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.

Edmonds, FS School

Governance	DISTRICT	Report Type	Elementary
Address	8025 Thouron Ave.	Enrollment	521
	Philadelphia, Pa 19150	Grade Range	'00-06'
Phone/Fax	215-276-5261 / 215-276-5811	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Edmonds	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	**40.05%**	**$17,342,653**	**$43,297,883**
Building	41.36 %	$16,905,082	$40,875,348
Grounds	18.06 %	$437,571	$2,422,535

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	57.92 %	$1,185,870	$2,047,473
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.00 %	$0	$2,971,255
Windows (Shows functionality of exterior windows)	00.00 %	$0	$1,449,805
Exterior Doors (Shows condition of exterior doors)	110.98 %	$129,537	$116,725
Interior Doors (Classroom doors)	02.11 %	$5,965	$282,555
Interior Walls (Paint and Finishes)	09.55 %	$101,608	$1,063,405
Plumbing Fixtures	08.65 %	$94,157	$1,088,360
Boilers	80.87 %	$1,215,409	$1,502,935
Chillers/Cooling Towers	62.43 %	$1,230,284	$1,970,640
Radiators/Unit Ventilators/HVAC	151.85 %	$5,255,074	$3,460,695
Heating/Cooling Controls	158.90 %	$1,726,891	$1,086,750
Electrical Service and Distribution	101.58 %	$793,181	$780,850
Lighting	19.09 %	$532,925	$2,791,740
Communications and Security (Cameras, Pa System and Fire Alarm)	22.83 %	$238,751	$1,045,695

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

S621001;Edmonds, F

Final

Site Assessment Report

January 31, 2017

PARSONS

Table of Contents

Site Executive Summary

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

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

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

Gross Area (SF):	80,500
Year Built:	1948
Last Renovation:	
Replacement Value:	$43,297,883
Repair Cost:	$17,342,653.45
Total FCI:	40.05 %
Total RSLI:	69.67 %

Description:

Facility Assessment
June, 2015

School District of Philadelphia
Edmonds F Elementary School
8025 Thouron Ave
Philadelphia, PA 19150

80,500 SF / 755 Students / LN 04

The Edmonds F Elementary School Building is located at 8025 Thouron Ave in Philadelphia, PA. The 2 story, approximately 71,200 square foot main building was originally constructed in 1948 and in approximately 2000 a 10,000 square foot single storied addition was added to the northeast corner of the main building. The main building has a small, partial basement.

The Facility Area Coordinator was not able to accompany the Parsons assessment team on this site visit. Mr. Tony Kowalski, the Building Engineer, accompanied us on our tour of the school and provided us with detailed information on the building systems and recent maintenance history.

STRUCTURAL/ EXTERIOR CLOSURE:

The main building typically rests on concrete foundations and bearing walls that are not showing signs of settlement. There is no evidence of water penetration in the basement mechanical spaces.

The main structure consists typically of masonry load bearing walls supporting roof, in good condition. Floor above basement and roof is a concrete slab in fair condition.

The building envelope is typically face brick over CMU backup. In general, masonry is in fair to poor condition with some mortar missing and deteriorated.

The original windows were replaced in early 2000's with extruded aluminum double hung windows single glazed with acrylic glazing. Many of the windows controls are no longer operable. Most galvanized window guards are in good condition.

The roof structure consists of steel trusses and purlins supporting roof deck and resting on load bearing walls.

Roofing is typically built up roofing installed in 2000. The link between the main building and the addition is covered with built-up system also installed in 2000.

Exterior doors and frames are typically hollow metal in poor condition; some doors are rusting. The doors are at the end of their useful life.

INTERIORS:

Partition wall types include painted CMU, plastered ceramic blocks (hollow brick) and some drywall. The interior wall finishes are generally painted CMU and brick, and glazed block in restrooms. Generally, paint is in fair condition and very poor condition in the basement mechanical spaces.

Toilets in Addition have painted CMU walls and ceramic tile flooring installed in early 2000's.

Most ceilings in the main building corridors, classroom, auditorium and gym have exposed painted plaster ceilings. Restrooms have drywall ceilings.

The suspended ceilings in the Addition are generally in good condition since it was installed in the early 2000s.

Flooring in the main building classrooms, corridors and auditorium is VAT and should be replaced with VCT. Flooring in the addition corridors and classrooms is VCT in good condition; restroom flooring is ceramic tile in good condition installed in early 2000's. Gym flooring and auditorium stage area is hardwood, (30% requires refinishing).

Interior doors are flat panel wood doors, generally in fair condition in need of refinishing, solid core wood doors in some rooms are damaged; doors leading to exit stairways are retrofitted with hollow metal doors and frames in good condition; door to restrooms are hollow metal doors and frames in fair condition. Most doors do not have ADA compliant handles.

Stair construction (roof and basement access) is generally steel stringers with concrete treads in good condition.

Furnishings include fixed casework in classrooms, corridors and library, generally in good condition; window shades/blinds, generally in good condition; fixed auditorium seating is original, generally in fair condition but need to repair/replace a dozen damage seats.

Fittings include original chalk boards, generally in poor condition. Many classrooms are using white boards attached to the chalk boards.

All toilets in the main building and addition are fitted with phenolic panel partitions and accessories installed approximately in early 2000's and in very good condition.

Interior identifying signage is typically directly painted on wall or door surfaces in poor condition. Some signage is missing.

CONVEYING EQUIPMENT:

The building does not have an elevator.

ACCESSIBILITY:

The building does have accessible entrance via portico access ramps, and accessible routes within the main building to addition via a Savaria chair lift. None of the doors in the main building have ADA required door handles. Toilets are generally in compliance with ADA.

GROUNDS (SITE):

Chain link fencing is installed along the property line. Paving is showing signs of cracking and deterioration along East Sedgwick Street near playground entrance.

An un-fenced in playground area is located on the north side of the site along the property line facing Williams Ave;

A fenced parking area is provided within the site bordering on East Gorgas Lane.

Landscaping, mid-sized tree's, bushes and grass, is provided between the schools front elevation and sidewalk along East Sedgwick Street and on the south side between east of the auditorium and facing classroom wing.

MECHANICAL

Plumbing Fixtures

Many of the plumbing fixtures were replaced in 2010. Fixtures in the restrooms on each floor consist of wall mounted flush valve water closets, wall hung urinals, and lavatories with wheel handle faucets. The Building Engineer did not report any issues with the plumbing fixtures. The plumbing fixtures are well within their service lives and should provide reliable service for the next 25-30 years.

Drinking fountains in the corridors are a mixture of wall hung porcelain and stainless steel fountains. The stainless steel fountains are located only in the building addition. The porcelain fountains are well beyond their service life and should be replaced; they are NOT accessible type.

Two (2) service sinks are available in janitor closets in the corridor on each floor for use by the janitorial staff.

The Kitchen only has a single one-basin sink installed for washing hands.

Domestic Water Distribution

A 4" city water service enters the building in the boiler room on the Northwest side of the building from East Sedgwick Street. The 4" meter and valves are located in the same room and a reduced pressure backflow preventer is installed. The original domestic hot and cold water distribution piping was replaced 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 has been in use for an unknown amount of time and should be inspected and repaired as necessary by a qualified contractor.

Two (2) Paloma instant hot water heaters with associated circulating pumps, installation dates unknown, supply hot water for domestic use. The hot water heaters serve a domestic water storage tank located in the boiler room with two (2) 1/2HP circulating pumps installed. One (1) of the pumps is rusted out and no longer operational because the storage tank leaks onto it. The units and tank are located in the boiler room. The units were operable during the site visit and the Building Engineer reported no serious issues; however they are most likely beyond their service life and should be replaced in the next 1-3 years.

Sanitary Waste

The original storm and sanitary sewer piping is galvanized piping with threaded fittings.

A sewage ejector is not installed in this building.

The maintenance staff reported mostly minor problems with the sanitary waste piping systems. However, the sewer piping has been in service for over 65 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

Rain water drains from the roof are routed through mechanical chases in the building and appear to be original. The piping is threaded galvanized and has been in use well beyond its service life. The District should hire a qualified contractor to examine the rain water drainage piping using video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

The addition on the Northeast portion of the building has a sloped roof and external rain leaders. The downspouts are aluminum and transition to cast iron piping with hub and spigot fittings approximately two (2') feet above the ground. These rain leaders are in good condition and the Building Engineer reported no issues with them.

Energy Supply

A 6" city gas service enters the building from East Sedgwick Street. The gas meter is 4" and is located in the boiler room. A gas booster pump is installed to ensure adequate gas pressure to the boilers.

The reserve oil supply is stored in an underground storage tank (UST) just outside the boiler room near East Sedgwick Street. Duplex pumps located in the boiler room circulate oil through the system. Oil is used as a backup fuel and the District receives credit from the gas utility as an interruptible service. The storage tank should be inspected on a regular basis. USTs have an anticipated service life of 20 years. The actual condition of the fuel side is unknown.

