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.

Steel School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	4301 Wayne Ave.	Enrollment	619
	Philadelphia, Pa 19140	Grade Range	'00-08'
Phone/Fax	215-456-3008 / 215-457-1466	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Steel	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	**29.23%**	**$13,304,969**	**$45,521,412**
Building	29.81 %	$13,093,496	$43,926,032
Grounds	13.26 %	$211,472	$1,595,380

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	00.00 %	$0	$1,367,728
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.00 %	$0	$3,150,269
Windows (Shows functionality of exterior windows)	17.23 %	$264,879	$1,537,154
Exterior Doors (Shows condition of exterior doors)	104.67 %	$129,537	$123,758
Interior Doors (Classroom doors)	95.55 %	$286,235	$299,579
Interior Walls (Paint and Finishes)	00.00 %	$0	$1,679,689
Plumbing Fixtures	34.21 %	$394,715	$1,153,932
Boilers	00.00 %	$0	$1,593,485
Chillers/Cooling Towers	06.30 %	$131,557	$2,089,368
Radiators/Unit Ventilators/HVAC	125.59 %	$4,607,968	$3,669,197
Heating/Cooling Controls	158.90 %	$1,830,936	$1,152,225
Electrical Service and Distribution	87.35 %	$723,206	$827,895
Lighting	22.20 %	$657,037	$2,959,938
Communications and Security (Cameras, Pa System and Fire Alarm)	16.34 %	$181,185	$1,108,697

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

S639001;Steel

Final

Site Assessment Report

January 30, 2017

PARSONS

Table of Contents

Site Executive Summary

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

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

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

Gross Area (SF):	85,350
Year Built:	1973
Last Renovation:	
Replacement Value:	$45,521,412
Repair Cost:	$13,304,968.77
Total FCI:	29.23 %
Total RSLI:	74.15 %

Description:

Facility Assessment, December 2015

School District of Philadelphia

Steel School

4301 Wayne Ave.

Philadelphia, PA 19140

85,350 SF / 676 Students / LN 04

The Steel school building is located at 4301 Wayne Ave in Philadelphia, PA. The three story 85,350 square foot building was originally constructed in 1970. The first floor has some sub-grade areas that house mechanical facilities.

The Facility Area Coordinator did not accompany the Parsons assessment team to the site and was unable to provide input on current problems and planned renovation projects. Mr. Ernie Dorman, Building Engineer, accompanied us on our tour of the school and provided us with

information on the building systems and recent maintenance history.

ARCHITECHURAL/STRUCTURAL SYSTEMS

The building typically rests on concrete foundations and bearing walls that are not showing signs of settlement damage. The main structure typically consists of cast-in-place concrete columns, beams, and one way ribbed slab. The main roof structure consists of concrete one-way slab supported by main structural frame. Main roofing is built up application in good condition with a small section of metal roofing over mechanical space. The building envelope is typically masonry and concrete with face brick in good condition. The windows are extruded aluminum, single hung, dual pane tilt out windows with insect/security screens. All windows are in poor condition. Exterior doors are hollow metal in fair to poor condition with many doors beyond service life. The building is accessible per ADA requirements from the play yard and public sidewalk on the west side of the building.

Partition walls are painted CMU block in fair condition with wood and metal folding separation walls between classrooms and some metal stud and gypsum walls added later. Interior doors are generally hollow metal frame with solid core wood doors with lites that are beyond service life. Doors leading to exit stairways are hollow metal frame and doors in good condition. Most interior doors have lever type handles. Fittings include: toilet accessories in good condition; composite plastic toilet partitions in good condition; and handrails and ornamental metals, generally in good condition. Toilet partitions and accessories are generally not ADA accessible. Interior identifying signage is directly painted on wall or door surfaces and plastic panels with brail in fair condition. Stair construction is generally concrete in steel with cast iron nosing in good condition and terrazzo in steel in main entrance stairway in good condition. Utility stairs are metal in good condition. Stair railings are floor and wall mounted metal railing in fair condition.

The interior wall finishes include: painted CMU throughout with tile in showers in good condition. Paint is in fair to poor condition. Flooring finishes includes patterned or bare concrete in stairways, storage, and basement service areas in good condition; carpet in IMC in fair condition; tile in main entry, kitchen, toilets and showers in good condition; terrazzo tile in main entry stairway in good condition; and vinyl in all other areas in good condition. Ceiling finishes include suspended acoustic tile system most areas in poor condition, beyond service life and failing. Auditorium has painted gypsum ceiling in good condition and gym has painted steel structure in good condition.

The building has one elevator serving 3 stories and is not accessible due to outdated control panel and call buttons.

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

Fixed furnishings include: fixed casework in classrooms, corridors and library, generally in fair to good condition; and fixed auditorium seating for 252 generally in fair condition with some damaged seats needing replaced.

MECHANICAL

Plumbing Fixtures

Many of the original plumbing fixtures remain in service. Fixtures in the restrooms on each floor consist of wall mounted push button flush valve water closets, wall hung urinals and lavatories with wheel handle faucets. Many of the units appear to be in poor condition, are beyond their useful service lives, and should be replaced.

Drinking fountains consist of wall hung fixtures with integral refrigerated coolers. They are beyond their service life and should be replaced; most are NOT accessible type.

A service sink is available in a janitor closet in the corridor on each floor for use by the janitorial staff. The sinks are original to the building, in poor condition, and should be replaced.

The building is not equipped with a Kitchen, therefore no sinks are installed.

Domestic Water Distribution

A 4” city water service enters the main mechanical room from the Southeast side of the building; the 4” meter and valves are located in the same room. A reduced pressure backflow preventer is not installed, but should be. The piping in the mechanical room was replaced in 2005 with copper piping and sweat fittings. The maintenance staff reports no significant problems with scale build up in the domestic piping and the supply is adequate to the fixtures, but the piping in the building is over 40 years old and should be inspected and replaced by a qualified contractor.

Two (2) Bradford White electric, 50 gallon, vertical hot water heaters with circulating pumps supply hot water for domestic use. The units are located in the main mechanical room on the first floor level. The hot water heaters are equipped with T&P relief valves and expansion tanks. The units were installed in 2012. The domestic hot water heaters are within their service lives and should provide reliable service for the next 8-10 years.

Sanitary Waste

The original sanitary sewer piping is galvanized piping with both threaded and hub and spigot fittings.

This school does not have a sewage ejector or sump pump.

The maintenance staff reported mostly minor problems with the sanitary waste piping systems. However, the sewer piping has been in service over 40 years and will require more frequent attention from the maintenance staff as time passes. The District should hire a qualified contractor to examine the sanitary waste piping using video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

Rain Water Drainage

The rain water drains from the roof are routed through mechanical chases in the building and appear to be original. The piping is galvanized piping with threaded fittings and has been in use beyond its service life. The drain piping should be inspected by a qualified contractor and repaired as necessary.

Energy Supply

A 2” city gas service enters the building in the main mechanical room, the gas meter is 2”. A gas booster pump is installed and connected to the boilers, but not to the city gas service. Gas is currently not available at the boilers.

The oil supply is stored in a 10,000 gallon underground storage tank (UST) located in the parking lot on the Southeast side of the building. Duplex pumps located in the mechanical room circulate oil through the system. Oil is currently the only fuel available to the boilers. USTs have an anticipated service life of 20 years. The actual condition of the fuel side is unknown.

Heat Generating Systems

Building heating hot water is generated by two (2) 78HP De Dietrich model GT-413A cast iron boilers installed in 2004; located in the main mechanical room on the first floor. Each boiler is equipped with a dual fuel Power Flame burner designed to operate on natural gas or fuel oil; fuel oil is the only fuel available. Combustion air makeup is supplied by louvers equipped with motorized dampers. Burner controls provide full modulation with electronic ignition, digital flame sensing, and pressure atomization on oil. The gas train serving the boilers appears to have code required venting of the regulators and dual solenoid valves with venting of the chamber between. The boilers appear to be in good condition and the Building Engineer did not report any issues. Cast iron sectional boilers have an anticipated service life of 35 years or more; these units have been in service approximately 12 years. The District should provide reliable service for the next 20-25 years.

Cooling Generating Systems

Chilled water is generated by one (1) nominal 240 ton York YCWS water-cooled screw chiller located in the main mechanical room on the first floor. Heat from the chiller is rejected by one (1) roof mounted nominal 250 ton Evapco model USS induced draft, counterflow cooling tower. The single chiller is sufficient to hold the building on hot summer days. The chiller has two (2) compressors and utilizes R-407C refrigerant. Screw chillers have an anticipated service life of 20 years; this unit has been in service 12 years. The District should provide reliable service to the chiller for the next 6-10 years. Galvanized metal cooling towers have an anticipated service life of 18 years; this unit has been in service approximately 12 years. The District should budget for replacing the cooling tower over the next 5-8 years. The Building Engineer reported no issues with either the chiller or cooling tower.

Distribution Systems

Building heating and cooling water distribution piping is black steel with threaded fittings and black steel with flanged fittings in the mechanical room. Smaller branch piping is copper piping with sweat fittings. The piping in the boiler room was replaced in 2004, but the original piping remains in use in the rest of the building. Most of the piping is covered with insulation. The piping has been in use beyond its service life 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 distribution piping and perform additional testing to locate and replace any damaged piping and to further quantify the

extent of potential failures. The District should budget for replacing this piping over the next 10 years.

A four-pipe distribution system supplies building heating and cooling water to the air handling units (AHU) and heating and ventilation units (HV). Two (2) 3HP Armstrong end suction hot water supply pumps serve the building hot water distribution system. An expansion tank and Spirotherm air separator are installed on the hot water supply piping. Two (2) Armstrong end suction chilled water return pumps, the size of the pumps was not visible but estimated to be approximately 5HP, serve the building chilled water distribution network. The chilled water pumps are damaged from rust and should be replaced within the next 2-4 years. An air separator is installed on the chilled water return piping. Two (2) 15HP Armstrong end suction pumps serve the condenser water loop for the cooling tower and chiller. A Lakos filtration system is installed on the chilled water piping for the chiller. All pumps are located in the main mechanical room on the first floor. End suction pumps have an anticipated service life of 25 years, it is estimated that these pumps are 12 years old.

Conditioned air is provided to the building by six (6) air handling units, located in four (4) mechanical rooms located on the second and third floors, and two (2) heating and ventilation units located in the Gymnasium. AHU-1, located in a third floor mechanical room, serves the 1st and 2nd floor classrooms. AHU-2, located in a third floor mechanical room, serves the 3rd floor classrooms. AHU-3, located in a second floor mechanical room, serves the Auditorium and first floor. AHU-4, located in a second floor mechanical room, serves the Cafeteria. AHU-5, located in a second floor mechanical room, serves the IMC. AHU-6, located in a second floor mechanical room, serves the administration offices. Air from each unit is ducted to the space that it serves. Reheat coils throughout the building are used in conjuncture with the AHUs. Each air handling unit has chilled water and hot water piping connections. The District should replace these units, which are beyond their service lives.

Two (2) heating and ventilation units, located in the Gymnasium, serve the Gymnasium and provide heating only. The heating and ventilation units have only hot water connections. These units are estimated to be original to the building and well beyond their service lives. The District should replace these units, which are beyond their service lives.

Two (2) exhaust fans on the upper roof serve the North and South side restrooms. Three (3) power ventilators allow relief air to escape from the building and are installed on the upper roof. It could not be determined which specific spaces each ventilator served during the site visit. The Building Engineer reports that he has had issues with the exhaust fans. The fans and ventilators are beyond their service lives and should be replaced.

Terminal & Package Units

This building is not equipped with a kitchen, therefore a kitchen hood is not installed.

A Mitsubishi split system air conditioning system provides supplemental cooling to the IMC located on the second floor in the center of the building. The installation date of this unit is unknown but it appears to be in good condition; the anticipated service life of a split system air conditioner is 15 years. The district should budget to replace this unit within the next 7-10 years.

