image.

Location:	Old Building
Distress:	Beyond Service Life
Category:	3 - Operations / Maint.
Priority:	2 - Response Time (2-3 yrs)
Correction:	Replace pneumatic controls with DDC (75KSF)
Qty:	25,000.00
Unit of Measure:	S.F.
Estimate:	$536,299.79
Assessor Name:	System
Date Created:	02/10/2016

Notes: Replace the pneumatic controls for the HVAC systems in service in the older section of the building for nearly 60 years with modern DDC modules, valves and actuators to improve reliability and energy efficiency. Extend the CM3 building automation system (BAS) to provide communication interface for these areas to the preferred system in use throughout the District.

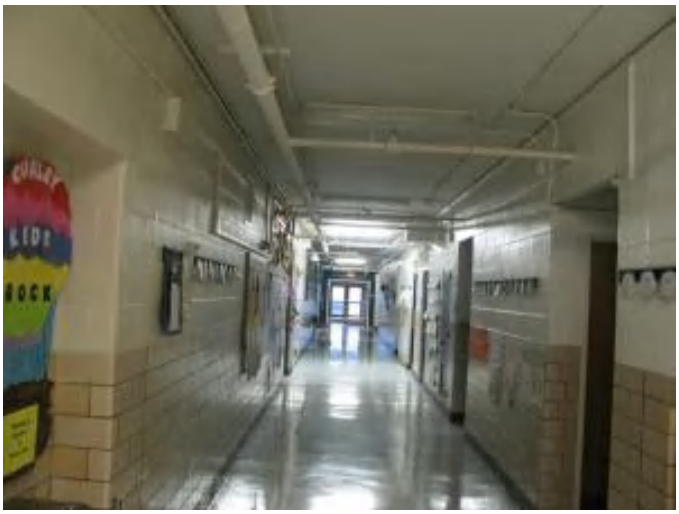
Priority 3 - Response Time (3-4 yrs):

System: C3030 - Ceiling Finishes

Location: old building - ceilings
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 3 - Response Time (3-4 yrs)
Correction: Re-paint ceilings - SF of ceilings
Qty: 2,000.00
Unit of Measure: S.F.
Estimate: $9,574.06
Assessor Name: System
Date Created: 02/11/2016

Notes: Repaint ceilings with peeling paint in original building (2,000sf)

System: D3040 - Distribution Systems



Location: Corridors
Distress: Life Safety / NFPA / PFD
Category: 1 - Health & Safety
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace Rooftop Unit (15T) and air terminals
Qty: 30.00
Unit of Measure: TonAC
Estimate: $608,556.78
Assessor Name: System
Date Created: 02/10/2016

Notes: Provide ventilation for the corridors and entryways by installing two RTAHUs. Remove the gravity roof ventilators and seal air transfer openings through the corridor walls.

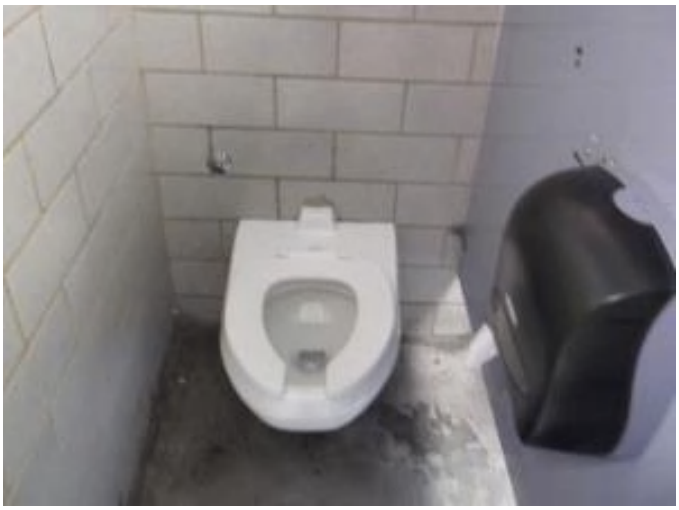
Priority 5 - Response Time (> 5 yrs):

System: D2010 - Plumbing Fixtures

Location: Restrooms - Old Building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 5 - Response Time (> 5 yrs)
Correction: Replace lavatory - with finishes
Qty: 16.00
Unit of Measure: Ea.
Estimate: $131,132.65
Assessor Name: System
Date Created: 02/10/2016

Notes: Replace the original wall hung lavatories and wheel handle faucets with low flow fixtures.