Heat Generating Systems

Low pressure steam is generated at a maximum of 15 lbs. /sq. in by two (2) 156HP Weil-McLain model 94 cast iron sectional boilers, estimated to have been installed in 1988. Boiler B1 was not operational during the site visit, according to the Building Engineer, leaving the school with only one (1) functional boiler. Each boiler is equipped with a Power Flame burner designed to operate on natural gas or fuel oil. Combustion air makeup is supplied by louvers equipped with motorized dampers. Burner controls provide full modulation with flame sensing and pressure atomization on oil. Burner oil pumps are loose and not driven by the fan motor. 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 oil supply to the burner is equipped with dual solenoid valves and a strainer, but no disposable media filter. The condensate has boiler chemical treatment. Gas/oil burners have an anticipated service life of 18 years; these burners have been in service nearly 30 years and should be replaced with new units that have direct spark oil ignition and solid state flame sensing. Cast iron sectional boilers have an anticipated service life of 35 years or more with proper maintenance. These boilers appear to be in poor condition. The District should budget to immediately replace the boiler that is out of service. The operational boiler should be scheduled for replacement in the next few years as it is nearing the end of its anticipated service life.

A Shipco boiler feed tank and pump assembly are installed in the boiler room. The boiler feed tank provides treated make-up water to the boilers. The unit has three (3) 3/4HP pumps headered together and mounted on the tank. The unit appears to be in good condition and the Building Engineer reported no problems with the system. Three (3) condensate receivers are installed in the boiler room. Two (2) of the receivers have single 3/4HP pumps, the other receiver has two (2) 3/4HP pumps.

Distribution Systems

Steam piping mains are black steel with flanged fittings and smaller distribution piping is black steel with welded fittings. The condensate piping is black steel with threaded fittings. Steam and condensate piping mains run up through the building to the unit ventilators and fin tube radiators on both floors. The distribution piping has been in use well 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 steam and condensate piping and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 10 years.

Unit ventilators and fin tube radiators provide heating for classrooms, offices, and to the corridors. The unit ventilators and fin tube radiators are original to the building and well beyond their service lives. Outdoor air for the building is provided by wall openings in the unit ventilators. The existing unit ventilators should be removed and new units installed with hot and chilled water coils and integral heat exchangers to introduce sufficient outdoor air to the building. Ventilation is provided to the Cafeteria by four (4) unit ventilators; this does not meet current code required ventilation requirements. Heating is supplied to the Auditorium by unit ventilators, heating for the Gymnasium is supplied by fin tube radiators. Supplemental heating is provided to the Auditorium and Gymnasium by two (2) heating and ventilation units (HV). The Building Engineer rarely runs these units as heating for the spaces is sufficient without running

the HVs; the units are original to the building and well beyond their service lives. Ventilation should be provided for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers. For the Gymnasium a fan coil air handling unit should be hung from the structure with outdoor air ducted to the unit from louvers in the window openings. Similar units should be installed for the administration offices. Ventilation should be provided for the Auditorium by installing a constant volume air handling unit with distribution ductwork and registers. These units would be equipped with hot water heating coils and chilled water cooling coils.

In the addition unit ventilators and fin tube radiators provide heating for classrooms. A single HV unit provides heating and ventilation for the corridor. These units are newer than the original building, are in good condition, and should provide reliable service for the next 5-10 years.

Exhaust for the restrooms and janitor closets is provided by four (4) roof mounted exhaust fans and four (4) fans located within the building; two (2) on the first floor and two (2) on the second floor. The roof mounted exhaust fans are in poor condition, two (2) are not operational, and all should be replaced. The four (4) exhaust fans within the building are all original, well beyond their service lives, and should be replaced. Seventeen (17) roof mounted gravity ventilators provide relief air for the corridors and are in poor condition. All gravity ventilators are beyond their service lives and should be replaced.

Terminal & Package Units

Several of the classrooms in the school building have window air conditioning units that have an anticipated service life of only 10 years. Installing a 220 ton air-cooled chiller, with pumps located in a mechanical room, and chilled water distribution piping would supply more reliable air conditioning for the building with a much longer service life.

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.

Two (2) exhaust hoods are installed above the warming equipment in the Kitchen. An automatic gas shutoff system and fire suppression system are NOT installed with the kitchen equipment; the kitchen hoods are beyond their service lives and should be replaced. A make-up air unit is not installed but should be.

Controls & Instrumentation

The original pneumatic systems provide basic control functions. Pneumatic room thermostats are intended to control the unit ventilator control valves. In reality the ventilator control valves are wide open and heating control is achieved via the boilers. Pneumatic control air is supplied from one (1) duplex Honeywell compressor located in the boiler room. The Building Engineer reported that the control air line is constantly blowing down and thus the air compressor is constantly running. The pneumatic systems are beyond their service life and require too much attention from the maintenance staff. The original control valves and pneumatic actuators are beyond their service life and should be rebuilt or replaced. These controls should be converted to DDC.

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 pipes.

ELECTRICAL:

Site electrical service - The primary power is at 13.2KV from the power poles along the Thouron St feeding a pole-top transformer. The secondary power is brought into the school building overhead and down on the exterior of the building into in the electrical room. It feeds an old 400A, 120V/240 V, 2 phase switchboard. The PECO meter (PECO 01 017457386) is also located inside the new electrical room (basement). The switchboard is in a poor condition and has reached the end of its useful service life.

Distribution system - The electrical distribution is accomplished by using the 400A switchboard distribution panel (located in the electrical room) and feeding several 120V lighting and receptacle panels throughout the building. These panels are in poor condition (11 total). 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 80% of the school lighting was upgraded in 2006, however there are some part of the building (20%) lacks adequate illumination level. The majority of interior lighting fixtures (80%) are in good condition and have not reached the end of their useful service life.

Fire alarm - The present Fire Alarm system is not automatic/addressable, and is not in compliance with safety code. There are some manual pulls stations throughout the building. However, there are not 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, there is communication between classrooms to classrooms.

Clock and Program system – There are clocks in each classroom (12-inch round clocks) and the clocks are 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. Cameras should be installed at exit doors, corridors, exterior, and other critical areas. However, the school would like more cameras to be installed to cover more critical areas. These new cameras should be controlled by a Closed Circuit Television system (CCTV).

Emergency Power System – There is a fairly new emergency generator (50KW) in this building. It was installed in 2012 and it is in a good shape.

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 adequate lightning protection system installed for this school on the roof. There are numerous lighting rods installed on the roof top, and they 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.

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.

Elevators – This school has a no elevator.

RECOMMENDATIONS:

- Install all new roofing system including insulation; tear-down existing roofing; install flashing, counter flashing and reglets.
- Replace rusted and damaged exterior doors.
- Replace all VAT tile.
- Repair (10%) & refinish hardwood flooring (50%).
- Repair (15%) and repaint all walls.
- Install new signage throughout.
- Provide ADA compliant hardware on interior doors.
- Provide ADA compliant elevator serving basement and all floors (exterior)
- Replace damaged sections of chain link fencing – 1,000 SF.
- Replace courtyard paving - 5,000 SF.
- Replace sidewalk and driveway paving.
- Resurface and restripe parking, replace wheel stops.
- Replace six (6) porcelain wall hung drinking fountains in the corridors. These units are beyond their service life and most are NOT accessible type.
- Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for an unknown amount of time, and replace any damaged piping.
- Replace the two (2) existing Paloma instant hot water heaters, which are most likely beyond their service lives and replace the existing hot water storage tank.
- 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.
- Replace the one (1) not-operable existing 5,320MBH cast iron boiler, which is approaching the end of its service life, within the next 0-2 years.
- Replace the one (1) operational existing 5,320MBH cast iron boiler, which is approaching the end of its service life, within the next 3-5 years.
- Replace the two (2) dual fuel boiler burners, which are well beyond their service lives, with new more efficient burners within the next 0-2 years.
- Hire a qualified contractor to examine the steam and condensate piping, in service for over 65 years, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Remove the existing unit ventilators and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.
- Provide ventilation for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers.
- Remove the existing heating and ventilation unit which is beyond its service life and provide ventilation for the Gymnasium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the window openings.
- Remove the existing heating and ventilation unit which is beyond its service life and provide ventilation for the Auditorium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.
- Provide ventilation for the administration offices by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.
- Remove the window air conditioning units and install a 220 ton air-cooled chiller with chilled water distribution piping and pumps located in a mechanical room to supply more reliable air conditioning for the building with a much longer service life.
- Replace four (4) roof mounted exhaust fans serving the restrooms and Kitchen which are damaged and well beyond their service lives.
- Replace four (4) exhaust fans, located on the first and second floors, serving the restrooms which are well beyond their service lives.
- Replace seventeen (17) roof mounted gravity ventilators which are beyond their service lives.
- Replace the two (2) existing Kitchen exhaust hoods which are beyond their service lives.
- Install a gas fired make-up air system for the Kitchen exhaust hoods.
- Replace the pneumatic controls 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 11)
- Install new lighting system for 20% of the building.
- Install new receptacles for 50% of the building
- Install new Automated Fire alarm System.