A Mitsubishi split system air conditioning system provides cooling to the LAN room located on the first floor off of the Main Office. The installation date of this unit is unknown; the anticipated service life of a split system air conditioner is 15 years. The district should budget to replace this unit within the next 7-10 years.

Controls & Instrumentation

A Niagara building monitoring system (BMS) is installed in this building; which allows the mechanical equipment to be monitored, and have limited control. Several digitally controlled three-way valves allow the Building Engineer to control water flow from his computer. The Building Engineer reported that the BMS, installed when the boilers were replaced in 2004, is operational. The Building Engineer can monitor the set points of the boilers, HVs, unit ventilators, exhaust fans, and temperatures of each classroom. The system provides limited control over the equipment, most equipment is controlled at the panel board or wall mounted switches and is either “on” or “off”. This system is within its service life and should provide reliable operation for the next 5-8 years, but should be replaced when the AHUs are replaced. These controls should be updated with a new DDC system and computer interface to provide more efficient operation.

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

Sprinklers

The school building is NOT covered by an automatic sprinkler system. Installing a sprinkler system with quick response type heads should reduce insurance costs by providing protection for the property investment. A fire pump may be required depending on the available city water pressure.

The building is not equipped with fire stand pipe.

ELECTRICAL:

Site electrical service - The primary power is at 13.2KV from the power poles feeding a pad-mounted transformer. The secondary power is brought into the school building underground and into the building (electrical room). It feeds an old 1200A, 480V, 3 phase switchboard. The PECO meter (PECO 01 017457325) is also located inside the new electrical room (basement). The switchboard is functioning, however, it was built in 1973, and has reached the end of its useful service life.

Distribution system - The electrical distribution is accomplished by using the main 480V switchboard (located in the electrical room) and feeding several 120V lighting and receptacle panels throughout the building via step-down transformers (480V, 3 phase, to 120V, 3phase). These panels are functioning however they were installed in 1973, and they have reached the end of their useful service life.

Receptacles - The receptacles in classrooms, computer rooms, libraries, and other areas are not all adequate. The walls in classrooms and the computer rooms (50%) have insufficient number of receptacles (minimum of 2 on each wall).

Lighting - Interior building is illuminated by various types of fixtures. They include fluorescent lighting (mostly T-8 & T-5 lamps) in majority of the areas, including; classrooms, corridors, offices, Library, cafeteria, Kitchen, etc. Surface or pendant mounted industrial fluorescent fixtures are used in mechanical and electrical rooms. About 50% of the school lighting has been upgraded, however there are parts of the building (50%) lacks adequate illumination level. The majority of interior lighting fixtures (50%) are in good condition and have not reached the end of their useful service life.

Fire alarm - The present Fire Alarm system is fairly new. It was upgraded in 2012, and it is automatic/addressable, and is in compliance with safety codes. There are manual pulls stations throughout the building. There are also sufficient number of horn/strobes in the classrooms, corridors, offices and other areas in the school.

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

Public address - A separate PA system does not exist. School uses the telephone systems for public announcement. The present System is functioning properly. Each class room is provided with an intercom telephone service. This system allows paging and intercom communication between main office to each classroom, and vice versa between each classroom and main office. Also, the system allows communications between classrooms to other classrooms.

Clock and Program system – There are clocks in each classroom (12-inch round clocks), however, the clocks are not controlled properly by the master clock control.

Television System - Television system is not provided for the school. There are smart boards in most of the classrooms capable of connecting to computers and internet.

Security Systems, access control, and video surveillance - The school is provided with video surveillance system. The monitor was installed recently in 2012. Cameras are installed at exit doors, corridors, exterior, and other critical areas. However school would like more cameras to cover critical areas. The new cameras should be controlled by a Closed Circuit Television system (CCTV).

Emergency Power System – There is an old emergency generator (12.5 KW) in this building. However, the generator is old and has reached the end of its useful service life.

Emergency lighting and exit lights - there are sufficient number of emergency lights/exit lights in the corridors and other exit ways. The exit/emergency lights have recently been upgraded (2006).

Lightning Protection System - There is no lightning protection system installed for this school. There should be several lighting rods on the roof top, and be connected to the ground by using stranded aluminum cables from the roof top all the way to the ground floor.

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

Auditorium – The auditorium general lighting uses decorative light fixtures with adequate lumens. The stage lighting has an old stage lighting controller that has reached the end of its useful service.

Elevators – This school has a fairly new hydraulic elevator (installed in 2008).

Grounds (site):

Yard area on the northwest side is asphalt paving in fair condition with some patches and cracks. Parking for staff vehicles and visitors on south side is asphalt paving in good condition with accessible stall and signage. Metal picket fence and gates surrounding yard and parking area is in good condition. Landscaping is large grass area and mature trees and bushes surrounding site all in good condition.

Site Lighting - The school has some exterior lighting. However, a few pole-mounted lights are needed to provide adequate lighting for the grounds security and safety of people at night.

Site Paging – The school has some exterior speakers, however a few additional speakers are needed for proper communication with students playing outside.

Accessibility:

The building does have an accessible entrance and accessible routes on the ground level. Toilets are not equipped with accessible fixtures, partitions and accessories, such as grab bars and accessible partitions. Most of the doors in the building do have lever type door handles.

RECOMMENDATIONS:

- Replace exterior doors – beyond service life, rusted and failing
- Replace exterior windows – beyond service life
- Replace interior doors and hardware – beyond service life
- Replace toilet partitions for accessibility
- Replace toilet accessories – broken and missing

- Replace suspended acoustic tile ceiling system – beyond service life (90% of suspended ceiling)

- Updated elevator – call buttons and cabin panel not code compliant

- Repair or replace auditorium seats – 10% damaged or missing

- Replace seventeen (17) urinals, in use beyond their service life, with new low flow fixtures.
- Replace thirty (30) water closets, in use beyond their service life, with new code compliant fixtures.
- Replace three (3) lavatories, in use beyond their service life, with new code compliant fixtures.
- Replace five (5) wall hung drinking fountains and integral refrigerated coolers in the corridors. These units are beyond their service life and most are NOT accessible type.
- Replace three (3) service sinks, located in the corridors of each floor, which are beyond their service lives.
- Install a reduced pressure backflow preventer on the incoming 4" domestic water line.
- Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for over 40 years, and replace any damaged piping.
- Hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Hire a qualified contractor to perform a detailed examination of the rain water drainage piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Hire a qualified contractor to examine the hot water distribution piping, in service for over 40 years, and replace any damaged piping and to further quantify the extent of potential failures.
- Hire a qualified contractor to examine the chilled water distribution piping, in service for over 40 years, and replace any damaged piping and to further quantify the extent of potential failures.
- Replace two (2) 5HP end suction chilled water return pumps which are damaged from rust.
- Replace AHU-1, located in a 3rd floor mechanical room, serving the 1st and 2nd floor classrooms which is beyond its service life.

- Replace AHU-2, located in a 3rd floor mechanical room, serving the 3rd floor classrooms which is beyond its service life.
- Replace AHU-3, located in a 2nd floor mechanical room, serving the Auditorium which is beyond its service life.
- Replace AHU-4, located in a 2nd floor mechanical room, serving the Cafeteria which is beyond its service life.
- Replace AHU-5, located in a 2nd floor mechanical room, serving the IMC which is beyond its service life.
- Replace AHU-6, located in a 2nd floor mechanical room, serving the administration offices which is beyond its service life.
- Replace the two (2) heating and ventilation units serving the Gymnasium, which are beyond their service lives.
- Replace the two (2) existing roof mounted exhaust fans that are beyond their useful service lives.
- Replace the three (3) existing roof mounted power ventilators, which are beyond their useful service lives.
- Replace the existing controls and BMS for the HVAC systems with modern DDC modules, valves and actuators to improve reliability and energy efficiency. Provide a new building automation system (BAS) with communication interface to the preferred system in use throughout the District.
- Install a fire protection sprinkler system with quick response type heads to reduce insurance costs by providing protection for the property. A fire pump may be required depending on the available city water pressure.
- Install a new and upgraded electrical service for this school to handle existing loads plus any additional mechanical loads.
- Install new 120V lighting and receptacle panels throughout the building (total of 10)
- Install new lighting system for 50% of the building.
- Install new receptacles for 50% of the building
- Install new clock system
- Install additional cameras for the video surveillance system.
- Install a new auditorium stage lighting controller.
- Install new lightning protection on the roof.
- Install additional pole-mounted lights for the grounds
- Install additional exterior speakers for the grounds

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 4
Status:	Accepted by SDP	Team:	Tm 4
Site ID:	S639001		

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	58.00 %	0.00 %	$0.00
A20 - Basement Construction	58.00 %	0.00 %	$0.00
B10 - Superstructure	58.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	74.30 %	8.20 %	$394,416.60
B30 - Roofing	40.85 %	0.00 %	$0.00
C10 - Interior Construction	70.70 %	17.32 %	$362,777.72
C20 - Stairs	58.00 %	0.00 %	$0.00
C30 - Interior Finishes	68.42 %	18.32 %	$998,456.88
D10 - Conveying	105.71 %	52.75 %	$68,878.73
D20 - Plumbing	106.34 %	95.39 %	$1,662,543.11
D30 - HVAC	76.50 %	69.20 %	$6,570,461.26
D40 - Fire Protection	92.47 %	177.49 %	$1,220,969.85
D50 - Electrical	110.11 %	32.96 %	$1,653,651.65
E10 - Equipment	65.71 %	6.68 %	$90,802.49
E20 - Furnishings	105.00 %	38.80 %	$70,538.17
G20 - Site Improvements	63.67 %	0.00 %	$0.00
G40 - Site Electrical Utilities	106.67 %	51.55 %	$211,472.31
Totals:	**74.15 %**	**29.23 %**	**$13,304,968.77**

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)
B639001;Steel	85,350	29.81	$1,220,969.85	$462,871.02	$5,307,923.64	$3,430,575.32	$2,671,156.63
G639001;Grounds	94,300	13.26	$0.00	$0.00	$138,190.58	$73,281.73	$0.00
Total:		**29.23**	**$1,220,969.85**	**$462,871.02**	**$5,446,114.22**	**$3,503,857.05**	**$2,671,156.63**

Deficiencies By Priority

1 - Response Time (< 2 yr) - $1,220,969.85
2 - Response Time (2-3 yrs) - $462,871.02
3 - Response Time (3-4 yrs) - $5,446,114.22
4 - Response Time (4-5 yrs) - $3,503,857.05
5 - Response Time (> 5 yrs) - $2,671,156.63

Budget Estimate Total: $13,304,968.77

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):	85,350
Year Built:	1973
Last Renovation:	
Replacement Value:	$43,926,032
Repair Cost:	$13,093,496.46
Total FCI:	29.81 %
Total RSLI:	74.13 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B639001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S639001		

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	58.00 %	0.00 %	$0.00
A20 - Basement Construction	58.00 %	0.00 %	$0.00
B10 - Superstructure	58.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	74.30 %	8.20 %	$394,416.60
B30 - Roofing	40.85 %	0.00 %	$0.00
C10 - Interior Construction	70.70 %	17.32 %	$362,777.72
C20 - Stairs	58.00 %	0.00 %	$0.00
C30 - Interior Finishes	68.42 %	18.32 %	$998,456.88
D10 - Conveying	105.71 %	52.75 %	$68,878.73
D20 - Plumbing	106.34 %	95.39 %	$1,662,543.11
D30 - HVAC	76.50 %	69.20 %	$6,570,461.26
D40 - Fire Protection	92.47 %	177.49 %	$1,220,969.85
D50 - Electrical	110.11 %	32.96 %	$1,653,651.65
E10 - Equipment	65.71 %	6.68 %	$90,802.49
E20 - Furnishings	105.00 %	38.80 %	$70,538.17
Totals:	**74.13 %**	**29.81 %**	**$13,093,496.46**