System: D2010 - Plumbing Fixtures



Location: Restrooms - Old Building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 5 - Response Time (> 5 yrs)
Correction: Remove and replace or replace water closet - quantify additional units
Qty: 14.00
Unit of Measure: Ea.
Estimate: $104,470.07
Assessor Name: System
Date Created: 02/10/2016

Notes: Replace the original water closets in the restrooms with low flow fixtures.

System: D2010 - Plumbing Fixtures

Location: Restrooms - Old Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove and replace or replace stall or floor type urinal

Qty: 8.00

Unit of Measure: Ea.

Estimate: $41,699.35

Assessor Name: System

Date Created: 02/10/2016

Notes: Replace the original wall hung urinals with low flow fixtures.

System: D2020 - Domestic Water Distribution

Location: Old Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace domestic water piping (75 KSF)

Qty: 50,000.00

Unit of Measure: S.F.

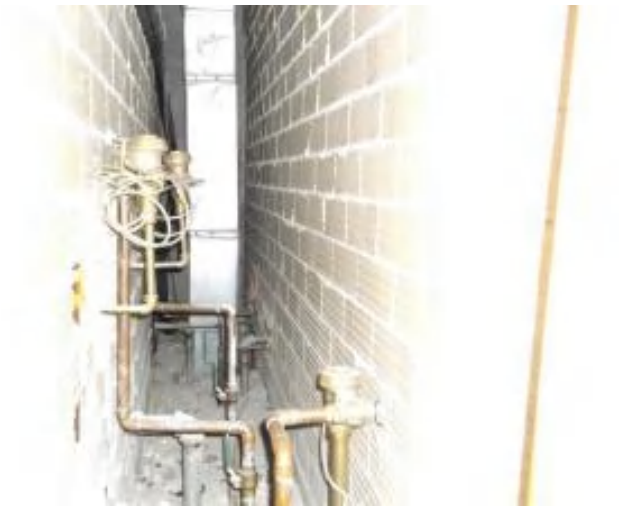
Estimate: $253,368.31

Assessor Name: System

Date Created: 02/10/2016

Notes: Replace the original galvanized steel domestic water piping in service for nearly 60 years.

System: D2030 - Sanitary Waste



Location: Old Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 60,150.00

Unit of Measure: S.F.

Estimate: $295,080.85

Assessor Name: System

Date Created: 02/10/2016

Notes: Perform a detailed examination of the original galvanized steel sanitary waste piping in service in the older section of the building for nearly 60 years using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

System: D2030 - Sanitary Waste

This deficiency has no image.

Location: Site

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install backwater prevention system to prevent storm water from backing up into the sanitary sewer system - 8" - change the pipe lengths if necessary - assumes 100 SF hardscape repair

Qty: 1.00

Unit of Measure: Ea.

Estimate: $220,317.85

Assessor Name: System

Date Created: 02/10/2016

Notes: Provide a new manhole and sanitary waste piping to separate the storm and sanitary sewer systems to avoid backups through the drains on the lower level.

System: D2040 - Rain Water Drainage

Location: Old Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 20,000.00

Unit of Measure: S.F.

Estimate: $221,721.50

Assessor Name: System

Date Created: 02/10/2016

Notes: Perform a detailed examination of the original galvanized steel storm drainage piping in service in the older section of the building for nearly 60 years using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

System: D3030 - Cooling Generating Systems

Location: Old 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: 25,000.00

Unit of Measure: S.F.

Estimate: $562,092.50

Assessor Name: System

Date Created: 02/10/2016

Notes: Install a second evaporative chiller with two refrigerant circuits on the roof and chilled water distribution piping and pumps located in the boiler room to supply air conditioning to the new unit ventilators proposed for the older section of the building.

System: D3040 - Distribution Systems

Location: Old Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 30,000.00

Unit of Measure: S.F.