- Install additional pole-mounted lights for the grounds
- Install additional exterior speakers for the grounds

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 4 / Tm 4
Status:	Accepted by SDP	Team:	Tm 4
Site ID:	S621001		

Site Condition Summary

The Table below shows the CI and FCI for each major system shown at the UNIFORMAT classification Level II. Note that Systems with lower FCIs require less investment than systems with higher FCIs.

Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	33.00 %	0.00 %	$0.00
A20 - Basement Construction	33.00 %	0.00 %	$0.00
B10 - Superstructure	33.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	28.38 %	2.85 %	$129,537.29
B30 - Roofing	86.95 %	57.92 %	$1,185,870.38
C10 - Interior Construction	27.46 %	1.12 %	$22,220.10
C20 - Stairs	33.00 %	0.00 %	$0.00
C30 - Interior Finishes	85.05 %	21.32 %	$781,730.20
D10 - Conveying	105.71 %	353.34 %	$1,012,601.25
D20 - Plumbing	93.09 %	79.69 %	$1,309,939.59
D30 - HVAC	103.82 %	105.28 %	$9,427,658.58
D40 - Fire Protection	105.71 %	177.49 %	$1,151,589.86
D50 - Electrical	109.31 %	33.07 %	$1,564,857.51
E10 - Equipment	105.71 %	24.90 %	$319,077.26
E20 - Furnishings	12.50 %	0.00 %	$0.00
G20 - Site Improvements	47.72 %	10.59 %	$200,888.29
G40 - Site Electrical Utilities	106.67 %	45.04 %	$236,683.14
Totals:	**69.67 %**	**40.05 %**	**$17,342,653.45**

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)
B621001;Edmonds, F	80,500	41.36	$1,860,896.54	$5,999,545.73	$3,949,270.12	$2,134,590.91	$2,960,778.72
G621001;Grounds	120,800	18.06	$0.00	$0.00	$165,849.61	$271,721.82	$0.00
Total:		**40.05**	**$1,860,896.54**	**$5,999,545.73**	**$4,115,119.73**	**$2,406,312.73**	**$2,960,778.72**

Deficiencies By Priority

- 1 - Response Time (< 2 yr) - $1,860,896.54
- 2 - Response Time (2-3 yrs) - $5,999,545.73
- 3 - Response Time (3-4 yrs) - $4,115,119.73
- 4 - Response Time (4-5 yrs) - $2,406,312.73
- 5 - Response Time (> 5 yrs) - $2,960,778.72

Budget Estimate Total: $17,342,653.45

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):	80,500
Year Built:	1948
Last Renovation:	
Replacement Value:	$40,875,348
Repair Cost:	$16,905,082.02
Total FCI:	41.36 %
Total RSLI:	70.21 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B621001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S621001		

Condition Summary

The Table below shows the CI and FCI for each major building system shown at the UNIFORMAT classification Level II. Note that Systems with lower FCIs require less investment than systems with higher FCIs.

UNIFORMAT Classification	RSLI %	FCI %	Current Repair Cost
A10 - Foundations	33.00 %	0.00 %	$0.00
A20 - Basement Construction	33.00 %	0.00 %	$0.00
B10 - Superstructure	33.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	28.38 %	2.85 %	$129,537.29
B30 - Roofing	86.95 %	57.92 %	$1,185,870.38
C10 - Interior Construction	27.46 %	1.12 %	$22,220.10
C20 - Stairs	33.00 %	0.00 %	$0.00
C30 - Interior Finishes	85.05 %	21.32 %	$781,730.20
D10 - Conveying	105.71 %	353.34 %	$1,012,601.25
D20 - Plumbing	93.09 %	79.69 %	$1,309,939.59
D30 - HVAC	103.82 %	105.28 %	$9,427,658.58
D40 - Fire Protection	105.71 %	177.49 %	$1,151,589.86
D50 - Electrical	109.31 %	33.07 %	$1,564,857.51
E10 - Equipment	105.71 %	24.90 %	$319,077.26
E20 - Furnishings	12.50 %	0.00 %	$0.00
Totals:	**70.21 %**	**41.36 %**	**$16,905,082.02**

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.	80,500	100	1948	2048		33.00 %	0.00 %	33			$1,481,200
A1030	Slab on Grade	$7.73	S.F.	80,500	100	1948	2048		33.00 %	0.00 %	33			$622,265
A2010	Basement Excavation	$6.55	S.F.	80,500	100	1948	2048		33.00 %	0.00 %	33			$527,275
A2020	Basement Walls	$12.70	S.F.	80,500	100	1948	2048		33.00 %	0.00 %	33			$1,022,350
B1010	Floor Construction	$75.10	S.F.	80,500	100	1948	2048		33.00 %	0.00 %	33			$6,045,550
B1020	Roof Construction	$13.88	S.F.	80,500	100	1948	2048		33.00 %	0.00 %	33			$1,117,340
B2010	Exterior Walls	$36.91	S.F.	80,500	100	1948	2048		33.00 %	0.00 %	33			$2,971,255
B2020	Exterior Windows	$18.01	S.F.	80,500	40	1980	2020		12.50 %	0.00 %	5			$1,449,805
B2030	Exterior Doors	$1.45	S.F.	80,500	25	1980	2005	2042	108.00 %	110.98 %	27		$129,537.29	$116,725
B3010105	Built-Up	$37.76	S.F.	42,300	20	1995	2015	2035	100.00 %	74.24 %	20		$1,185,870.38	$1,597,248
B3010120	Single Ply Membrane	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$38.73	S.F.	11,500	25	2000	2025		40.00 %	0.00 %	10			$445,395
B3020	Roof Openings	$0.06	S.F.	80,500	20	1995	2015	2035	100.00 %	0.00 %	20			$4,830
C1010	Partitions	$17.91	S.F.	80,500	100	1948	2048		33.00 %	0.00 %	33			$1,441,755
C1020	Interior Doors	$3.51	S.F.	80,500	40	1980	2020		12.50 %	2.11 %	5		$5,965.35	$282,555
C1030	Fittings	$3.12	S.F.	80,500	40	1980	2020		12.50 %	6.47 %	5		$16,254.75	$251,160
C2010	Stair Construction	$1.41	S.F.	80,500	100	1948	2048		33.00 %	0.00 %	33			$113,505

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3010230	Paint & Covering	$13.21	S.F.	80,500	10	2010	2020		50.00 %	9.55 %	5		$101,608.16	$1,063,405
C3010231	Vinyl Wall Covering	$0.97	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.		30				0.00 %	0.00 %				$0
C3020411	Carpet	$7.30	S.F.	1,500	10	2000	2010	2037	220.00 %	0.00 %	22			$10,950
C3020412	Terrazzo & Tile	$75.52	S.F.	2,000	50	1948	1998	2098	166.00 %	0.00 %	83			$151,040
C3020413	Vinyl Flooring	$9.68	S.F.	67,950	20	1948	1968	2037	110.00 %	96.84 %	22		$637,000.06	$657,756
C3020414	Wood Flooring	$22.27	S.F.	4,050	25	1948	1973	2042	108.00 %	47.81 %	27		$43,121.98	$90,194
C3020415	Concrete Floor Finishes	$0.97	S.F.	5,000	50	1948	1998	2067	104.00 %	0.00 %	52			$4,850
C3030	Ceiling Finishes	$20.97	S.F.	80,500	25	1948	1973	2037	88.00 %	0.00 %	22			$1,688,085
D1010	Elevators and Lifts	$3.56	S.F.	80,500	35	1948	1983	2052	105.71 %	353.34 %	37		$1,012,601.25	$286,580
D2010	Plumbing Fixtures	$13.52	S.F.	80,500	35	2010	2045		85.71 %	8.65 %	30		$94,157.37	$1,088,360
D2020	Domestic Water Distribution	$1.68	S.F.	80,500	25	1948	1973	2042	108.00 %	343.02 %	27		$463,897.62	$135,240
D2030	Sanitary Waste	$2.90	S.F.	80,500	25	1948	1973	2042	108.00 %	169.16 %	27		$394,912.90	$233,450
D2040	Rain Water Drainage	$2.32	S.F.	80,500	30	1948	1978	2047	106.67 %	191.14 %	32		$356,971.70	$186,760
D3020	Heat Generating Systems	$18.67	S.F.	80,500	35	1988	2023	2052	105.71 %	80.87 %	37		$1,215,409.31	$1,502,935
D3030	Cooling Generating Systems	$24.48	S.F.	80,500	20			2037	110.00 %	62.43 %	22		$1,230,284.30	$1,970,640
D3040	Distribution Systems	$42.99	S.F.	80,500	25	1948	1973	2042	108.00 %	151.85 %	27		$5,255,074.13	$3,460,695
D3050	Terminal & Package Units	$11.60	S.F.	80,500	20	1995	2015	2028	65.00 %	0.00 %	13			$933,800
D3060	Controls & Instrumentation	$13.50	S.F.	80,500	20	1995	2015	2037	110.00 %	158.90 %	22		$1,726,890.84	$1,086,750
D4010	Sprinklers	$7.05	S.F.	80,500	35			2052	105.71 %	202.91 %	37		$1,151,589.86	$567,525
D4020	Standpipes	$1.01	S.F.	80,500	35			2052	105.71 %	0.00 %	37			$81,305
D5010	Electrical Service/Distribution	$9.70	S.F.	80,500	30	1948	1978	2047	106.67 %	101.58 %	32		$793,181.20	$780,850
D5020	Lighting and Branch Wiring	$34.68	S.F.	80,500	20	1948	1968	2037	110.00 %	19.09 %	22		$532,924.99	$2,791,740
D5030	Communications and Security	$12.99	S.F.	80,500	15	1948	1963	2032	113.33 %	22.83 %	17		$238,751.32	$1,045,695
D5090	Other Electrical Systems	$1.41	S.F.	80,500	30	1948	1978	2037	73.33 %	0.00 %	22			$113,505
E1020	Institutional Equipment	$4.82	S.F.	80,500	35	1948	1983	2052	105.71 %	42.84 %	37		$166,233.03	$388,010
E1090	Other Equipment	$11.10	S.F.	80,500	35	1948	1983	2052	105.71 %	17.11 %	37		$152,844.23	$893,550
E2010	Fixed Furnishings	$2.13	S.F.	80,500	40	1948	1988	2020	12.50 %	0.00 %	5			$171,465
								Total	**70.21 %**	**41.36 %**			**$16,905,082.02**	**$40,875,348**