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.	85,350	100	1973	2073		58.00 %	0.00 %	58			$1,570,440
A1030	Slab on Grade	$7.73	S.F.	85,350	100	1973	2073		58.00 %	0.00 %	58			$659,756
A2010	Basement Excavation	$6.55	S.F.	85,350	100	1973	2073		58.00 %	0.00 %	58			$559,043
A2020	Basement Walls	$12.70	S.F.	85,350	100	1973	2073		58.00 %	0.00 %	58			$1,083,945
B1010	Floor Construction	$75.10	S.F.	85,350	100	1973	2073		58.00 %	0.00 %	58			$6,409,785
B1020	Roof Construction	$13.88	S.F.	85,350	100	1973	2073		58.00 %	0.00 %	58			$1,184,658
B2010	Exterior Walls	$36.91	S.F.	85,350	100	1973	2073		58.00 %	0.00 %	58			$3,150,269
B2020	Exterior Windows	$18.01	S.F.	85,350	40	1973	2013	2057	105.00 %	17.23 %	42		$264,879.31	$1,537,154
B2030	Exterior Doors	$1.45	S.F.	85,350	25	1973	1998	2042	108.00 %	104.67 %	27		$129,537.29	$123,758
B3010105	Built-Up	$37.76	S.F.	34,551	20	2003	2023		40.00 %	0.00 %	8			$1,304,646
B3010120	Single Ply Membrane	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.	1,069	30	2003	2033		60.00 %	0.00 %	18			$57,961
B3010140	Shingle & Tile	$38.73	S.F.		25				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	85,350	20	2003	2023		40.00 %	0.00 %	8			$5,121
C1010	Partitions	$17.91	S.F.	85,350	100	1973	2073		58.00 %	0.00 %	58			$1,528,619
C1020	Interior Doors	$3.51	S.F.	85,350	40	1973	2013	2057	105.00 %	95.55 %	42		$286,235.23	$299,579
C1030	Fittings	$3.12	S.F.	85,350	40	1973	2013	2057	105.00 %	28.74 %	42		$76,542.49	$266,292
C2010	Stair Construction	$1.41	S.F.	85,350	100	1973	2073		58.00 %	0.00 %	58			$120,344

Site Assessment Report - B639001;Steel

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	$19.29	S.F.	85,350	10	2011	2021		60.00 %	0.00 %	6			$1,646,402
C3010231	Vinyl Wall Covering	$0.00	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$0.39	S.F.	85,350	30	1994	2024		30.00 %	0.00 %	9			$33,287
C3020411	Carpet	$7.30	S.F.	2,561	10	2013	2023		80.00 %	0.00 %	8			$18,695
C3020412	Terrazzo & Tile	$75.52	S.F.	17,070	50	1973	2023	2035	40.00 %	0.00 %	20			$1,289,126
C3020413	Vinyl Flooring	$9.68	S.F.	55,478	20	1994	2014	2022	35.00 %	0.00 %	7			$537,027
C3020414	Wood Flooring	$22.27	S.F.	5,975	25	1994	2019	2030	60.00 %	0.00 %	15			$133,063
C3020415	Concrete Floor Finishes	$0.97	S.F.	4,268	50	1973	2023		16.00 %	0.00 %	8			$4,140
C3030	Ceiling Finishes	$20.97	S.F.	85,350	25	1973	1998	2042	108.00 %	55.79 %	27		$998,456.88	$1,789,790
D1010	Elevators and Lifts	$1.53	S.F.	85,350	35	1973	2008	2052	105.71 %	52.75 %	37		$68,878.73	$130,586
D2010	Plumbing Fixtures	$13.52	S.F.	85,350	35	1973	2008	2052	105.71 %	34.21 %	37		$394,714.65	$1,153,932
D2020	Domestic Water Distribution	$1.68	S.F.	85,350	25	1973	1998	2042	108.00 %	328.23 %	27		$470,644.13	$143,388
D2030	Sanitary Waste	$2.90	S.F.	85,350	25	1973	1998	2042	108.00 %	169.16 %	27		$418,705.67	$247,515
D2040	Rain Water Drainage	$2.32	S.F.	85,350	30	1973	2003	2047	106.67 %	191.14 %	32		$378,478.66	$198,012
D3020	Heat Generating Systems	$18.67	S.F.	85,350	35	2004	2039		68.57 %	0.00 %	24			$1,593,485
D3030	Cooling Generating Systems	$24.48	S.F.	85,350	20	2004	2024		45.00 %	6.30 %	9		$131,557.10	$2,089,368
D3040	Distribution Systems	$42.99	S.F.	85,350	25	1973	1998	2042	108.00 %	125.59 %	27		$4,607,968.16	$3,669,197
D3050	Terminal & Package Units	$11.60	S.F.	85,350	20				0.00 %	0.00 %				$990,060
D3060	Controls & Instrumentation	$13.50	S.F.	85,350	20	2004	2024	2037	110.00 %	158.90 %	22		$1,830,936.00	$1,152,225
D4010	Sprinklers	$7.05	S.F.	85,350	35			2052	105.71 %	202.91 %	37		$1,220,969.85	$601,718
D4020	Standpipes	$1.01	S.F.	85,350	35				0.00 %	0.00 %				$86,204
D5010	Electrical Service/Distribution	$9.70	S.F.	85,350	30	1973	2003	2047	106.67 %	87.35 %	32		$723,205.50	$827,895
D5020	Lighting and Branch Wiring	$34.68	S.F.	85,350	20	1973	1993	2037	110.00 %	22.20 %	22		$657,036.54	$2,959,938
D5030	Communications and Security	$12.99	S.F.	85,350	15	1973	1988	2032	113.33 %	16.34 %	17		$181,184.96	$1,108,697
D5090	Other Electrical Systems	$1.41	S.F.	85,350	30	1973	2003	2047	106.67 %	76.63 %	32		$92,224.65	$120,344
E1020	Institutional Equipment	$4.82	S.F.	85,350	35	2003	2038		65.71 %	22.07 %	23		$90,802.49	$411,387
E1090	Other Equipment	$11.10	S.F.	85,350	35	2003	2038		65.71 %	0.00 %	23			$947,385
E2010	Fixed Furnishings	$2.13	S.F.	85,350	40	1973	2013	2057	105.00 %	38.80 %	42		$70,538.17	$181,796
								Total	**74.13 %**	**29.81 %**			**$13,093,496.46**	**$43,926,032**

System Notes

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

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

Note:
98% - Paint & Covering
2% - Wall Tile (ceramic)

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

Note:
3% - Carpet
20% - Terrazzo & Tile
65% - Vinyl Flooring
7% - Wood Flooring
5% - Concrete Floor Finishes

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:	**$13,093,496**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,162,479**	**$726,523**	**$1,856,910**	**$3,046,541**	**$0**	**$20,885,950**
*** A - Substructure**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A10 - Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1010 - Standard Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1030 - Slab on Grade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A20 - Basement Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2010 - Basement Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2020 - Basement Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2020 - Exterior Windows	$264,879	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$264,879**
B2030 - Exterior Doors	$129,537	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$129,537**
B30 - Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010 - Roof Coverings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010105 - Built-Up	$0	$0	$0	$0	$0	$0	$0	$0	$1,817,954	$0	$0	**$1,817,954**
B3010120 - Single Ply Membrane	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010130 - Preformed Metal Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010140 - Shingle & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3020 - Roof Openings	$0	$0	$0	$0	$0	$0	$0	$0	$7,136	$0	$0	**$7,136**
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**

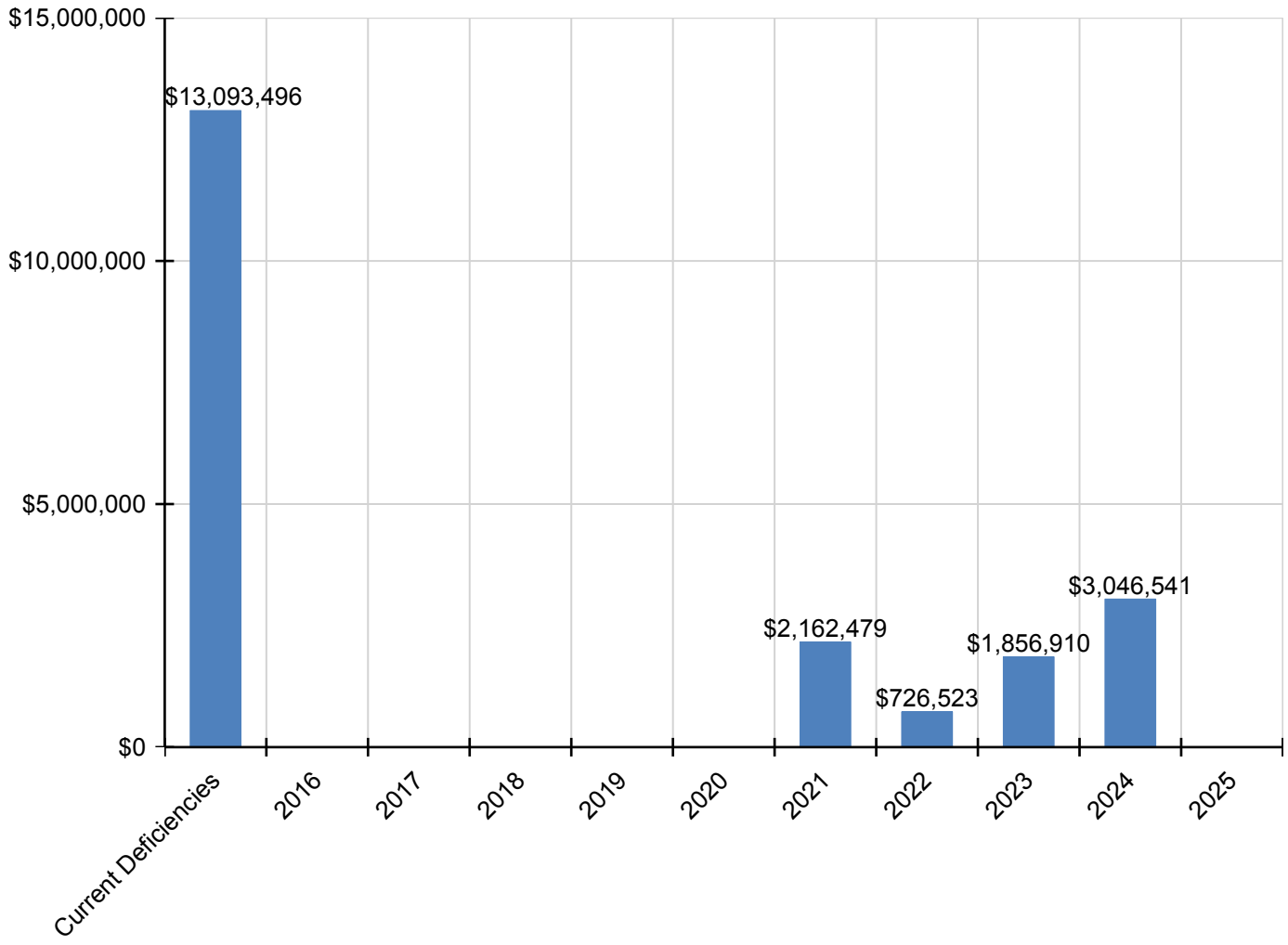
C1020 - Interior Doors	$286,235	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$286,235**
C1030 - Fittings	$76,542	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$76,542**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$0	$0	$0	$0	$0	$0	$2,162,479	$0	$0	$0	$0	**$2,162,479**
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	$47,774	$0	**$47,774**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$26,051	$0	$0	**$26,051**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$0	$0	$0	$0	$0	$0	$0	$726,523	$0	$0	$0	**$726,523**
C3020414 - Wood Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$5,769	$0	$0	**$5,769**
C3030 - Ceiling Finishes	$998,457	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$998,457**
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	$68,879	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$68,879**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$394,715	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$394,715**
D2020 - Domestic Water Distribution	$470,644	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$470,644**
D2030 - Sanitary Waste	$418,706	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$418,706**
D2040 - Rain Water Drainage	$378,479	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$378,479**
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	$131,557	$0	$0	$0	$0	$0	$0	$0	$0	$2,998,767	$0	**$3,130,324**
D3040 - Distribution Systems	$4,607,968	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,607,968**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,830,936	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,830,936**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$1,220,970	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,220,970**
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	$723,206	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$723,206**
D5020 - Lighting and Branch Wiring	$657,037	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$657,037**
D5030 - Communications and Security	$181,185	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$181,185**
D5090 - Other Electrical Systems	$92,225	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$92,225**
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	$90,802	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$90,802**
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	$70,538	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$70,538**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