Estimate: $283,811.17

Assessor Name: System

Date Created: 02/10/2016

Notes: Perform additional testing of the steam and condensate piping in service in the older section of the building for nearly 60 years to locate and replace any damaged sections and to further quantify the extent of potential failures.

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D3020 Heat Generating Systems	Boiler, cast iron, gas & oil, steam, 3270 MBH	2.00	Ea.	B-2	Weil McLain	94-1294			35	2008	2043	$106,126.00	$233,477.20
D3020 Heat Generating Systems	Boiler, cast iron, gas & oil, steam, 3270 MBH	2.00	Ea.	B-1	Weil McLain	94-1294			35	2008	2043	$106,126.00	$233,477.20
D3030 Cooling Generating Systems	Chiller, reciprocating, air cooled, standard controls, 130 ton	1.00	Ea.	CH-1	Aaon	LL-115-3-0-DBOA-000	200705-BABK00218		30	2008	2038	$135,931.60	$149,524.76
D3040 Distribution Systems	Heat recovery package, air to air, enthalpy recovery wheel, 10,000 max CFM	1.00	Ea.	ERU-1	Semco	EPDHC-13	44041/PJ15533		25	2008	2033	$17,902.50	$19,692.75
D5010 Electrical Service/Distribution	Switchboards, pressure switch, 4 wire, with ground fault, 120/208 V, 800 amp, incl CT compartment, excl CT's or PT's	2.00	Ea.	Boiler Room					30	1957	2037	$25,212.60	$55,467.72
												Total:	**$691,639.63**

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):	33,600
Year Built:	1957
Last Renovation:	2008
Replacement Value:	$559,371
Repair Cost:	$49,046.55
Total FCI:	8.77 %
Total RSLI:	0.00 %

Description:

Attributes:

General Attributes:

Bldg ID:	S746001	Site ID:	S746001

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	0.00 %	11.87 %	$49,046.55
G40 - Site Electrical Utilities	0.00 %	0.00 %	$0.00
Totals:	**0.00 %**	**8.77 %**	**$49,046.55**

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.	2,600	30				0.00 %	0.00 %				$29,952
G2020	Parking Lots	$7.65	S.F.	2,900	30				0.00 %	0.00 %				$22,185
G2030	Pedestrian Paving	$11.52	S.F.	14,000	40				0.00 %	2.09 %			$3,364.51	$161,280
G2040	Site Development	$4.36	S.F.	33,600	25				0.00 %	31.18 %			$45,682.04	$146,496
G2050	Landscaping & Irrigation	$3.78	S.F.	14,100	15				0.00 %	0.00 %				$53,298
G4020	Site Lighting	$3.58	S.F.	33,600	30				0.00 %	0.00 %				$120,288
G4030	Site Communications & Security	$0.77	S.F.	33,600	30				0.00 %	0.00 %				$25,872
								Total	**0.00 %**	**8.77 %**			**$49,046.55**	**$559,371**

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.