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:	**$16,905,082**	**$0**	**$0**	**$0**	**$0**	**$4,104,098**	**$0**	**$0**	**$0**	**$0**	**$658,432**	**$21,667,612**
*** 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	$0	$0	$0	$0	$0	$1,848,794	$0	$0	$0	$0	$0	**$1,848,794**
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	$1,185,870	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,185,870**
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	$658,432	**$658,432**
B3020 - Roof Openings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C - Interiors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C10 - Interior Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1010 - Partitions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

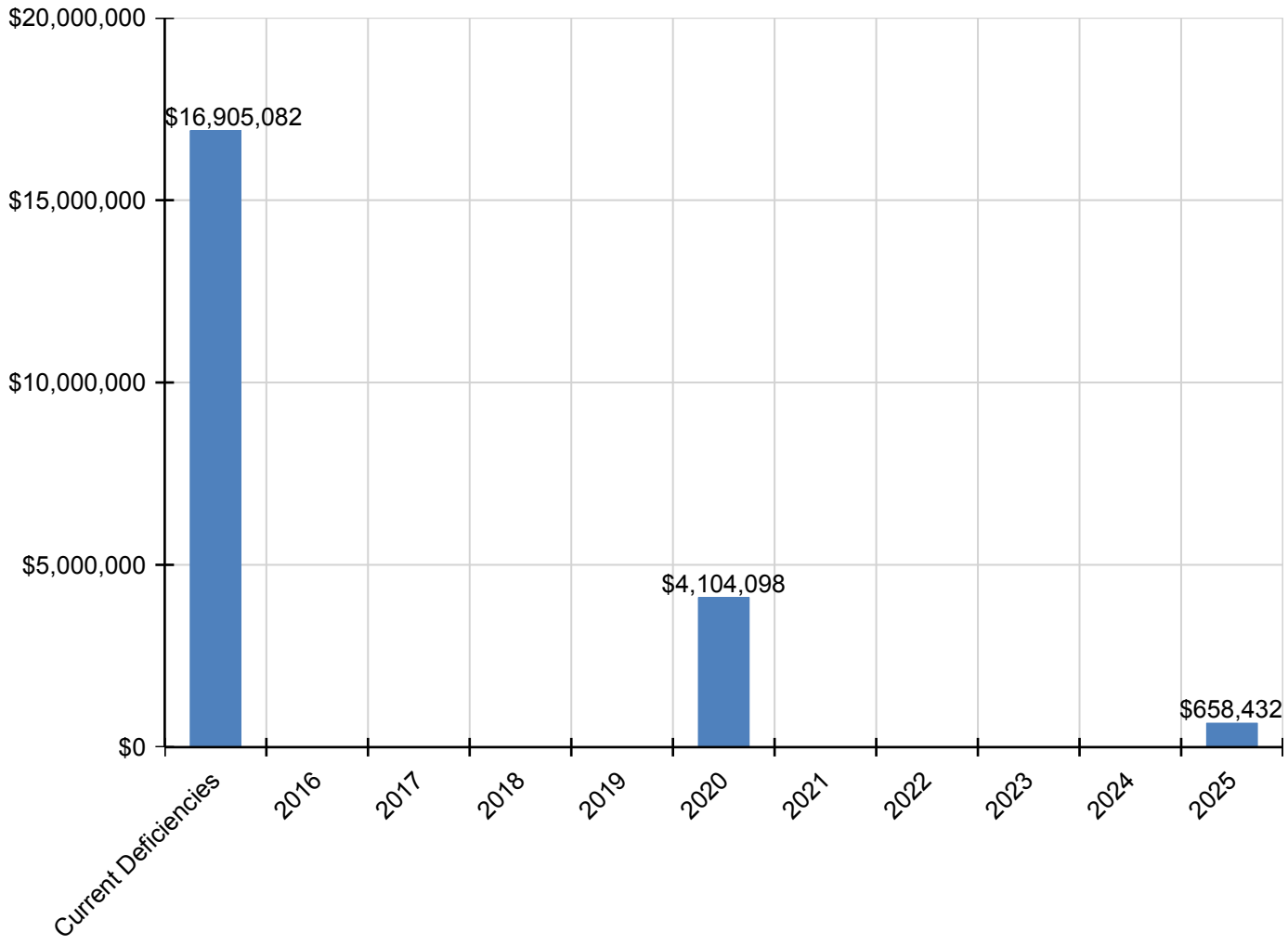
C1020 - Interior Doors	$5,965	$0	$0	$0	$0	$360,315	$0	$0	$0	$0	$0	**$366,280**
C1030 - Fittings	$16,255	$0	$0	$0	$0	$320,280	$0	$0	$0	$0	$0	**$336,534**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$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	$101,608	$0	$0	$0	$0	$1,356,056	$0	$0	$0	$0	$0	**$1,457,664**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$637,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$637,000**
C3020414 - Wood Flooring	$43,122	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$43,122**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D10 - Conveying	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D1010 - Elevators and Lifts	$1,012,601	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,012,601**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$94,157	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$94,157**
D2020 - Domestic Water Distribution	$463,898	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$463,898**
D2030 - Sanitary Waste	$394,913	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$394,913**
D2040 - Rain Water Drainage	$356,972	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$356,972**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$1,215,409	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,215,409**
D3030 - Cooling Generating Systems	$1,230,284	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,230,284**
D3040 - Distribution Systems	$5,255,074	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$5,255,074**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,726,891	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,726,891**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$1,151,590	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,151,590**
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	$793,181	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$793,181**
D5020 - Lighting and Branch Wiring	$532,925	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$532,925**
D5030 - Communications and Security	$238,751	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$238,751**
D5090 - Other Electrical Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
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	$166,233	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$166,233**
E1090 - Other Equipment	$152,844	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$152,844**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$0	$0	$0	$0	$0	$218,653	$0	$0	$0	$0	$0	**$218,653**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

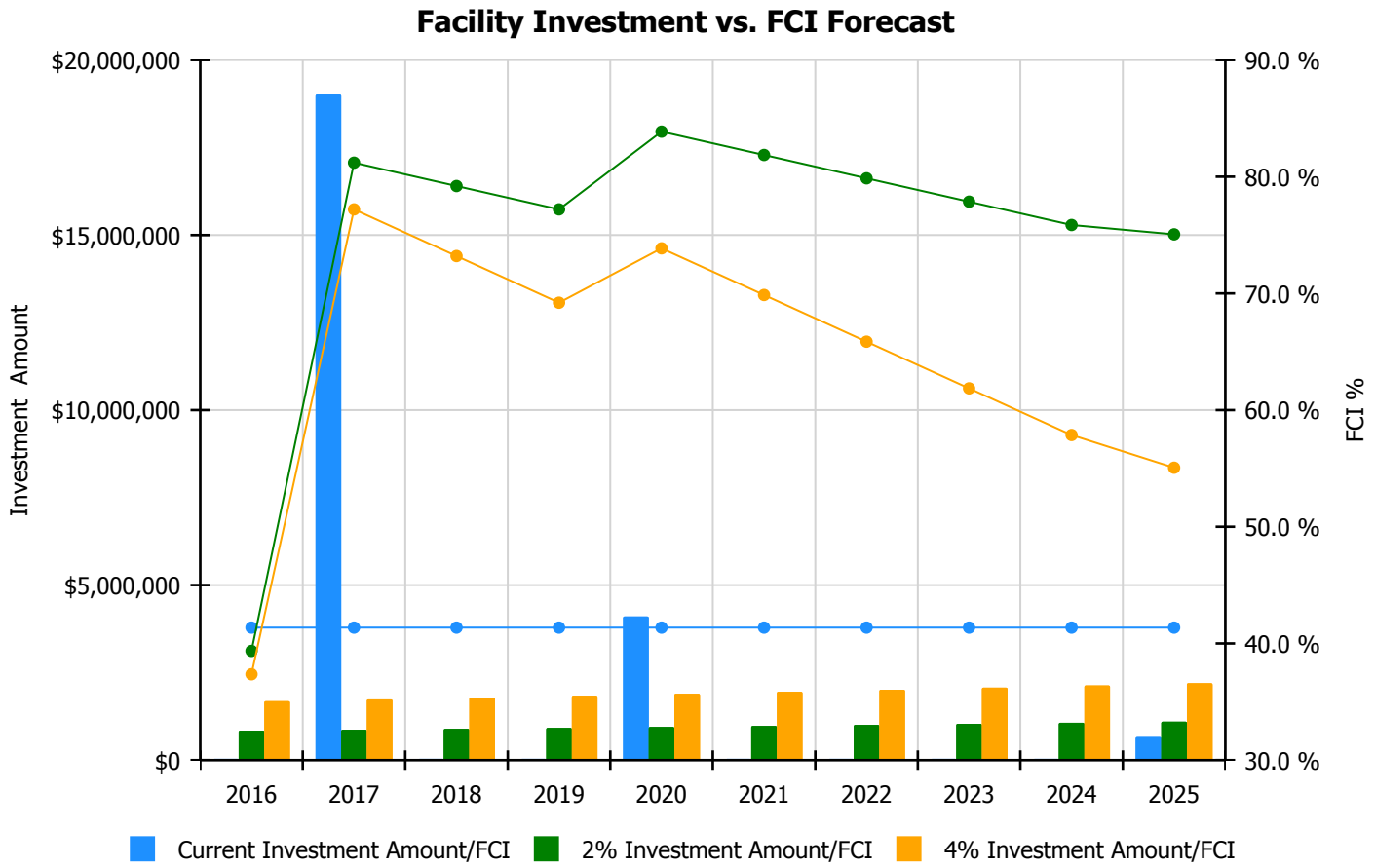
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