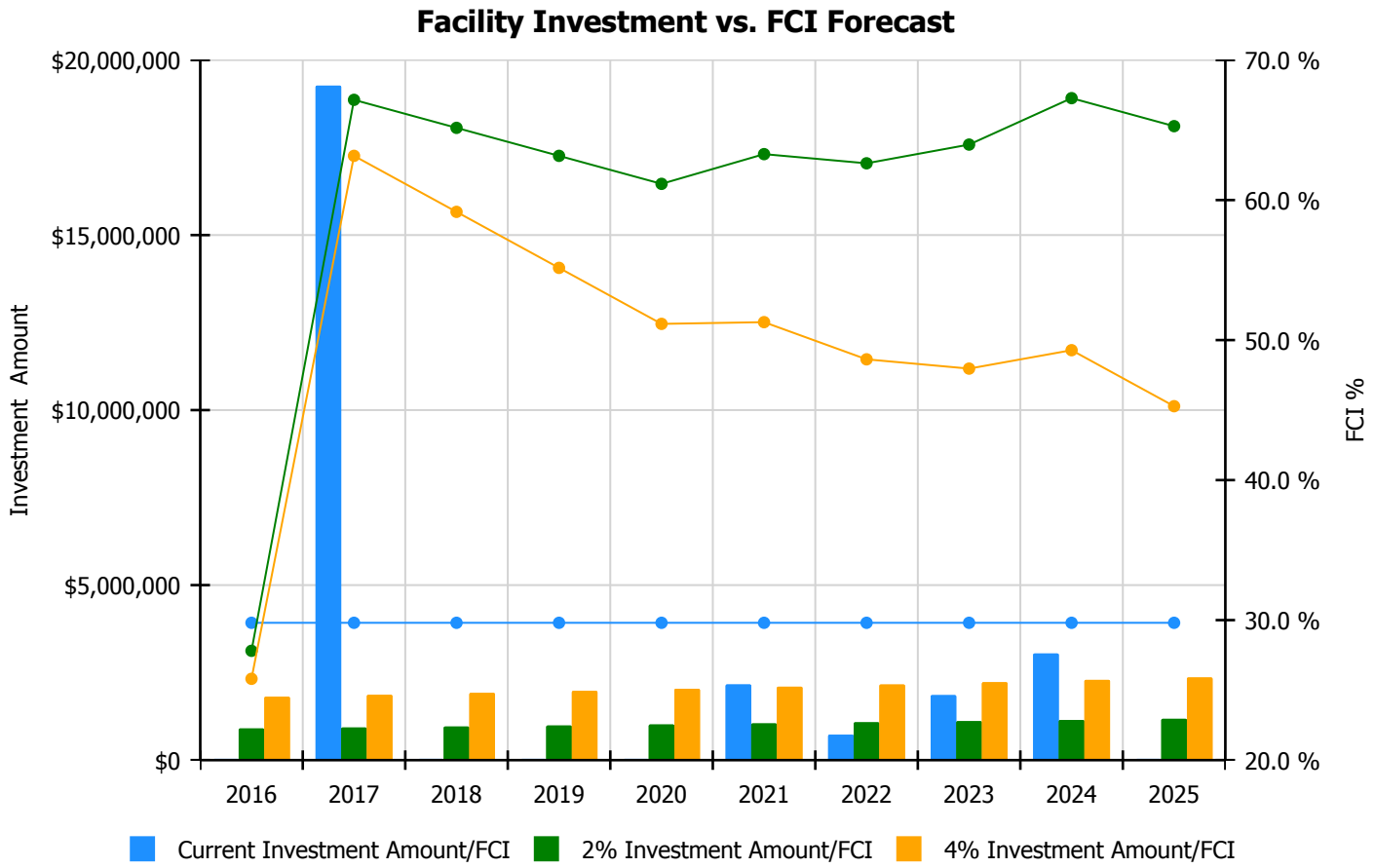
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

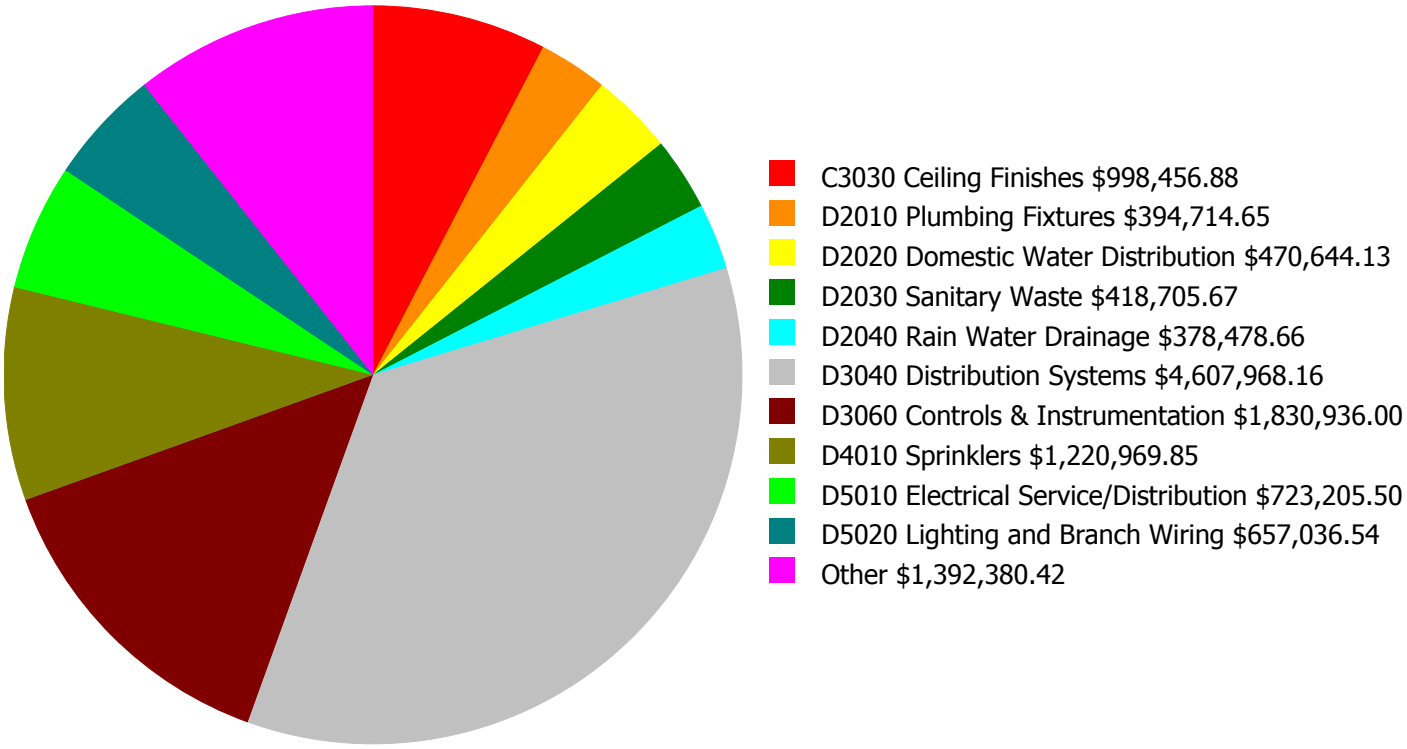
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 29.81%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$904,876.00	27.81 %	$1,809,753.00	25.81 %
2017	$19,269,118	$932,023.00	67.16 %	$1,864,045.00	63.16 %
2018	$0	$959,983.00	65.16 %	$1,919,966.00	59.16 %
2019	$0	$988,783.00	63.16 %	$1,977,565.00	55.16 %
2020	$0	$1,018,446.00	61.16 %	$2,036,892.00	51.16 %
2021	$2,162,479	$1,049,000.00	63.28 %	$2,097,999.00	51.28 %
2022	$726,523	$1,080,470.00	62.62 %	$2,160,939.00	48.62 %
2023	$1,856,910	$1,112,884.00	63.96 %	$2,225,767.00	47.96 %
2024	$3,046,541	$1,146,270.00	67.28 %	$2,292,540.00	49.28 %
2025	$0	$1,180,658.00	65.28 %	$2,361,317.00	45.28 %
Total:	**$27,061,572**	**$10,373,393.00**		**$20,746,783.00**	

Deficiency Summary by System

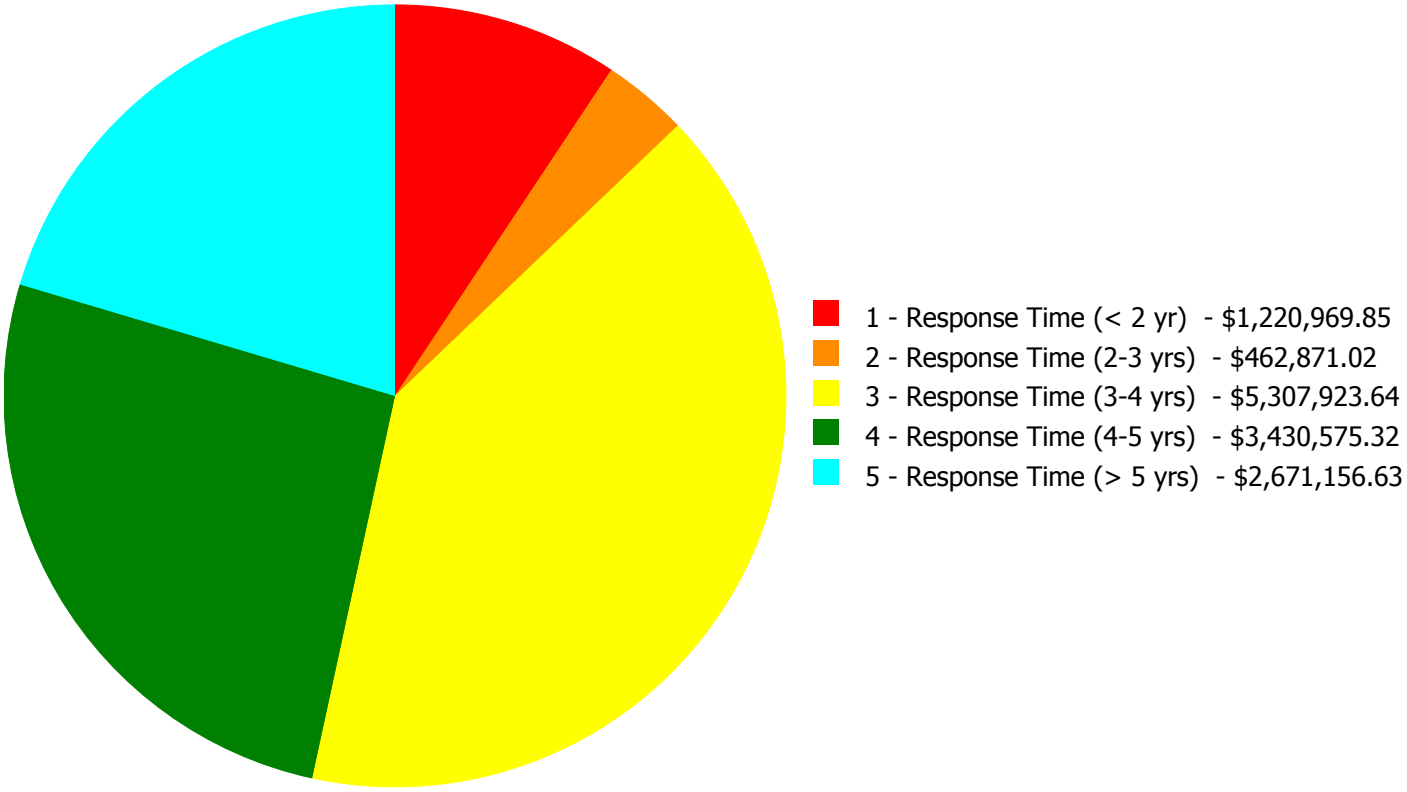
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $13,093,496.46