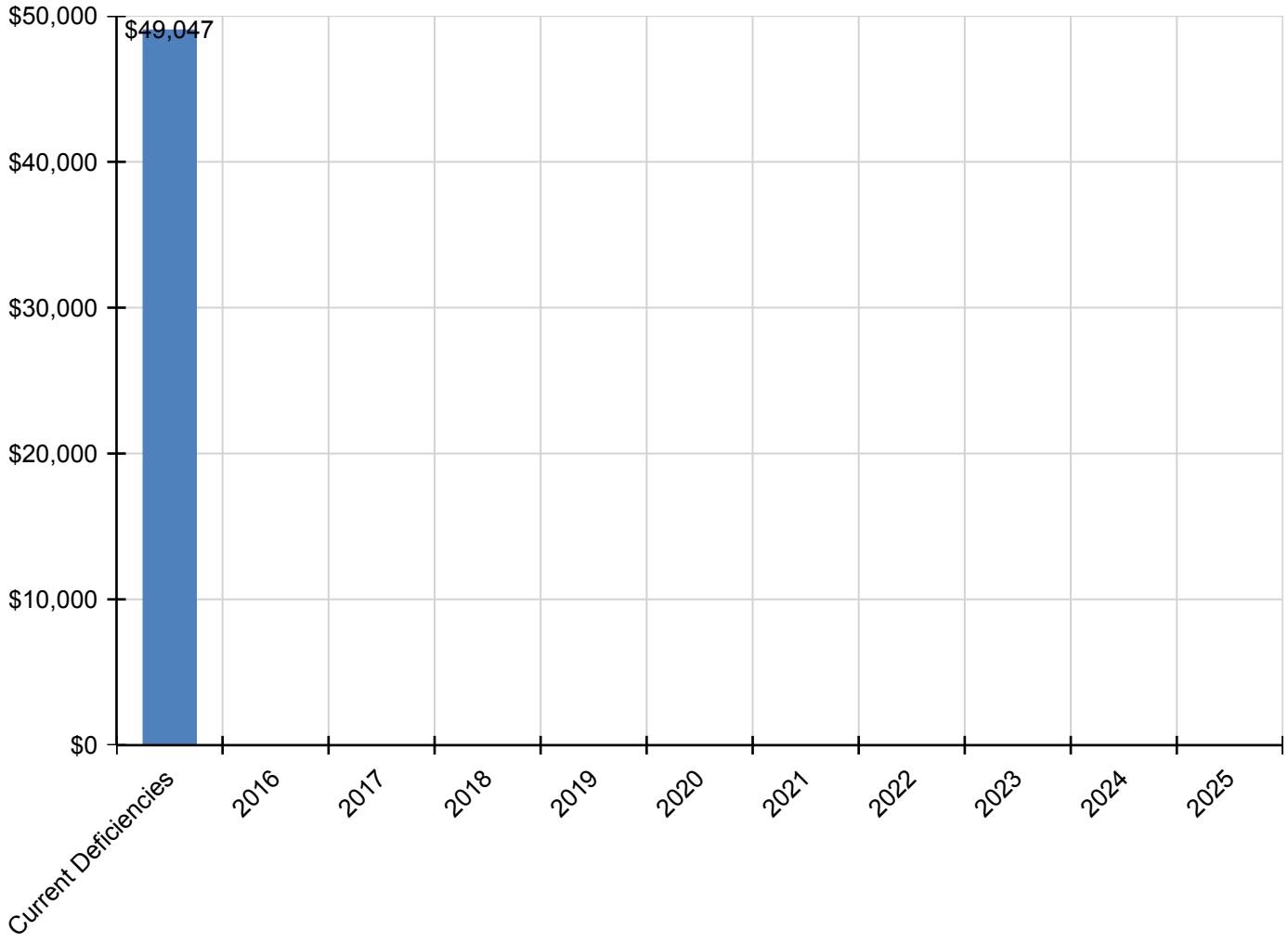
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$49,047**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$49,047**
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	$3,365	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,365**
G2040 - Site Development	$45,682	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$45,682**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