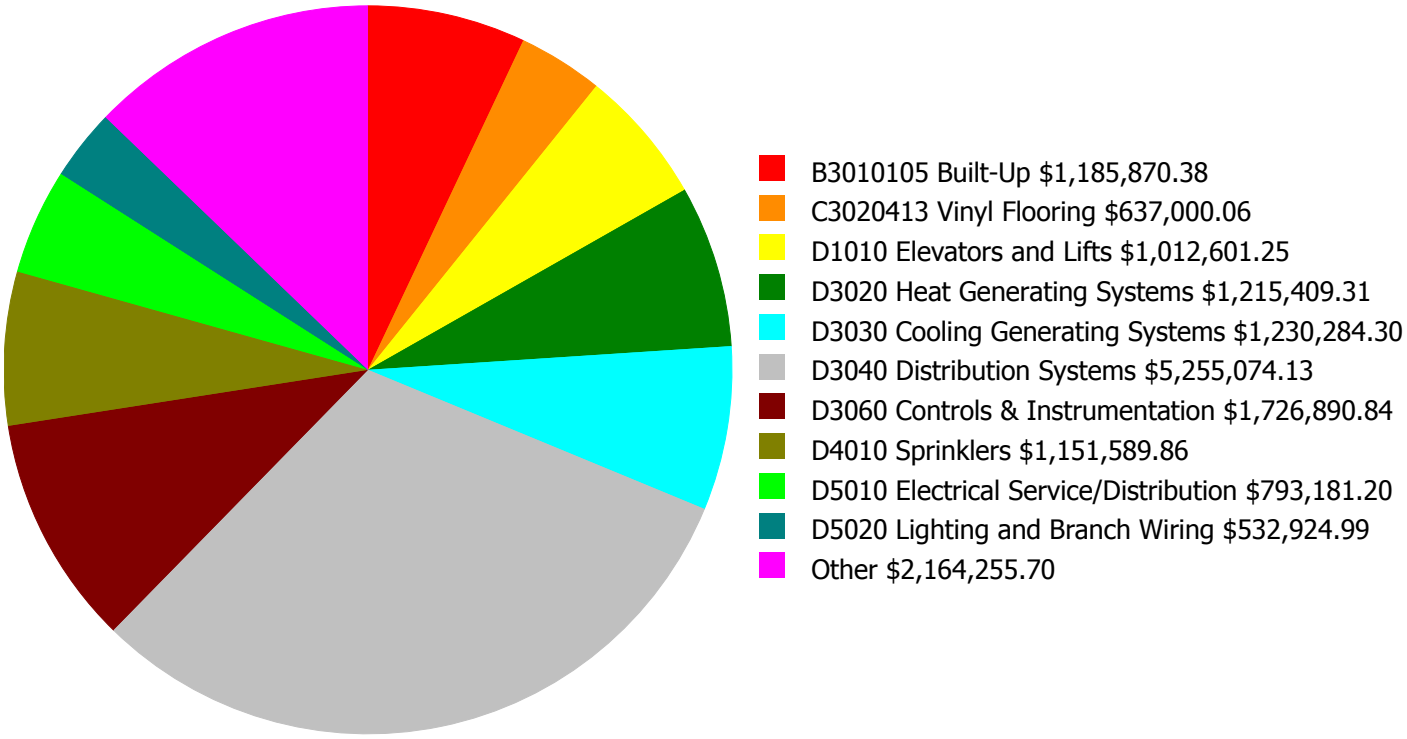
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 41.36%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$842,032.00	39.36 %	$1,684,064.00	37.36 %
2017	$19,012,838	$867,293.00	81.20 %	$1,734,586.00	77.20 %
2018	$0	$893,312.00	79.20 %	$1,786,624.00	73.20 %
2019	$0	$920,111.00	77.20 %	$1,840,223.00	69.20 %
2020	$4,104,098	$947,715.00	83.86 %	$1,895,429.00	73.86 %
2021	$0	$976,146.00	81.86 %	$1,952,292.00	69.86 %
2022	$0	$1,005,430.00	79.86 %	$2,010,861.00	65.86 %
2023	$0	$1,035,593.00	77.86 %	$2,071,187.00	61.86 %
2024	$0	$1,066,661.00	75.86 %	$2,133,322.00	57.86 %
2025	$658,432	$1,098,661.00	75.06 %	$2,197,322.00	55.06 %
Total:	**$23,775,367**	**$9,652,954.00**		**$19,305,910.00**	

Deficiency Summary by System

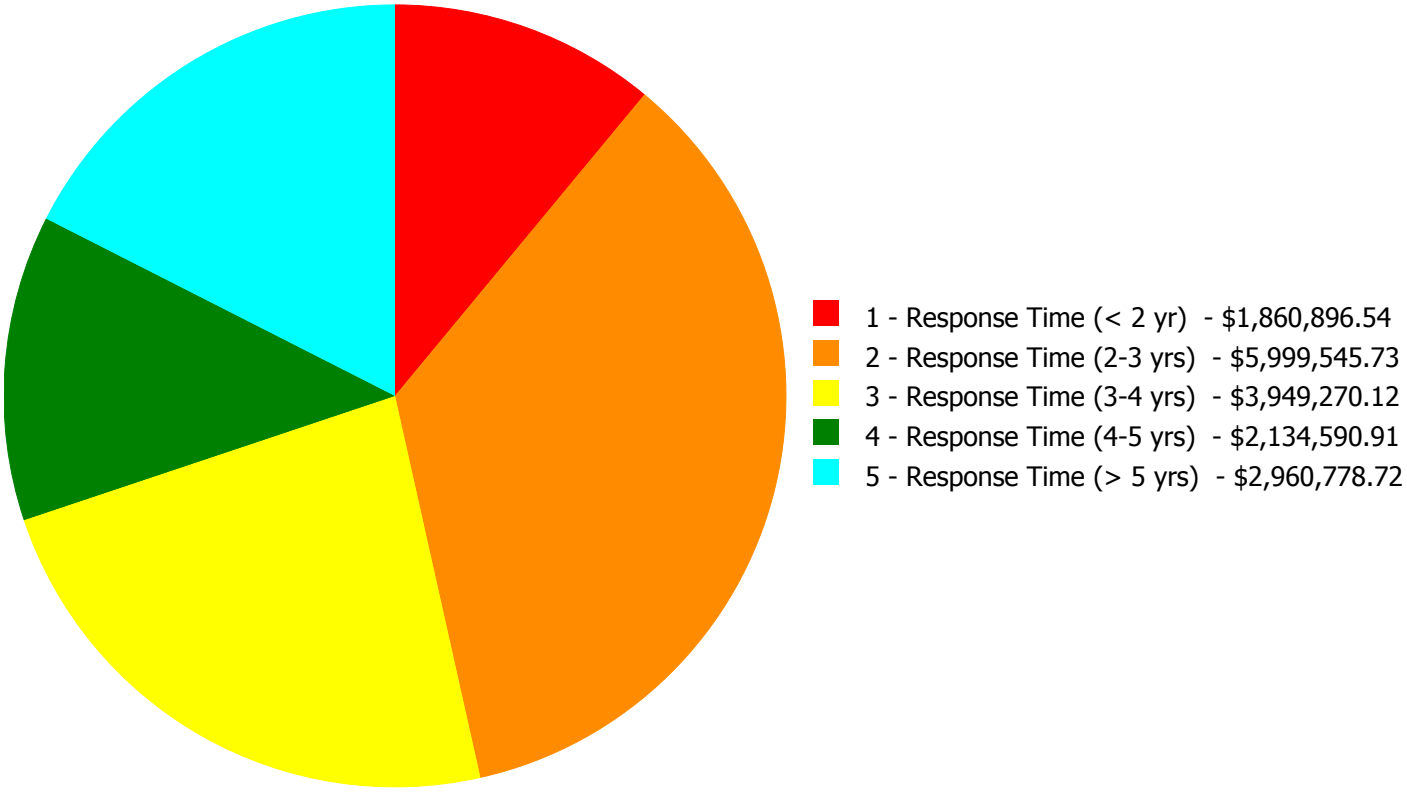
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $16,905,082.02