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: $13,093,496.46

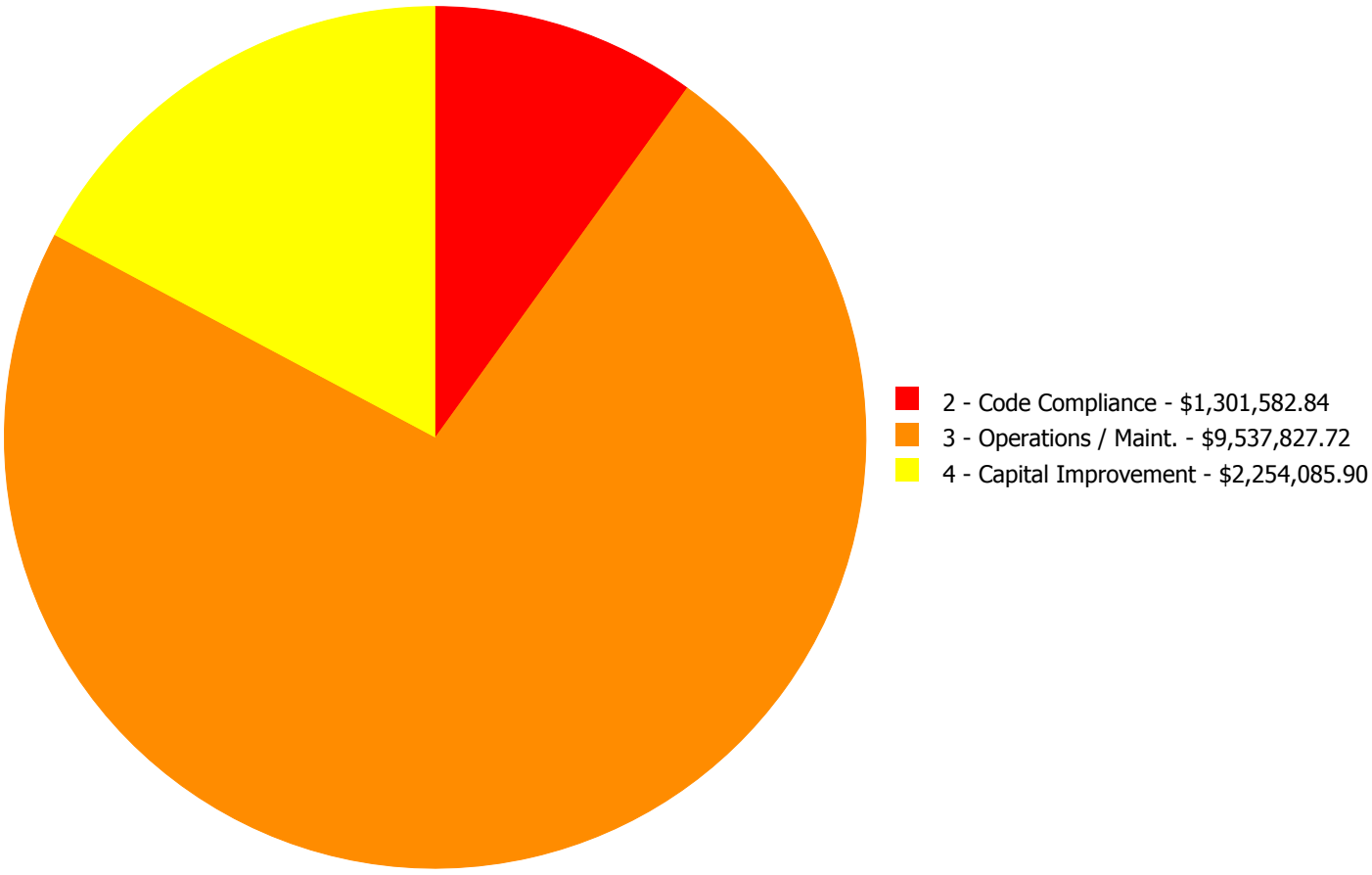
Deficiency By Priority Investment Table

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
B2020	Exterior Windows	$0.00	$0.00	$264,879.31	$0.00	$0.00	$264,879.31
B2030	Exterior Doors	$0.00	$0.00	$129,537.29	$0.00	$0.00	$129,537.29
C1020	Interior Doors	$0.00	$0.00	$286,235.23	$0.00	$0.00	$286,235.23
C1030	Fittings	$0.00	$0.00	$76,542.49	$0.00	$0.00	$76,542.49
C3030	Ceiling Finishes	$0.00	$0.00	$0.00	$998,456.88	$0.00	$998,456.88
D1010	Elevators and Lifts	$0.00	$0.00	$68,878.73	$0.00	$0.00	$68,878.73
D2010	Plumbing Fixtures	$0.00	$0.00	$394,714.65	$0.00	$0.00	$394,714.65
D2020	Domestic Water Distribution	$0.00	$51,112.25	$0.00	$419,531.88	$0.00	$470,644.13
D2030	Sanitary Waste	$0.00	$0.00	$418,705.67	$0.00	$0.00	$418,705.67
D2040	Rain Water Drainage	$0.00	$0.00	$378,478.66	$0.00	$0.00	$378,478.66
D3030	Cooling Generating Systems	$0.00	$0.00	$131,557.10	$0.00	$0.00	$131,557.10
D3040	Distribution Systems	$0.00	$0.00	$2,430,819.80	$1,336,927.73	$840,220.63	$4,607,968.16
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$0.00	$1,830,936.00	$1,830,936.00
D4010	Sprinklers	$1,220,969.85	$0.00	$0.00	$0.00	$0.00	$1,220,969.85
D5010	Electrical Service/Distribution	$0.00	$411,758.77	$0.00	$311,446.73	$0.00	$723,205.50
D5020	Lighting and Branch Wiring	$0.00	$0.00	$657,036.54	$0.00	$0.00	$657,036.54
D5030	Communications and Security	$0.00	$0.00	$0.00	$181,184.96	$0.00	$181,184.96
D5090	Other Electrical Systems	$0.00	$0.00	$0.00	$92,224.65	$0.00	$92,224.65
E1020	Institutional Equipment	$0.00	$0.00	$0.00	$90,802.49	$0.00	$90,802.49
E2010	Fixed Furnishings	$0.00	$0.00	$70,538.17	$0.00	$0.00	$70,538.17
	Total:	$1,220,969.85	$462,871.02	$5,307,923.64	$3,430,575.32	$2,671,156.63	$13,093,496.46

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: $13,093,496.46

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: D4010 - Sprinklers

Location: Throughout building

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 1 - Response Time (< 2 yr)

Correction: Install a fire protection sprinkler system

Qty: 85,350.00

Unit of Measure: S.F.

Estimate: $1,220,969.85

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Install a fire protection sprinkler system with quick response type heads to reduce insurance costs by providing protection for the property. A fire pump may be required depending on the available city water pressure.

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

System: D2020 - Domestic Water Distribution

Location: Main mechanical room

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Provide 4" reduced pressure back flow preventer

Qty: 1.00

Unit of Measure: Ea.

Estimate: $51,112.25

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Install a reduced pressure backflow preventer on the incoming 4” domestic water line.

System: D5010 - Electrical Service/Distribution

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Panelboard - 400 amp

Qty: 1.00

Unit of Measure: Ea.

Estimate: $411,758.77

Assessor Name: Craig Anding

Date Created: 02/12/2016

Notes: Install new 120V lighting and receptacle panels throughout the building (total of 10)

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

System: B2020 - Exterior Windows

Location: Throughout

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 50.00

Unit of Measure: Ea.

Estimate: $264,879.31

Assessor Name: Craig Anding

Date Created: 02/22/2016

Notes: Replace exterior windows – beyond service life

System: B2030 - Exterior Doors

Location: Throughout

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 16.00

Unit of Measure: Ea.

Estimate: $129,537.29

Assessor Name: Craig Anding

Date Created: 02/22/2016

Notes: Replace exterior doors – beyond service life, rusted and failing

System: C1020 - Interior Doors

Location: Throughout

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 60.00

Unit of Measure: Ea.

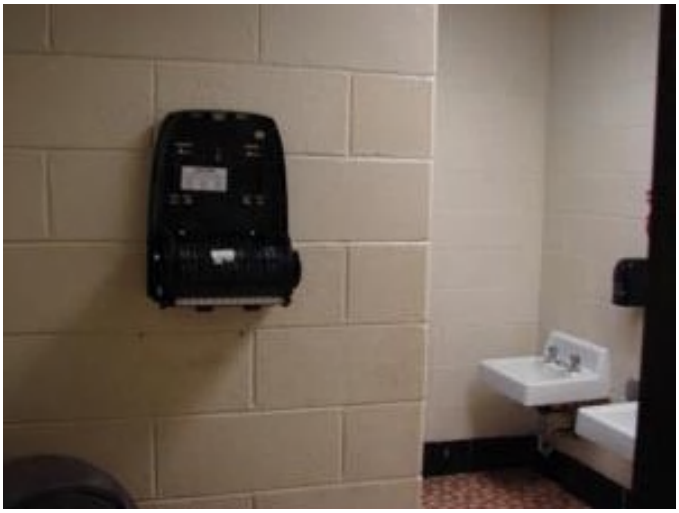
Estimate: $286,235.23

Assessor Name: Craig Anding

Date Created: 02/22/2016

Notes: Replace interior doors and hardware – beyond service life

System: C1030 - Fittings



Location: Toilets

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace toilet accessories - select accessories and quantity

Qty: 36.00

Unit of Measure: Ea.

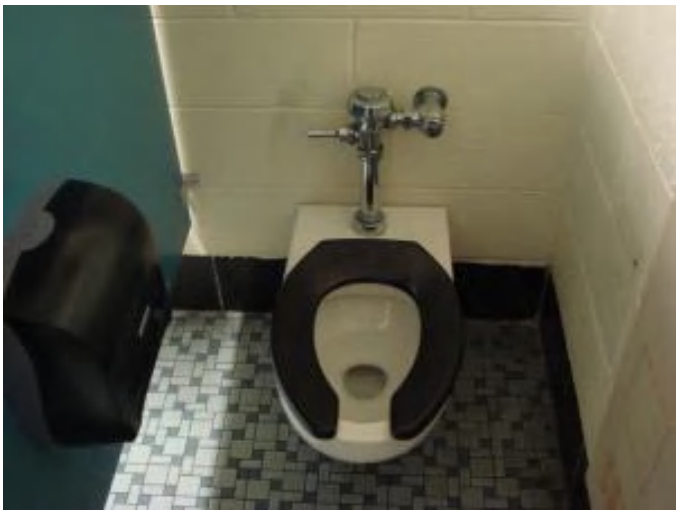
Estimate: $64,808.23

Assessor Name: Craig Anding

Date Created: 02/22/2016

Notes: Replace toilet accessories – broken and missing

System: C1030 - Fittings



Location: Toilets

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Remove and replace damaged toilet paritions - handicap units

Qty: 12.00

Unit of Measure: Ea.