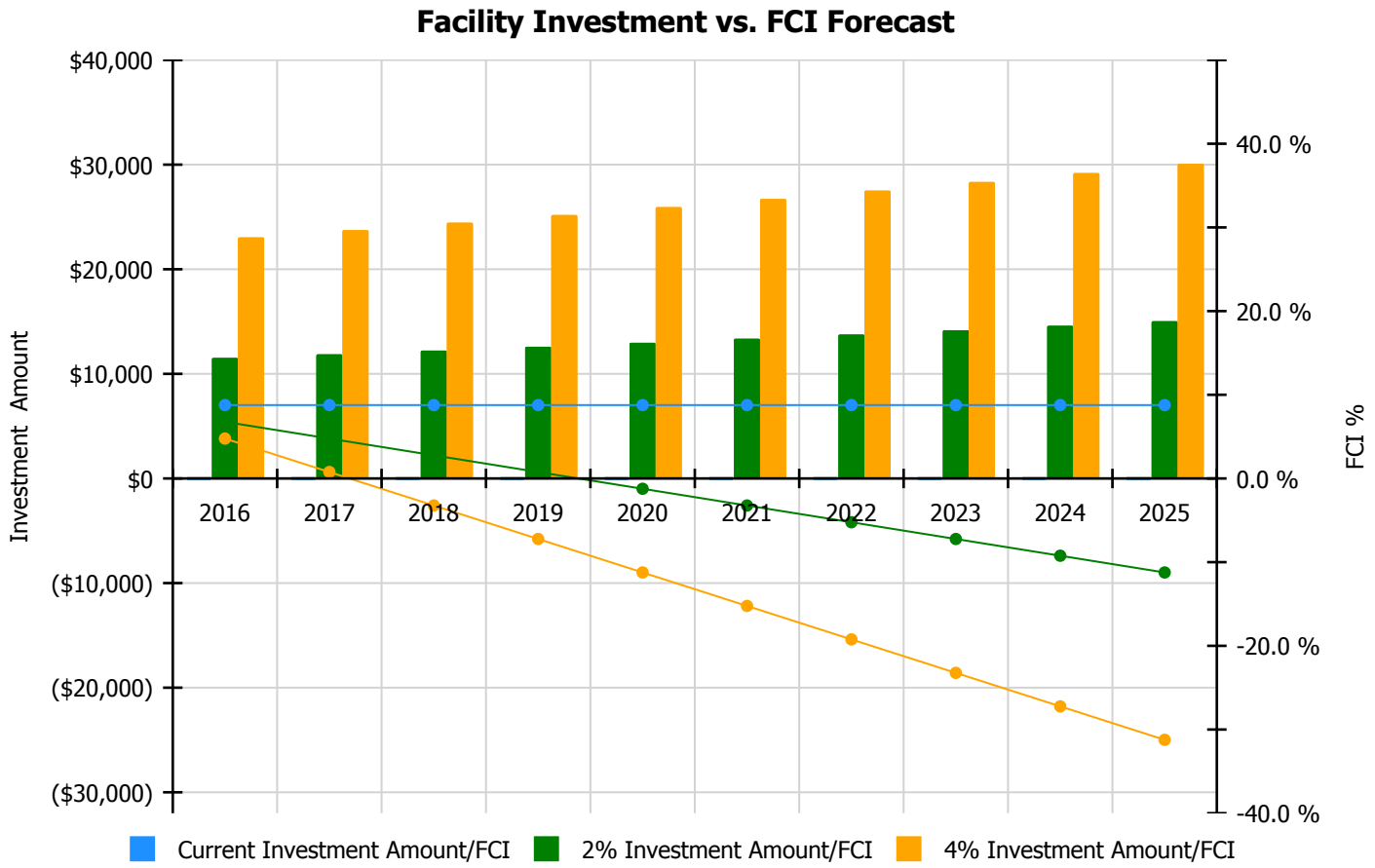
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