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: $16,905,082.02

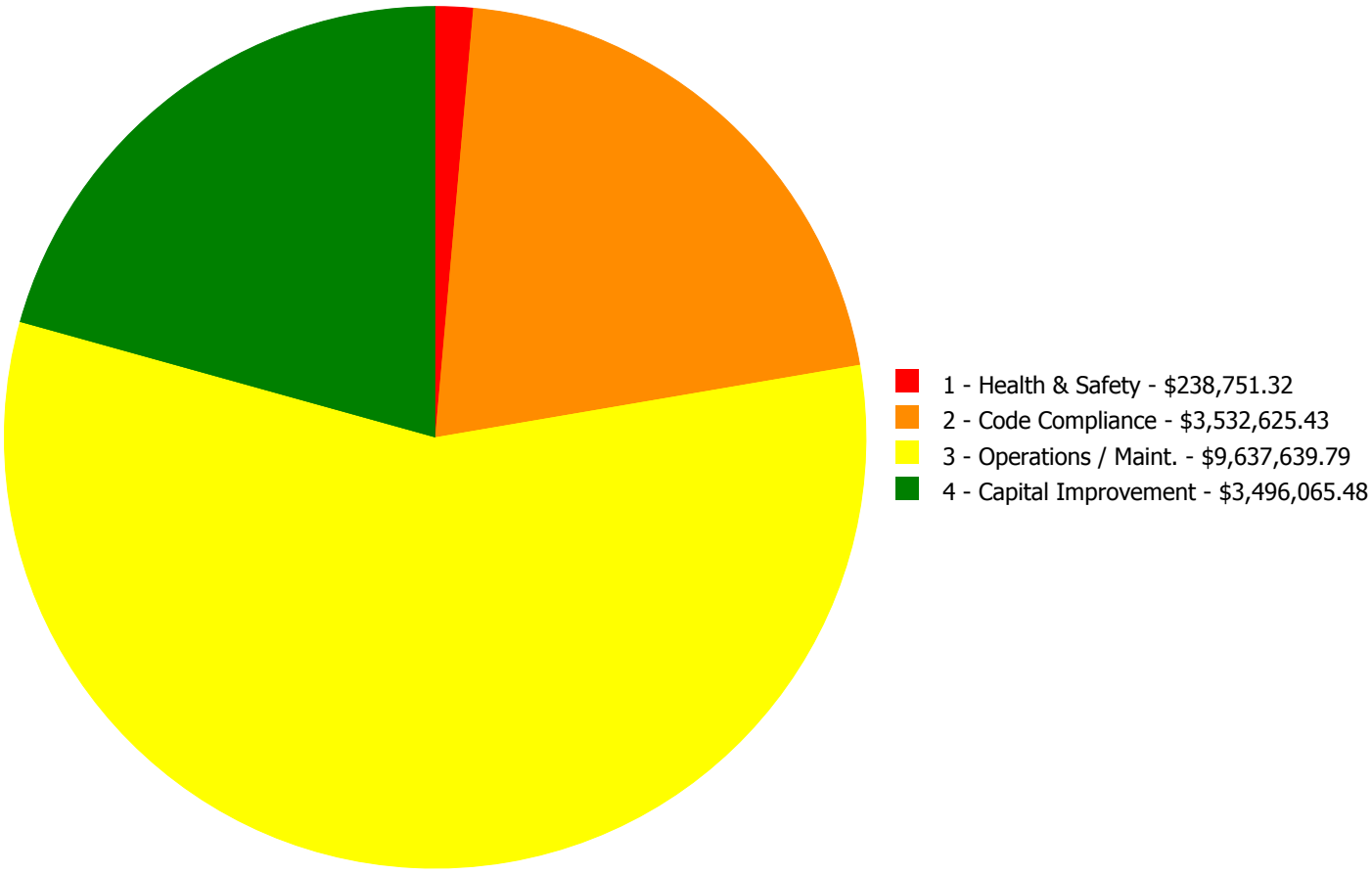
Deficiency By Priority Investment Table

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
B2030	Exterior Doors	$0.00	$0.00	$0.00	$129,537.29	$0.00	$129,537.29
B3010105	Built-Up	$0.00	$1,185,870.38	$0.00	$0.00	$0.00	$1,185,870.38
C1020	Interior Doors	$0.00	$0.00	$0.00	$5,965.35	$0.00	$5,965.35
C1030	Fittings	$0.00	$0.00	$0.00	$16,254.75	$0.00	$16,254.75
C3010230	Paint & Covering	$0.00	$0.00	$0.00	$101,608.16	$0.00	$101,608.16
C3020413	Vinyl Flooring	$0.00	$0.00	$0.00	$637,000.06	$0.00	$637,000.06
C3020414	Wood Flooring	$0.00	$0.00	$0.00	$43,121.98	$0.00	$43,121.98
D1010	Elevators and Lifts	$0.00	$1,012,601.25	$0.00	$0.00	$0.00	$1,012,601.25
D2010	Plumbing Fixtures	$0.00	$0.00	$94,157.37	$0.00	$0.00	$94,157.37
D2020	Domestic Water Distribution	$0.00	$0.00	$55,975.50	$407,922.12	$0.00	$463,897.62
D2030	Sanitary Waste	$0.00	$0.00	$394,912.90	$0.00	$0.00	$394,912.90
D2040	Rain Water Drainage	$0.00	$0.00	$356,971.70	$0.00	$0.00	$356,971.70
D3020	Heat Generating Systems	$709,306.68	$0.00	$506,102.63	$0.00	$0.00	$1,215,409.31
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$1,230,284.30	$1,230,284.30
D3040	Distribution Systems	$0.00	$2,074,183.26	$1,450,396.45	$0.00	$1,730,494.42	$5,255,074.13
D3060	Controls & Instrumentation	$0.00	$1,726,890.84	$0.00	$0.00	$0.00	$1,726,890.84
D4010	Sprinklers	$1,151,589.86	$0.00	$0.00	$0.00	$0.00	$1,151,589.86
D5010	Electrical Service/Distribution	$0.00	$0.00	$0.00	$793,181.20	$0.00	$793,181.20
D5020	Lighting and Branch Wiring	$0.00	$0.00	$532,924.99	$0.00	$0.00	$532,924.99
D5030	Communications and Security	$0.00	$0.00	$238,751.32	$0.00	$0.00	$238,751.32
E1020	Institutional Equipment	$0.00	$0.00	$166,233.03	$0.00	$0.00	$166,233.03
E1090	Other Equipment	$0.00	$0.00	$152,844.23	$0.00	$0.00	$152,844.23
	Total:	$1,860,896.54	$5,999,545.73	$3,949,270.12	$2,134,590.91	$2,960,778.72	$16,905,082.02

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: $16,905,082.02

Deficiency Details by Priority

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

Priority 1 - Response Time (< 2 yr):

System: D3020 - Heat Generating Systems

Location: Boiler room
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Replace boiler, cast iron sectional (150 HP)
Qty: 1.00
Unit of Measure: Ea.
Estimate: $506,102.63
Assessor Name: System
Date Created: 01/14/2016

Notes: Replace the one (1) not-operable existing 5,320MBH cast iron boiler, which is approaching the end of its service life, within the next 0-2 years.

System: D3020 - Heat Generating Systems

Location: Boiler room
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Replace power burner, gas/oil (150 HP)
Qty: 2.00
Unit of Measure: Ea.
Estimate: $203,204.05
Assessor Name: System
Date Created: 01/14/2016

Notes: Replace the two (2) 7071MBH dual fuel boiler burners, which are well beyond their service lives, with new more efficient burners within the next 0-2 years.

System: D4010 - Sprinklers

Location: Throughout building

Distress: Life Safety / NFPA / PFD

Category: 2 - Code Compliance

Priority: 1 - Response Time (< 2 yr)

Correction: Install a fire protection sprinkler system

Qty: 80,500.00

Unit of Measure: S.F.

Estimate: $1,151,589.86

Assessor Name: System

Date Created: 01/15/2016

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: B3010105 - Built-Up

Location: Main building roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Built Up Roof

Qty: 35,000.00

Unit of Measure: S.F.

Estimate: $1,185,870.38

Assessor Name: System

Date Created: 02/10/2016

Notes: Install all new roofing system including insulation; tear-down existing roofing; install flashing, counter flashing and reglets

System: D1010 - Elevators and Lifts

This deficiency has no image.