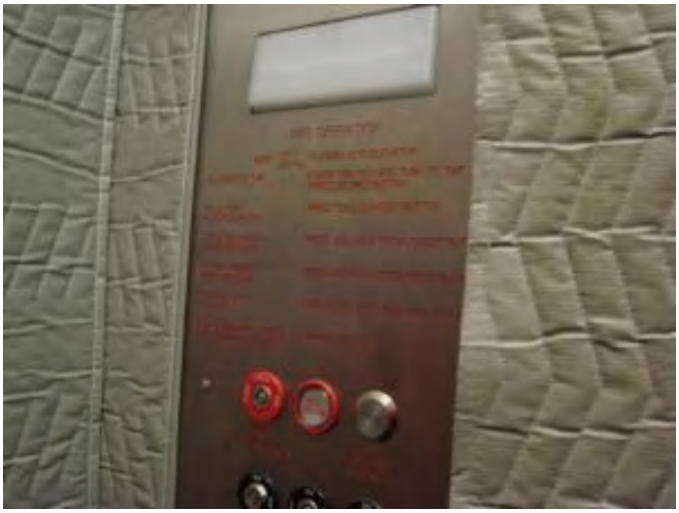
Estimate: $11,734.26

Assessor Name: Craig Anding

Date Created: 02/22/2016

Notes: Replace toilet partitions for accessibility

System: D1010 - Elevators and Lifts



Location: Elevator

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Upgrade passenger elevator cab and controls

Qty: 1.00

Unit of Measure: Ea.

Estimate: $68,878.73

Assessor Name: Craig Anding

Date Created: 02/22/2016

Notes: Updated elevator – call buttons and cabin panel not code compliant

System: D2010 - Plumbing Fixtures

Location: Restrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 30.00

Unit of Measure: Ea.

Estimate: $224,175.82

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace thirty (30) water closets, in use beyond their service life, with new code compliant fixtures.

System: D2010 - Plumbing Fixtures

Location: Corridors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 5.00

Unit of Measure: Ea.

Estimate: $78,464.48

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace five (5) wall hung drinking fountains and integral refrigerated coolers in the corridors. These units are beyond their service life and most are NOT accessible type.

System: D2010 - Plumbing Fixtures

Location: Restrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace wall hung urinals

Qty: 17.00

Unit of Measure: Ea.

Estimate: $56,938.21

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace seventeen (17) urinals, in use beyond their service life, with new low flow fixtures.

System: D2010 - Plumbing Fixtures

Location: Corridors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 3.00

Unit of Measure: Ea.

Estimate: $23,594.12

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace three (3) service sinks, located in the corridors of each floor, which are beyond their service lives.

System: D2010 - Plumbing Fixtures

Location: Restrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 3.00

Unit of Measure: Ea.

Estimate: $11,542.02

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace three (3) lavatories, in use beyond their service life, with new code compliant fixtures.

System: D2030 - Sanitary Waste

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 85,350.00

Unit of Measure: S.F.

Estimate: $418,705.67

Assessor Name: Craig Anding

Date Created: 02/03/2016

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

System: D2040 - Rain Water Drainage

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 85,350.00

Unit of Measure: S.F.

Estimate: $378,478.66

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Hire a qualified contractor to perform a detailed examination of the rain water drainage piping 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: Main mechanical room

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 2.00

Unit of Measure: Ea.

Estimate: $131,557.10

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace two (2) 5HP end suction chilled water return pumps which are damaged from rust.

System: D3040 - Distribution Systems

Location: 3rd floor mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 25.00

Unit of Measure: TonAC

Estimate: $468,502.32

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace AHU-1, located in a 3rd floor mechanical room, serving the 1st and 2nd floor classrooms which is beyond its service life.

System: D3040 - Distribution Systems

Location: 3rd floor mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 25.00

Unit of Measure: TonAC

Estimate: $468,502.32

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace AHU-2, located in a 3rd floor mechanical room, serving the 3rd floor classrooms which is beyond its service life.

System: D3040 - Distribution Systems

Location: 2nd floor mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 248.00

Unit of Measure: Seat

Estimate: $413,035.74

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace AHU-3, located in a 2nd floor mechanical room, serving the Auditorium which is beyond its service life.

System: D3040 - Distribution Systems

Location: 2nd floor mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for IMC (850 students).

Qty: 676.00

Unit of Measure: Student

Estimate: $337,316.40

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace AHU-5, located in a 2nd floor mechanical room, serving the IMC which is beyond its service life.

System: D3040 - Distribution Systems

Location: Administration offices

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Admin (2000 students).

Qty: 676.00

Unit of Measure: Student

Estimate: $282,338.45

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace AHU-6, located in a 2nd floor mechanical room, serving the administration offices which is beyond its service life.

System: D3040 - Distribution Systems

Location: Gymnasium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Gymnasium (single station)

Qty: 6,000.00

Unit of Measure: S.F.

Estimate: $246,674.89

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace the two (2) heating and ventilation units serving the Gymnasium, which are beyond their service lives.

System: D3040 - Distribution Systems

Location: 2nd floor mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Cafeteria (850)

Qty: 676.00

Unit of Measure: Student

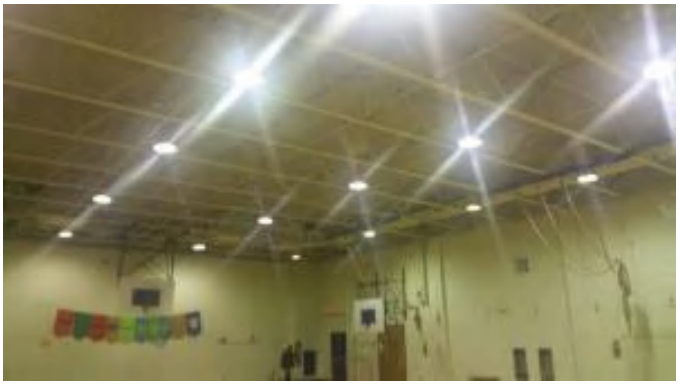
Estimate: $214,449.68

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace AHU-4, located in a 2nd floor mechanical room, serving the Cafeteria which is beyond its service life.

System: D5020 - Lighting and Branch Wiring



Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Lighting Fixtures (SF)

Qty: 0.00

Unit of Measure: S.F.

Estimate: $418,502.34

Assessor Name: Craig Anding

Date Created: 02/12/2016

Notes: Install new lighting system for 50% of the building.
85,350 SF x 50% = 42, 675 SF

System: D5020 - Lighting and Branch Wiring

Location: throughout the building

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Replace Wiring Devices (SF) - surface mounted conduit and boxes

Qty: 0.00

Unit of Measure: S.F.

Estimate: $238,534.20

Assessor Name: Craig Anding

Date Created: 02/12/2016

Notes: Install new receptacles for 50% of the building

System: E2010 - Fixed Furnishings

Location: Auditorium

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 80.00

Unit of Measure: Ea.

Estimate: $70,538.17

Assessor Name: Craig Anding

Date Created: 02/22/2016

Notes: Repair or replace auditorium seats – 10% damaged or missing

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

System: C3030 - Ceiling Finishes

Location: Various

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 66,200.00

Unit of Measure: S.F.

Estimate: $998,456.88

Assessor Name: Craig Anding

Date Created: 02/22/2016

Notes: Replace suspended acoustic tile ceiling system – beyond service life (90% of suspended ceiling)

System: D2020 - Domestic Water Distribution

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace domestic water piping (75 KSF)

Qty: 85,350.00

Unit of Measure: S.F.

Estimate: $419,531.88

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for over 40 years, and replace any damaged piping.

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace chilled water distribution piping (75KSF)

Qty: 85,350.00

Unit of Measure: S.F.

Estimate: $1,147,412.25

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Hire a qualified contractor to examine the chilled water distribution piping, in service for over 40 years, and replace any damaged piping and to further quantify the extent of potential failures.

System: D3040 - Distribution Systems

Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace power roof ventilator (24" dia.)

Qty: 3.00

Unit of Measure: Ea.

Estimate: $125,465.78

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace the three (3) existing roof mounted power ventilators, which are beyond their useful service lives.

System: D3040 - Distribution Systems

Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace utility set exhaust fan (5 HP)

Qty: 2.00

Unit of Measure: Ea.

Estimate: $64,049.70

Assessor Name: Craig Anding

Date Created: 02/03/2016

Notes: Replace the two (2) existing roof mounted exhaust fans that are beyond their useful service lives.

System: D5010 - Electrical Service/Distribution

Location: electrical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Service Transformer, Add Switchboard

Qty: 0.00

Unit of Measure: Ea.

Estimate: $311,446.73

Assessor Name: Craig Anding

Date Created: 02/12/2016

Notes: Install a new and upgraded electrical service for this school to handle existing loads plus any additional mechanical loads.

System: D5030 - Communications and Security

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Add/Replace Clock System or Components

Qty: 0.00

Unit of Measure: Ea.

Estimate: $139,906.16

Assessor Name: Craig Anding

Date Created: 02/12/2016

Notes: Install new clock system
Note; A multiplier of 1.2 (instead of 1.0) is used to cover the additional cost of the other related construction cost.

System: D5030 - Communications and Security

Location: throughout the building

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add/Replace Video Surveillance System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $41,278.80

Assessor Name: Craig Anding

Date Created: 02/12/2016

Notes: Install additional cameras for the video surveillance system.

System: D5090 - Other Electrical Systems

Location: roof

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Provide Lightning Protection System

Qty: 1.00

Unit of Measure: LS

Estimate: $92,224.65

Assessor Name: Craig Anding

Date Created: 02/12/2016

Notes: Install new lightning protection on the roof.

System: E1020 - Institutional Equipment

Location: auditorium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Add/Replace Stage Theatrical Lighting System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $90,802.49

Assessor Name: Craig Anding

Date Created: 02/12/2016

Notes: Install a new auditorium stage lighting controller.

Priority 5 - Response Time (> 5 yrs):

System: D3040 - Distribution Systems

Location: Throughout building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 5 - Response Time (> 5 yrs)
Correction: Replace hydronic heating piping (75KSF)
Qty: 85,350.00
Unit of Measure: S.F.
Estimate: $840,220.63
Assessor Name: Craig Anding
Date Created: 02/03/2016

Notes: Hire a qualified contractor to examine the distribution piping, in service for over 40 years, and replace any damaged piping and to further quantify the extent of potential failures.

System: D3060 - Controls & Instrumentation

Location: Throughout building
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 5 - Response Time (> 5 yrs)
Correction: Replace pneumatic controls with DDC (75KSF)
Qty: 85,350.00
Unit of Measure: S.F.
Estimate: $1,830,936.00
Assessor Name: Craig Anding
Date Created: 02/03/2016

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

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D1010 Elevators and Lifts	Hydraulic, passenger elevator, 2500 lb, 5 floors, 100 FPM	1.00	Ea.	building interior					30	2008	2038	$142,170.00	$156,387.00
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, hot water, gross output, 2628 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Main Mechanical Room	De Dietrich	GT-413A	507261/7		35	2004	2039	$69,812.50	$153,587.50
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, hot water, gross output, 2628 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Main Mechanical Room	De Dietrich	GT-413A	507261/6		35	2004	2039	$69,812.50	$153,587.50
D3030 Cooling Generating Systems	Cooling tower, packaged unit, galvanized steel, blow through, centrifugal type, 250 ton, includes standard controls, excludes pumps and piping	1.00	Ea.	Main Mechanical Room	Evapco	USS 19-311	T031377		20	2004	2024	$41,840.70	$46,024.77
D3030 Cooling Generating Systems	Water chiller, screw liquid chiller, packaged unit, water cooled, 250 ton, includes standard controls, excludes water tower	1.00	Ea.	Main Mechanical Room	York	YCWS0240	REMM005745		20	2004	2024	$136,570.50	$150,227.55
D3040 Distribution Systems	Central station air handling unit, packaged indoor, constant volume, 10,000 CFM, cooling coils may be chilled water or DX, heating coils may be hot water, steam or electric	2.00	Ea.	3rd Floor Mechanical Room					25	1973	1998	$33,042.90	$72,694.38
D3040 Distribution Systems	Central station air handling unit, packaged indoor, constant volume, 10,000 CFM, cooling coils may be chilled water or DX, heating coils may be hot water, steam or electric	2.00	Ea.	3rd Floor Mechanical Room					25	1973	1998	$33,042.90	$72,694.38
D3040 Distribution Systems	Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 15 H.P., to 1000 GPM, 5" size	2.00	Ea.	Main Mechanical Room	Armstrong	BF-STD	483110		25	2004	2029	$21,432.00	$47,150.40
D3040 Distribution Systems	Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 15 H.P., to 1000 GPM, 5" size	2.00	Ea.	Main Mechanical Room	Armstrong	BF-STD	483109		25	2004	2029	$21,432.00	$47,150.40
D5010 Electrical Service/Distribution	Load interrupter switch, 2 position, 300 kVA & below, 13.8 kV, 600 amp w/CLF fuses, NEMA 1	1.00	Ea.	electrical room					30	1973	2047	$42,600.60	$46,860.66
D5010 Electrical Service/Distribution	Motor control center, structures, 22,000 rms, takes any combination of starters, 600 amp, up to 72" high	2.00	Ea.	electrical room					30	2010	2040	$3,663.90	$8,060.58
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NQOD, 120/208 V, 600 A, 5 stories, 50' horizontal	2.00	Ea.	electrical room					30	2010	2040	$34,030.80	$74,867.76
D5090 Other Electrical Systems	Generator set, diesel, 3 phase 4 wire, 277/480 V, 125 kW, incl battery, charger, muffler, & day tank, excl conduit, wiring, & concrete	1.00	Ea.	electrical room					30	1973	2047	$50,797.80	$55,877.58
												Total:	**$1,085,170.46**