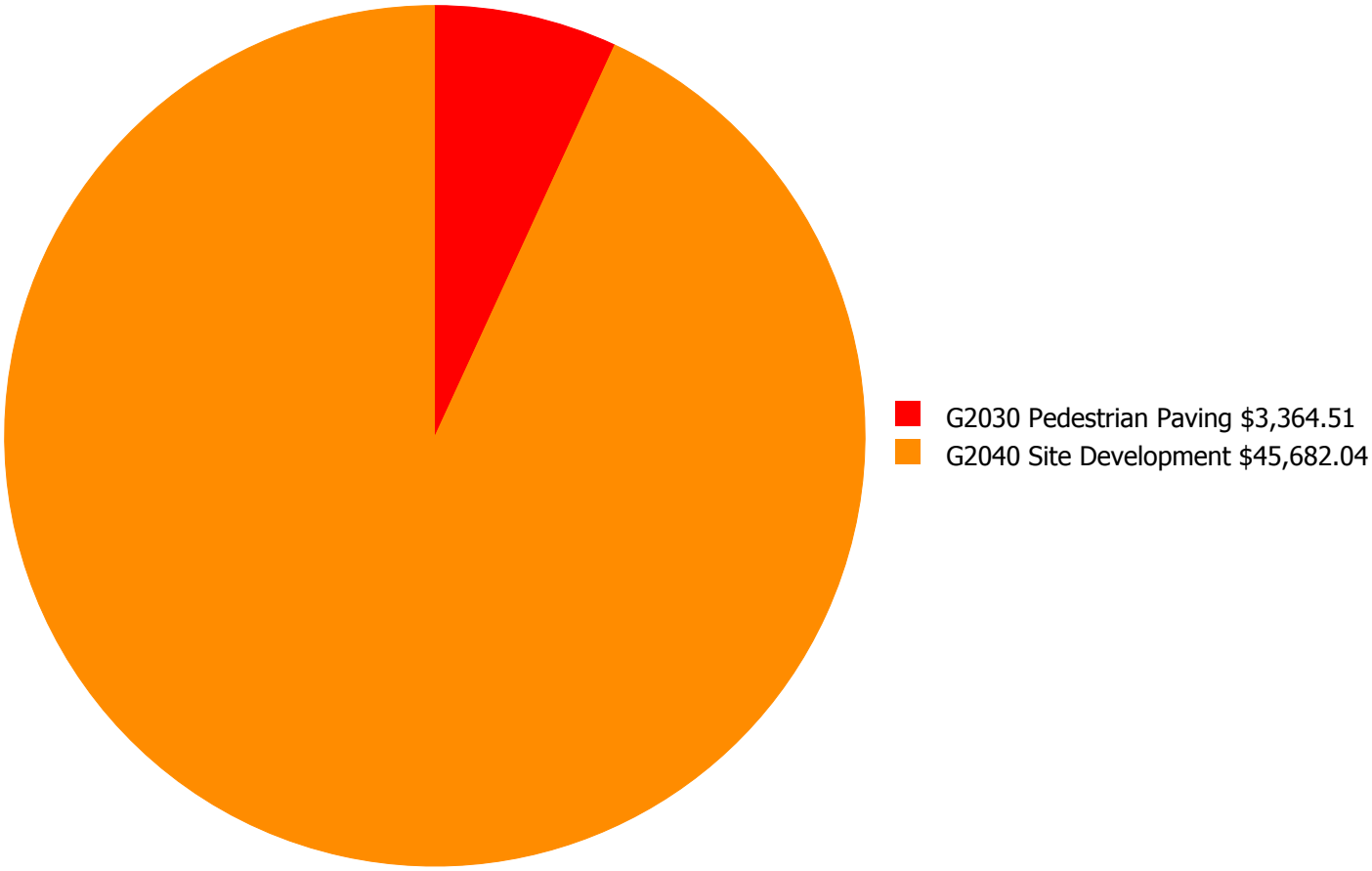
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 8.77%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$11,523.00	6.77 %	$23,046.00	4.77 %
2017	$0	$11,869.00	4.77 %	$23,737.00	0.77 %
2018	$0	$12,225.00	2.77 %	$24,450.00	-3.23 %
2019	$0	$12,592.00	0.77 %	$25,183.00	-7.23 %
2020	$0	$12,969.00	-1.23 %	$25,939.00	-11.23 %
2021	$0	$13,358.00	-3.23 %	$26,717.00	-15.23 %
2022	$0	$13,759.00	-5.23 %	$27,518.00	-19.23 %
2023	$0	$14,172.00	-7.23 %	$28,344.00	-23.23 %
2024	$0	$14,597.00	-9.23 %	$29,194.00	-27.23 %
2025	$0	$15,035.00	-11.23 %	$30,070.00	-31.23 %
Total:	**$0**	**$132,099.00**		**$264,198.00**	