Location: Near main lobby area

Distress: Accessibility

Category: 2 - Code Compliance

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $1,012,601.25

Assessor Name: System

Date Created: 02/12/2016

Notes: Provide ADA compliant elevator serving basement and all floors (exterior)

System: D3040 - Distribution Systems

Location: Classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 38.00

Unit of Measure: Ea.

Estimate: $1,895,389.56

Assessor Name: System

Date Created: 01/14/2016

Notes: Remove the existing unit ventilators and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.

System: D3040 - Distribution Systems

Location: Roof

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace utility set exhaust fan (5 HP)

Qty: 4.00

Unit of Measure: Ea.

Estimate: $146,047.81

Assessor Name: System

Date Created: 01/15/2016

Notes: Replace four (4) roof mounted exhaust fans serving the restrooms and Kitchen which are damaged and well beyond their service lives.

System: D3040 - Distribution Systems

Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace rooftop gravity ventilator units - select the proper type and size

Qty: 17.00

Unit of Measure: Ea.

Estimate: $32,745.89

Assessor Name: System

Date Created: 01/15/2016

Notes: Replace seventeen (17) roof mounted gravity ventilators which are beyond their service lives.

System: D3060 - Controls & Instrumentation

Location: Throughout building

Distress: Failing

Category: 4 - Capital Improvement

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

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 80,500.00

Unit of Measure: S.F.

Estimate: $1,726,890.84

Assessor Name: System

Date Created: 01/15/2016

Notes: Replace the pneumatic controls 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.

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

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: 6.00

Unit of Measure: Ea.

Estimate: $94,157.37

Assessor Name: System

Date Created: 01/14/2016

Notes: Replace six (6) porcelain wall hung drinking fountains in the corridors. These units are beyond their service life and most are NOT accessible type.

System: D2020 - Domestic Water Distribution

Location: Boiler room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace instantaneous water heater

Qty: 2.00

Unit of Measure: Ea.

Estimate: $55,975.50

Assessor Name: System

Date Created: 01/14/2016

Notes: Replace the two (2) existing Paloma instant hot water heaters, which are most likely beyond their service lives.

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: 80,500.00

Unit of Measure: S.F.

Estimate: $394,912.90

Assessor Name: System

Date Created: 01/14/2016

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: 80,500.00

Unit of Measure: S.F.

Estimate: $356,971.70

Assessor Name: System

Date Created: 01/14/2016

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: D3020 - Heat Generating Systems

Location: Boiler room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $506,102.63

Assessor Name: System

Date Created: 01/14/2016

Notes: Replace the one (1) operational existing 5,320MBH cast iron boiler, which is approaching the end of its service life, within the next 3-5 years.

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 80,500.00

Unit of Measure: S.F.

Estimate: $761,560.05

Assessor Name: System

Date Created: 01/14/2016

Notes: Hire a qualified contractor to examine the steam and condensate piping, in service for over 65 years, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.

System: D3040 - Distribution Systems

Location: Auditorium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 300.00

Unit of Measure: Seat

Estimate: $499,640.04

Assessor Name: System

Date Created: 01/15/2016

Notes: Remove the existing heating and ventilation unit which is beyond its service life and provide ventilation for the Auditorium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.

System: D3040 - Distribution Systems

Location: Mechanical rooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace utility set exhaust fan (5 HP)

Qty: 4.00

Unit of Measure: Ea.

Estimate: $189,196.36

Assessor Name: System

Date Created: 01/15/2016

Notes: Replace four (4) exhaust fans, located on the first and second floors, serving the restrooms which are well beyond their service lives.

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 Lighting Fixtures (SF)
Qty: 0.00
Unit of Measure: S.F.
Estimate: $364,066.84
Assessor Name: System
Date Created: 02/09/2016

Notes: Install new receptacles for 50% of the building
80,500 SF x 50% = 40,250 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 Lighting Fixtures (SF)
Qty: 0.00
Unit of Measure: S.F.
Estimate: $168,858.15
Assessor Name: System
Date Created: 02/09/2016

Notes: Install new lighting system for 20% of the building.
80,500 SF x 20% = 16,100 SF

System: D5030 - Communications and Security

Location: throughout the building

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Replace fire alarm system

Qty: 1.00

Unit of Measure: S.F.

Estimate: $238,751.32

Assessor Name: System

Date Created: 02/09/2016

Notes: Install new Automated Fire alarm System.

System: E1020 - Institutional Equipment

Location: Offices, library; classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace base cabinets and countertops

Qty: 200.00

Unit of Measure: L.F.

Estimate: $166,233.03

Assessor Name: System

Date Created: 02/15/2016

Notes: Upgrade casework in offices, library and classrooms

System: E1090 - Other Equipment

Location: Kitchen

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace kitchen exhaust hood (10 ft)

Qty: 2.00

Unit of Measure: Ea.

Estimate: $152,844.23

Assessor Name: System

Date Created: 01/15/2016

Notes: Replace the two (2) existing Kitchen exhaust hoods which are beyond their service lives.

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

System: B2030 - Exterior Doors

Location: All exterior elevations

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 16.00

Unit of Measure: Ea.

Estimate: $129,537.29

Assessor Name: System

Date Created: 02/10/2016

Notes: Replace rusted and damaged exterior doors

System: C1020 - Interior Doors

Location: Classroom doors

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Provide security hardware for classroom and office doors

Qty: 26.00

Unit of Measure: Ea.

Estimate: $5,965.35

Assessor Name: System

Date Created: 02/10/2016

Notes: Provide ADA and security compliant hardware on interior doors

System: C1030 - Fittings

Location: Main building corridors

Distress: Inadequate

Category: 3 - Operations / Maint.

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

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

Qty: 60.00

Unit of Measure: Ea.

Estimate: $16,254.75

Assessor Name: System

Date Created: 02/10/2016

Notes: Install new signage throughout

System: C3010230 - Paint & Covering

Location: Main building corridor and classroom walls

Distress: Appearance

Category: 3 - Operations / Maint.

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

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

Qty: 15,000.00

Unit of Measure: S.F.

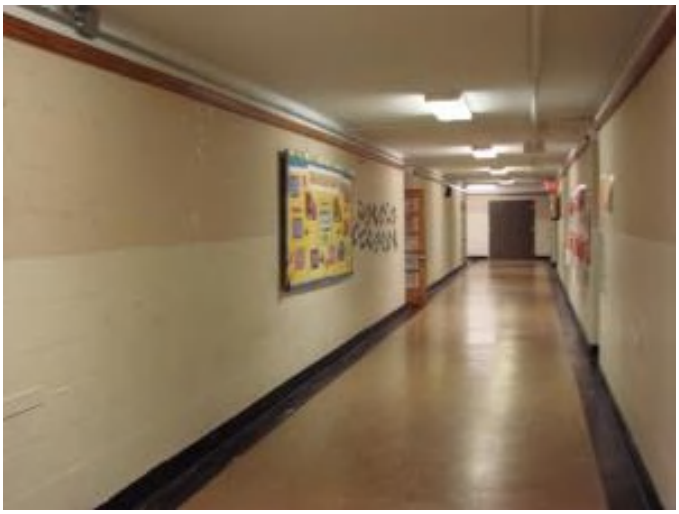
Estimate: $101,608.16

Assessor Name: System

Date Created: 02/10/2016

Notes: Repair (15%) and repaint all walls

System: C3020413 - Vinyl Flooring



Location: Main building corridor and class rooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 42,000.00

Unit of Measure: S.F.

Estimate: $637,000.06

Assessor Name: System

Date Created: 02/10/2016

Notes: Replace all VAT tile

System: C3020414 - Wood Flooring

Location: Gym

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace partial area of wood flooring and refinish entire floor - set replacement area

Qty: 4,500.00

Unit of Measure: S.F.

Estimate: $43,121.98

Assessor Name: System

Date Created: 02/10/2016

Notes: Repair (10%) refinish hardwood flooring (50%)

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: 80,500.00

Unit of Measure: S.F.

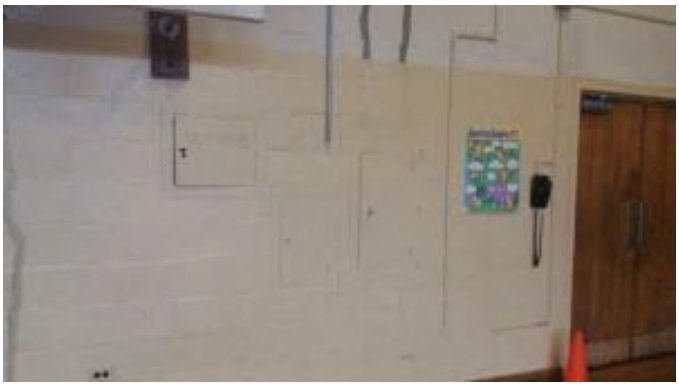
Estimate: $407,922.12

Assessor Name: System

Date Created: 01/14/2016

Notes: Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for an unknown amount of time, and replace any damaged piping.

System: D5010 - Electrical Service/Distribution



Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Panelboard - 225A

Qty: 0.00

Unit of Measure: Ea.