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):	94,300
Year Built:	1973
Last Renovation:	
Replacement Value:	$1,595,380
Repair Cost:	$211,472.31
Total FCI:	13.26 %
Total RSLI:	74.72 %

Description:

Attributes:

General Attributes:

Bldg ID:	S639001	Site ID:	S639001

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	63.67 %	0.00 %	$0.00
G40 - Site Electrical Utilities	106.67 %	51.55 %	$211,472.31
Totals:	**74.72 %**	**13.26 %**	**$211,472.31**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2010	Roadways	$11.52	S.F.		30				0.00 %	0.00 %				$0
G2020	Parking Lots	$7.65	S.F.	12,900	30	1994	2024		30.00 %	0.00 %	9			$98,685
G2030	Pedestrian Paving	$11.52	S.F.	47,500	40	2003	2043		70.00 %	0.00 %	28			$547,200
G2040	Site Development	$4.36	S.F.	94,300	25	2003	2028		52.00 %	0.00 %	13			$411,148
G2050	Landscaping & Irrigation	$3.78	S.F.	33,900	15	2003	2018	2030	100.00 %	0.00 %	15			$128,142
G4020	Site Lighting	$3.58	S.F.	94,300	30	1973	2003	2047	106.67 %	40.93 %	32		$138,190.58	$337,594
G4030	Site Communications & Security	$0.77	S.F.	94,300	30	1973	2003	2047	106.67 %	100.92 %	32		$73,281.73	$72,611
								Total	**74.72 %**	**13.26 %**			**$211,472.31**	**$1,595,380**

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.

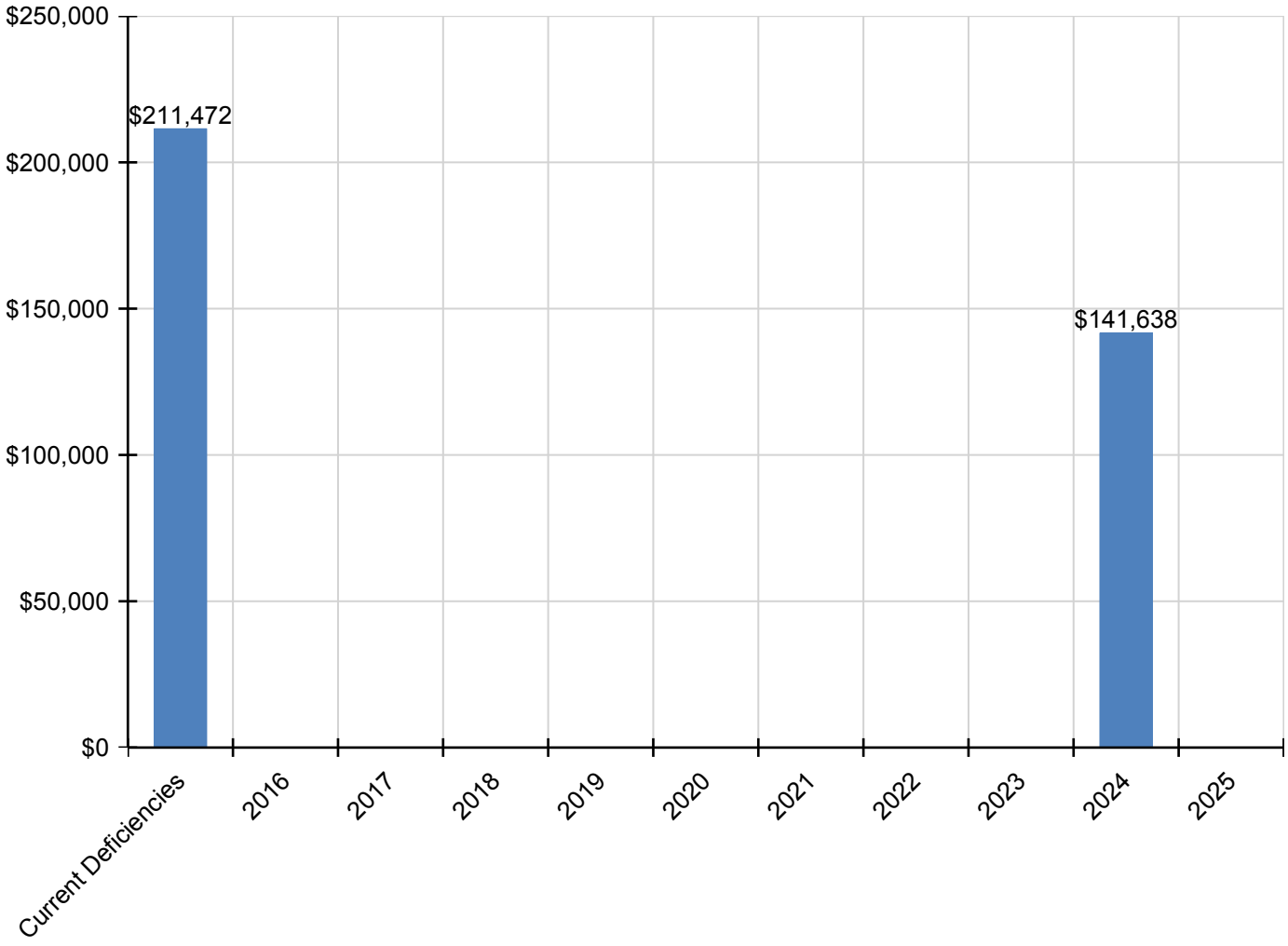
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$211,472**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$141,638**	**$0**	**$353,111**
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	$141,638	$0	**$141,638**
G2030 - Pedestrian Paving	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2040 - Site Development	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2050 - Landscaping & Irrigation	$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	$138,191	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$138,191**
G4030 - Site Communications & Security	$73,282	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$73,282**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

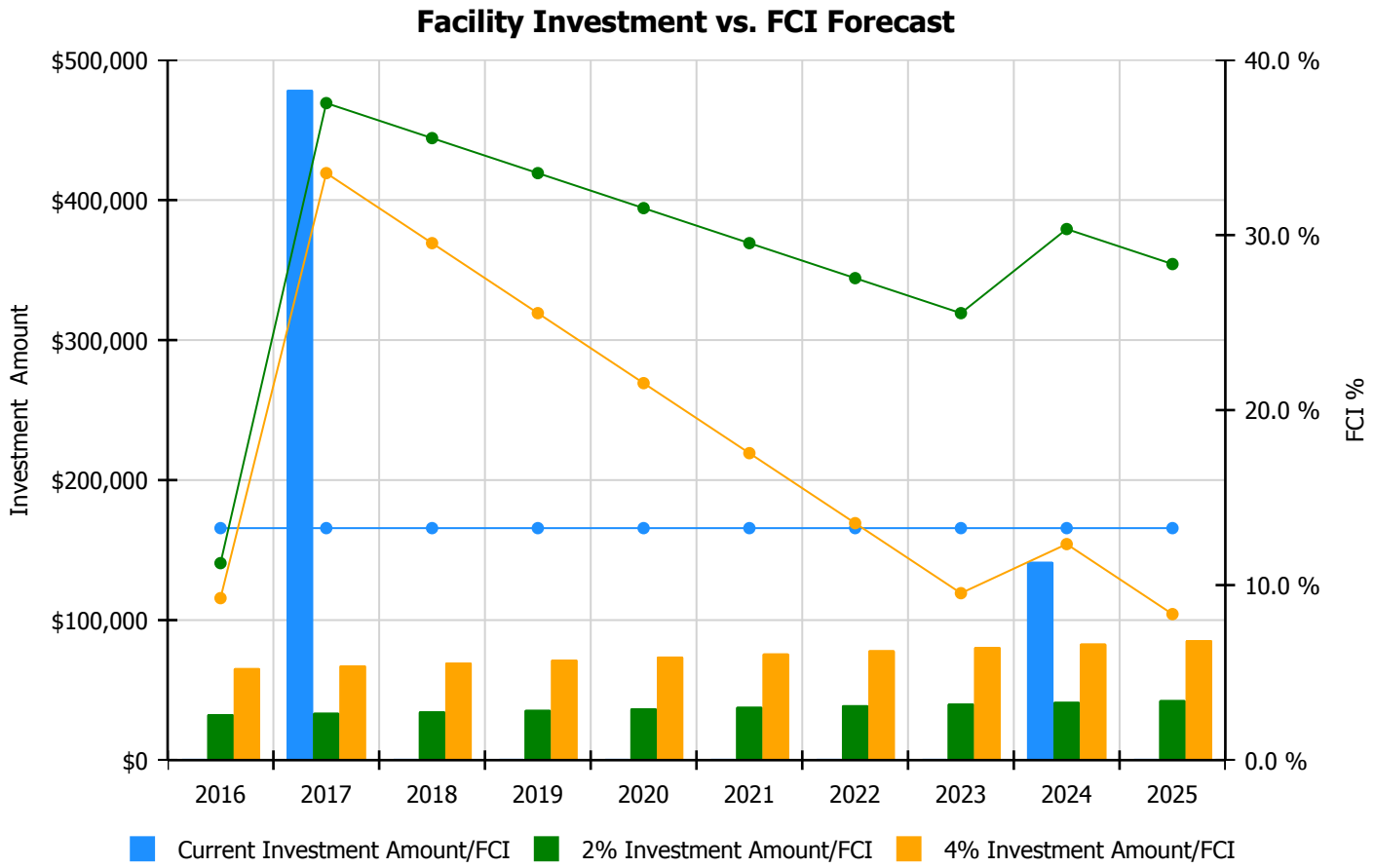
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