Deficiency Summary by System

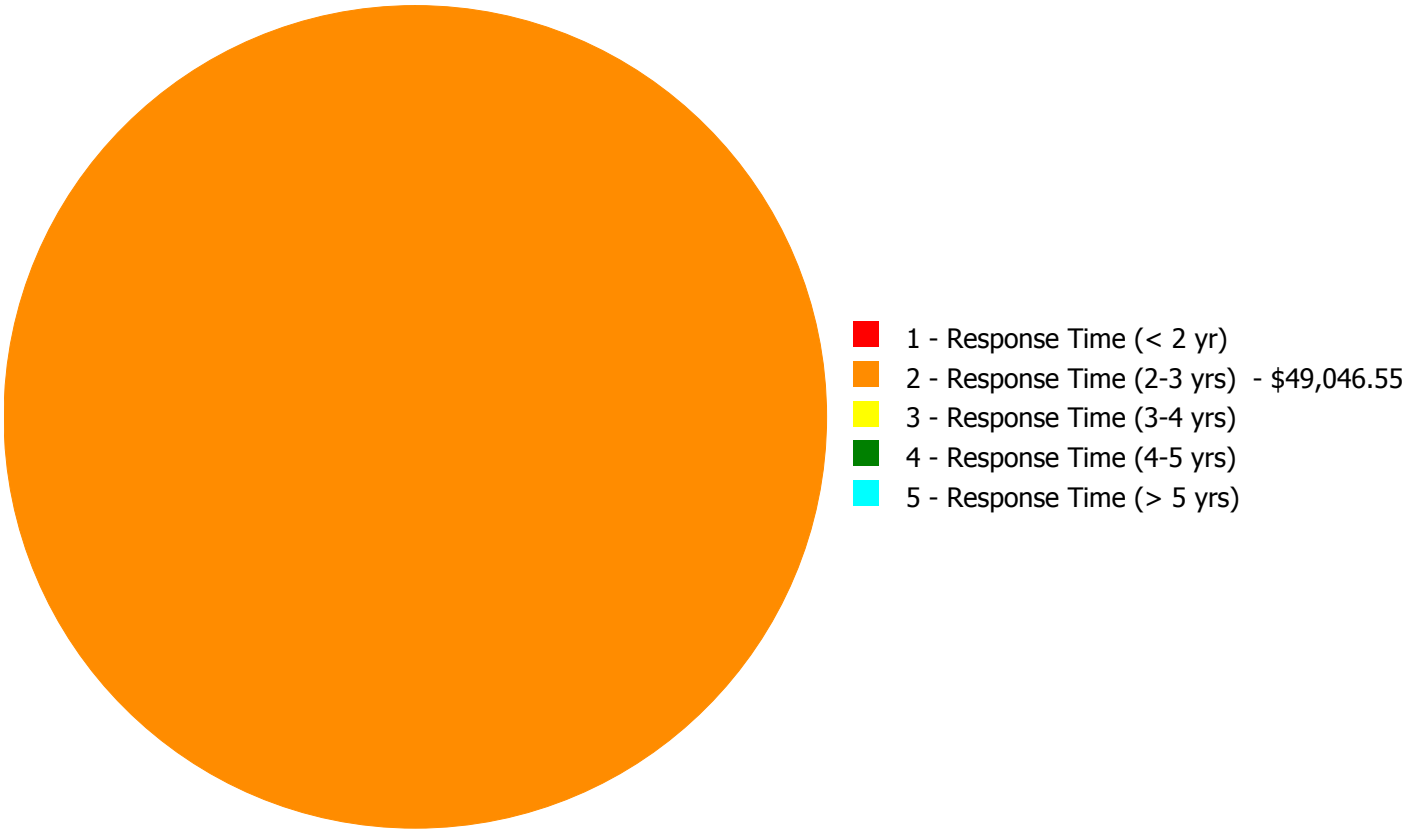
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $49,046.55