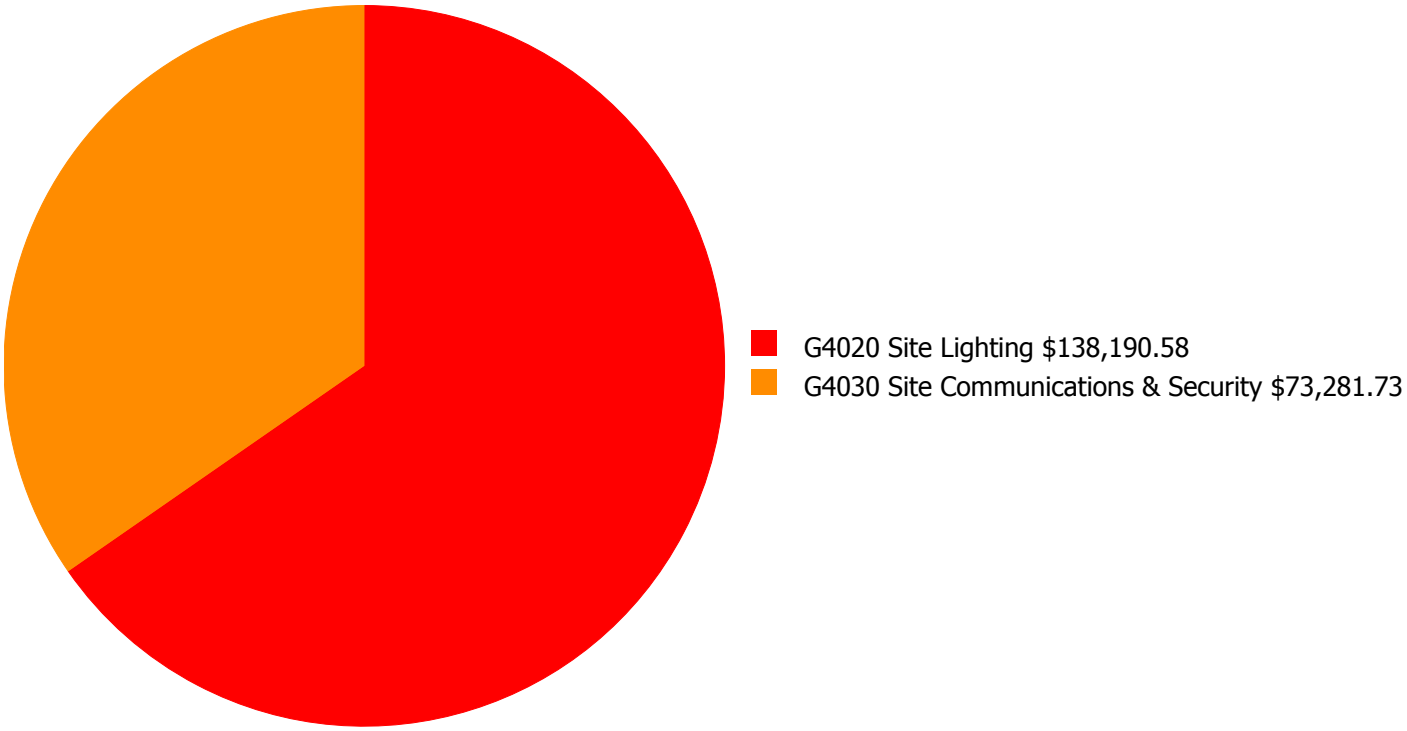
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 13.26%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$32,865.00	11.26 %	$65,730.00	9.26 %
2017	$478,705	$33,851.00	37.54 %	$67,702.00	33.54 %
2018	$0	$34,866.00	35.54 %	$69,733.00	29.54 %
2019	$0	$35,912.00	33.54 %	$71,825.00	25.54 %
2020	$0	$36,990.00	31.54 %	$73,979.00	21.54 %
2021	$0	$38,099.00	29.54 %	$76,199.00	17.54 %
2022	$0	$39,242.00	27.54 %	$78,485.00	13.54 %
2023	$0	$40,420.00	25.54 %	$80,839.00	9.54 %
2024	$141,638	$41,632.00	30.34 %	$83,264.00	12.34 %
2025	$0	$42,881.00	28.34 %	$85,762.00	8.34 %
Total:	**$620,343**	**$376,758.00**		**$753,518.00**	

Deficiency Summary by System

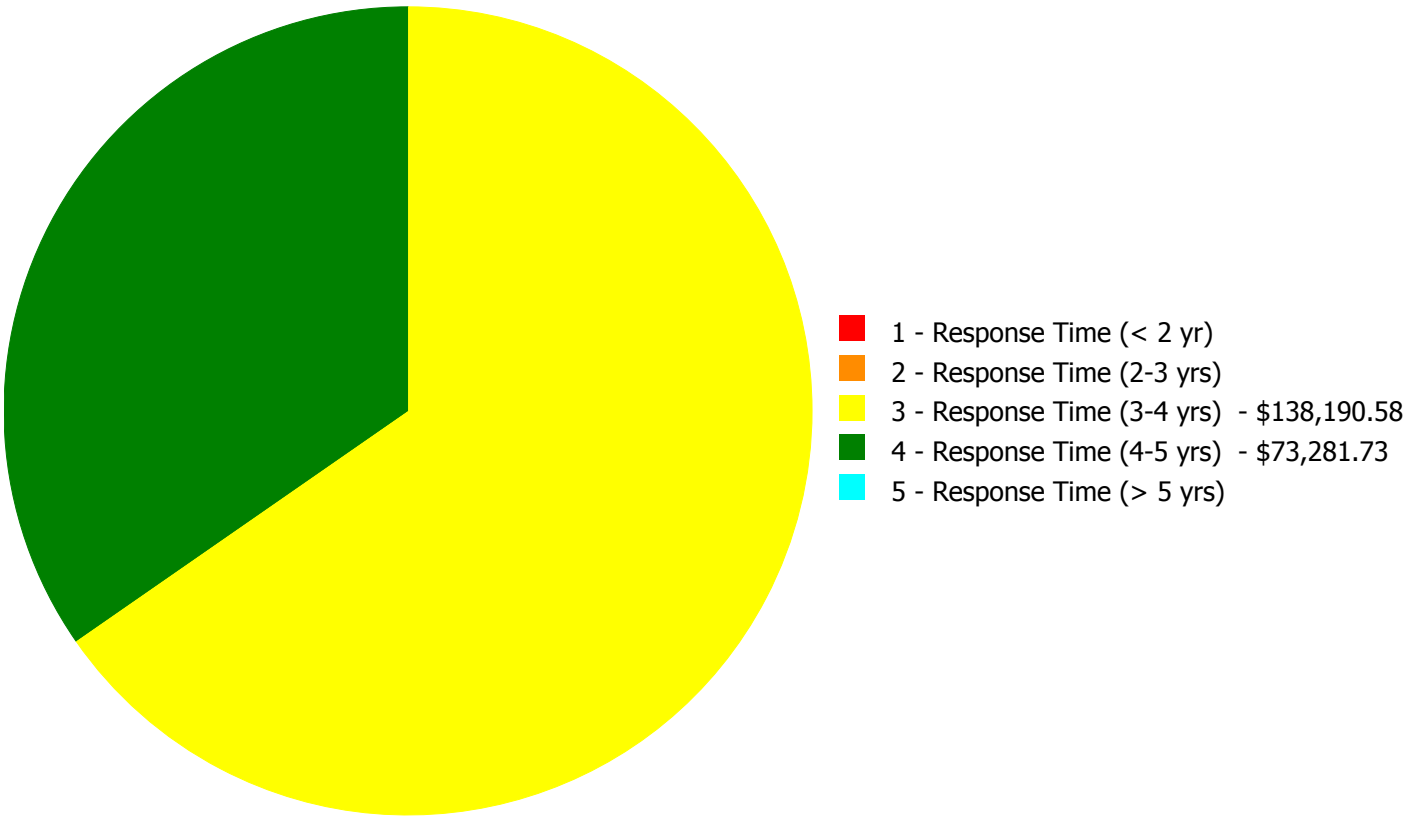
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $211,472.31

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: $211,472.31

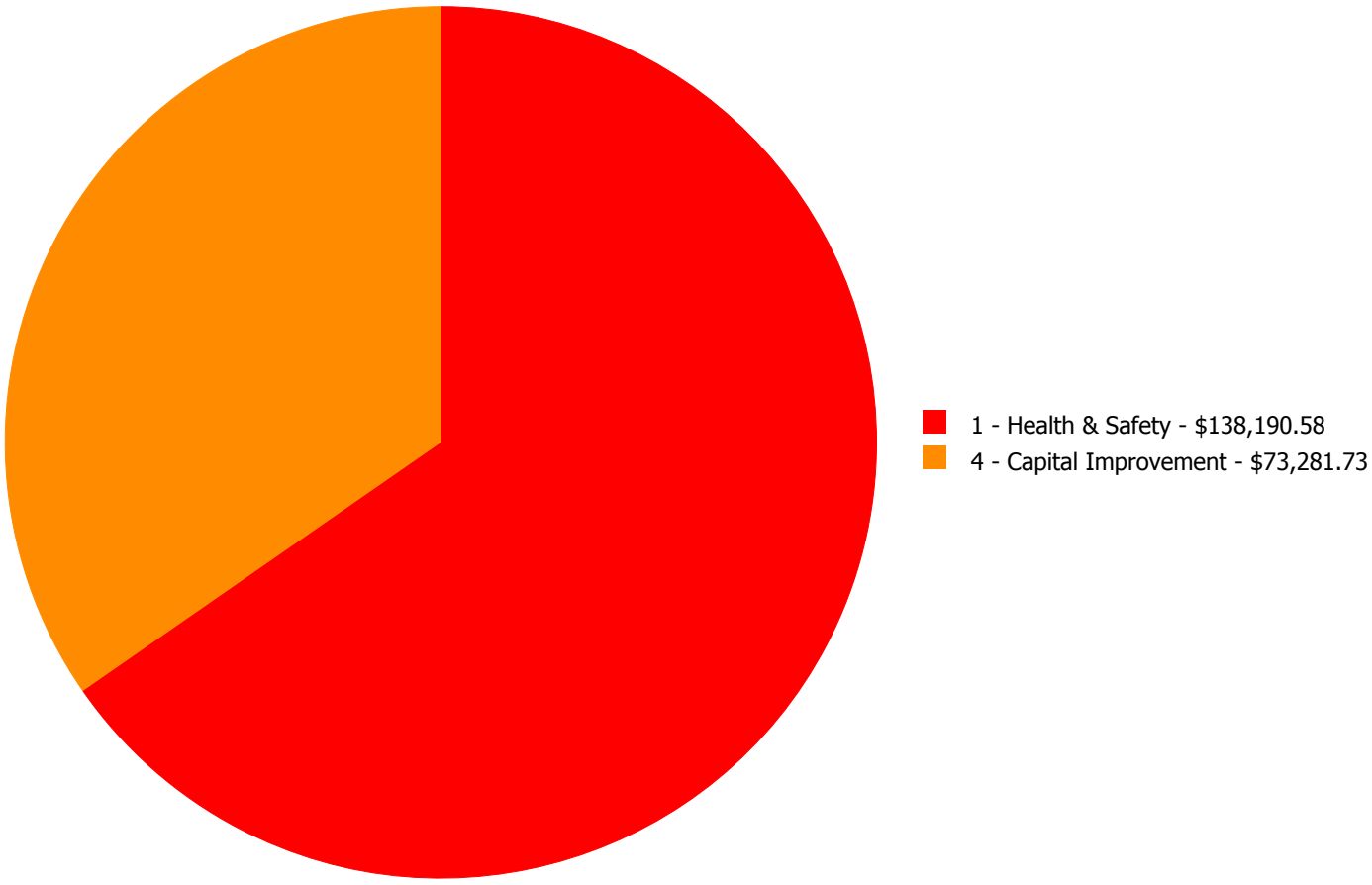
Deficiency By Priority Investment Table

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
G4020	Site Lighting	$0.00	$0.00	$138,190.58	$0.00	$0.00	$138,190.58
G4030	Site Communications & Security	$0.00	$0.00	$0.00	$73,281.73	$0.00	$73,281.73
	Total:	$0.00	$0.00	$138,190.58	$73,281.73	$0.00	$211,472.31

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: $211,472.31

Deficiency Details by Priority

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

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

System: G4020 - Site Lighting

Location: grounds

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Add Site Lighting - pole mounted - select the proper light and pole

Qty: 1.00

Unit of Measure: Ea.

Estimate: $138,190.58

Assessor Name: Craig Anding

Date Created: 02/12/2016

Notes: Install additional pole-mounted lights for the grounds

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

System: G4030 - Site Communications & Security

Location: grounds

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add Site Paging System

Qty: 0.00

Unit of Measure: Ea.

Estimate: $73,281.73

Assessor Name: Matt Mahaffey

Date Created: 02/12/2016

Notes: Install additional exterior speakers for the grounds

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