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: $49,046.55

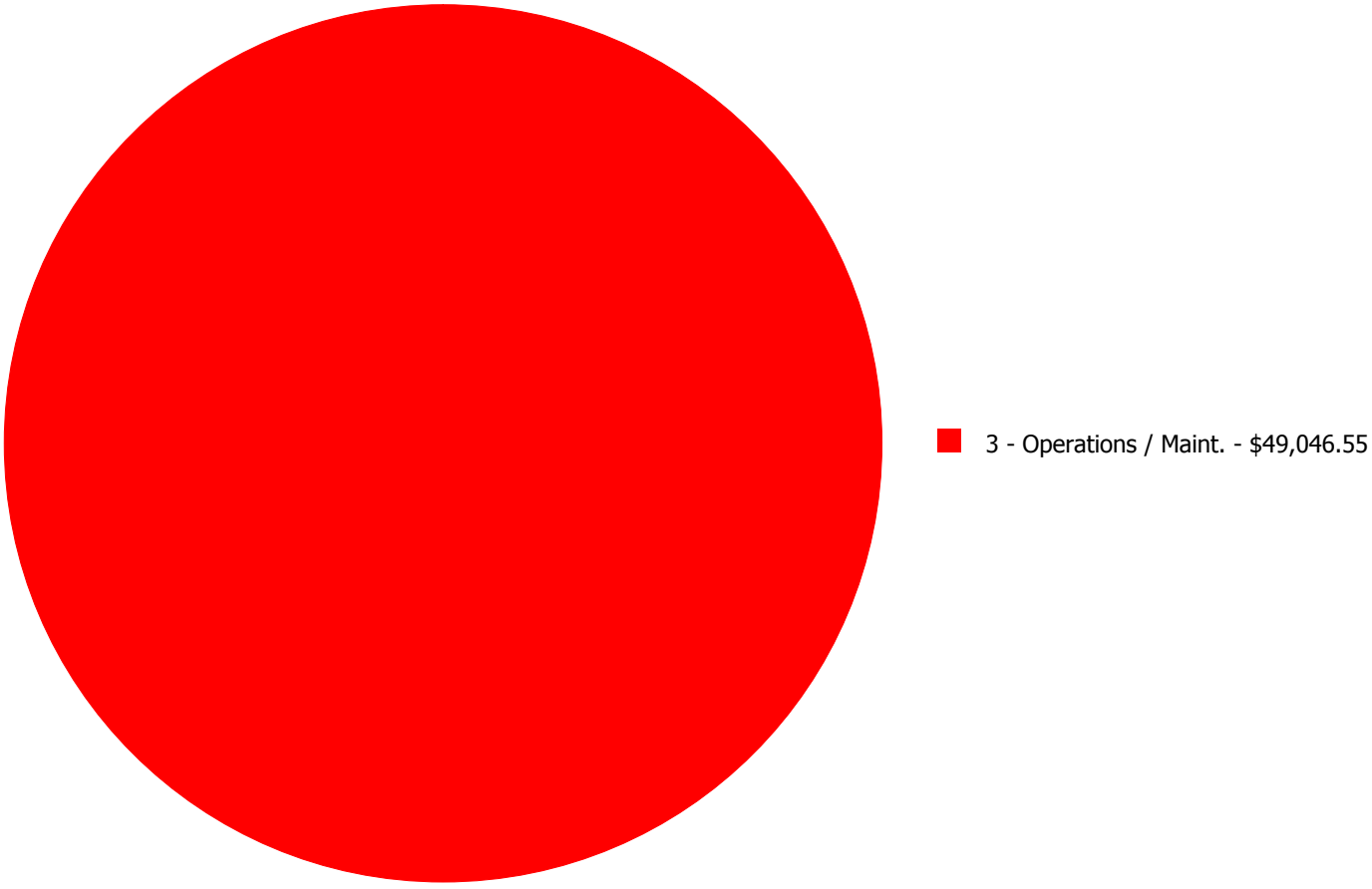
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2030	Pedestrian Paving	$0.00	$3,364.51	$0.00	$0.00	$0.00	$3,364.51
G2040	Site Development	$0.00	$45,682.04	$0.00	$0.00	$0.00	$45,682.04
	Total:	$0.00	$49,046.55	$0.00	$0.00	$0.00	$49,046.55

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: $49,046.55

Deficiency Details by Priority

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

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

System: G2030 - Pedestrian Paving

Location: sidewalks

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 200.00

Unit of Measure: S.F.

Estimate: $2,876.57

Assessor Name: Steven Litman

Date Created: 02/11/2016

Notes: Repave broken sidewalks around building (200sf)

System: G2030 - Pedestrian Paving

Location: front stairs

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Regrout joints between stone treads and risers - LF of grout

Qty: 30.00

Unit of Measure: L.F.

Estimate: $487.94

Assessor Name: Steven Litman

Date Created: 02/11/2016

Notes: Repoint front stairs (30ft)

System: G2040 - Site Development

Location: site fence

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Paint steel picket fence - LF of fence 6' high

Qty: 700.00

Unit of Measure: L.F.

Estimate: $45,682.04

Assessor Name: Steven Litman

Date Created: 02/11/2016

Notes: Repaint chain link fences and gates (700lf)

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