Estimate: $456,962.76

Assessor Name: System

Date Created: 02/09/2016

Notes: Install new 120V lighting and receptacle panels throughout the building (total of 11)

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: $336,218.44

Assessor Name: System

Date Created: 02/09/2016

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

Priority 5 - Response Time (> 5 yrs):

System: D3030 - Cooling Generating Systems

Location: Throughout building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 80,500.00

Unit of Measure: S.F.

Estimate: $1,230,284.30

Assessor Name: System

Date Created: 01/15/2016

Notes: Remove the window air conditioning units and install a 220 ton air-cooled chiller with chilled water distribution piping and pumps located in a mechanical room to supply more reliable air conditioning for the building with a much longer service life.

System: D3040 - Distribution Systems

Location: Cafeteria

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install HVAC unit for Cafeteria (850 students).

Qty: 755.00

Unit of Measure: Pr.

Estimate: $386,341.43

Assessor Name: System

Date Created: 01/14/2016

Notes: Provide ventilation for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers.

System: D3040 - Distribution Systems

Location: Gymnasium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 6,000.00

Unit of Measure: Ea.

Estimate: $362,060.10

Assessor Name: System

Date Created: 01/15/2016

Notes: Remove the existing heating and ventilation unit which is beyond its service life and provide ventilation for the Gymnasium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the window openings.

System: D3040 - Distribution Systems

Location: Gymnasium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 6,000.00

Unit of Measure: Ea.

Estimate: $345,909.69

Assessor Name: System

Date Created: 01/14/2016

Notes: Remove the existing heating and ventilation unit which is beyond its service life and provide ventilation for the Gymnasium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the window openings.

System: D3040 - Distribution Systems

Location: Administration offices

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install HVAC unit for Administration (2000 students).

Qty: 755.00

Unit of Measure: Pr.

Estimate: $326,781.86

Assessor Name: System

Date Created: 01/15/2016

Notes: Provide ventilation for the administration offices by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.

System: D3040 - Distribution Systems

This deficiency has no image.

Location: Kitchen

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install GF makeup air unit for kitchen exhaust hood (single 10 ft hood).

Qty: 1.00

Unit of Measure: Ea.

Estimate: $309,401.34

Assessor Name: System

Date Created: 01/15/2016

Notes: Install a gas fired make-up air system for the Kitchen exhaust hoods.

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, steam, gross output, 5230 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Boiler Room	Weil-McLain	11-1994 SW			35	1988	2023	$122,870.00	$270,314.00
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, steam, gross output, 5230 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Boiler Room	Weil-McLain	11-1994 SW			35	1988	2023	$122,870.00	$270,314.00
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	1948	1978	$42,600.60	$46,860.66
D5010 Electrical Service/Distribution	Panelboards, 3 pole 4 wire, main circuit breaker, 120/208 V, 400 amp	4.00	Ea.	electrical room					30	1948	1978	$4,626.45	$20,356.38
D5010 Electrical Service/Distribution	Switchboards, distribution section, aluminum bus bars, 4 W, 120/208 or 277/480 V, 1200 amp, excl breakers	1.00	Ea.	electrical room					30	1948	1978	$6,551.55	$7,206.71
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	2011	2041	$50,797.80	$55,877.58
												Total:	**$670,929.33**

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):	120,800
Year Built:	1948
Last Renovation:	
Replacement Value:	$2,422,535
Repair Cost:	$437,571.43
Total FCI:	18.06 %
Total RSLI:	60.51 %

Description:

Attributes:

General Attributes:

Bldg ID:	S621001	Site ID:	S621001

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	47.72 %	10.59 %	$200,888.29
G40 - Site Electrical Utilities	106.67 %	45.04 %	$236,683.14
Totals:	**60.51 %**	**18.06 %**	**$437,571.43**

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.	12,500	30	1948	1978	2047	106.67 %	161.17 %	32		$154,121.81	$95,625
G2030	Pedestrian Paving	$11.52	S.F.	105,700	40	1948	1988	2020	12.50 %	0.00 %	5			$1,217,664
G2040	Site Development	$4.36	S.F.	120,800	25	1948	1973	2045	120.00 %	8.88 %	30		$46,766.48	$526,688
G2050	Landscaping & Irrigation	$3.78	S.F.	15,100	15	1948	1963	2020	33.33 %	0.00 %	5			$57,078
G4020	Site Lighting	$3.58	S.F.	120,800	30	1948	1978	2047	106.67 %	38.35 %	32		$165,849.61	$432,464
G4030	Site Communications & Security	$0.77	S.F.	120,800	30	1948	1978	2047	106.67 %	76.15 %	32		$70,833.53	$93,016
								Total	**60.51 %**	**18.06 %**			**$437,571.43**	**$2,422,535**

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.

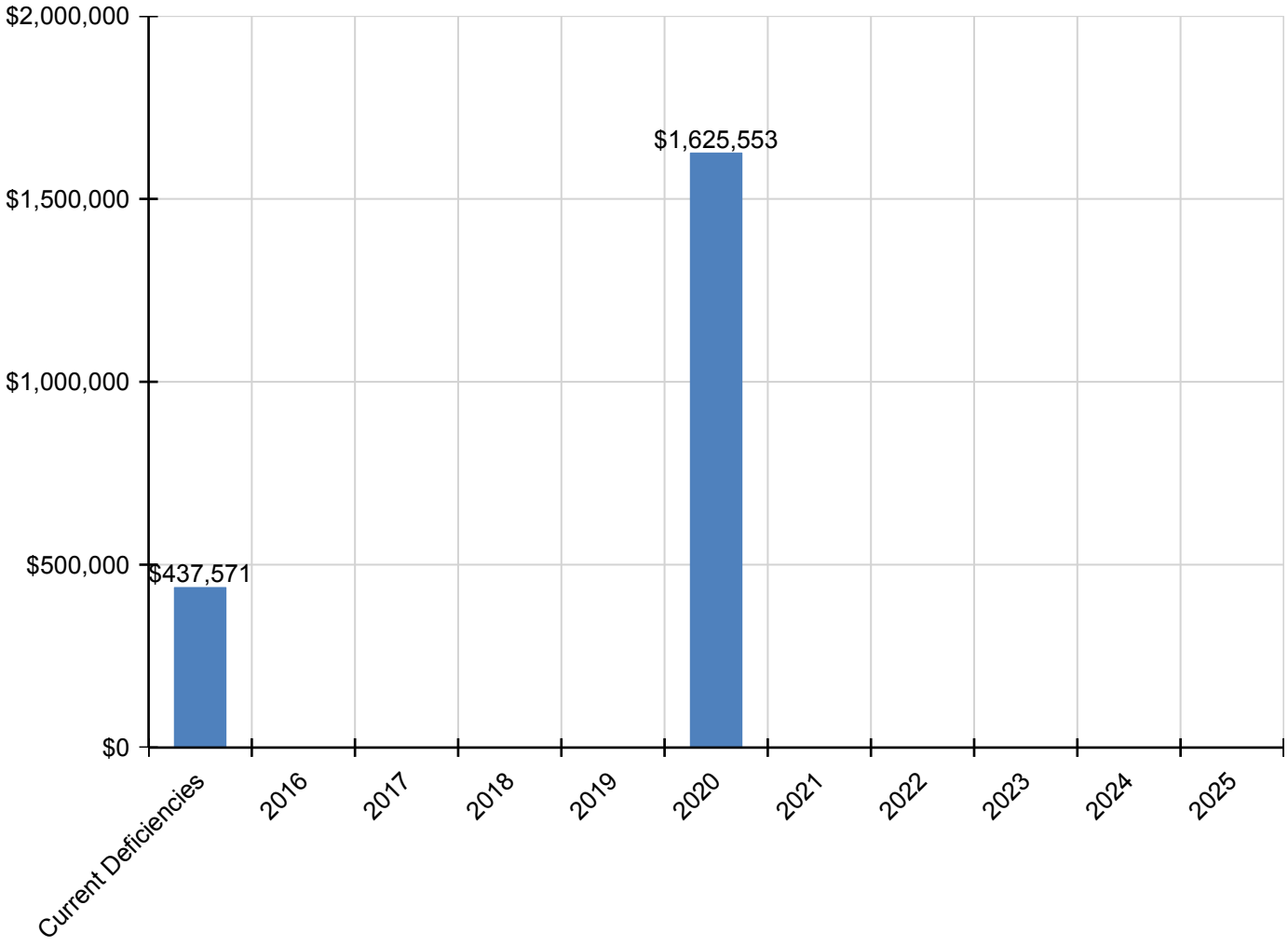
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$437,571**	**$0**	**$0**	**$0**	**$0**	**$1,625,553**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,063,124**
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	$154,122	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$154,122**
G2030 - Pedestrian Paving	$0	$0	$0	$0	$0	$1,552,766	$0	$0	$0	$0	$0	**$1,552,766**
G2040 - Site Development	$46,766	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$46,766**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$72,786	$0	$0	$0	$0	$0	**$72,786**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$165,850	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$165,850**
G4030 - Site Communications & Security	$70,834	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$70,834**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

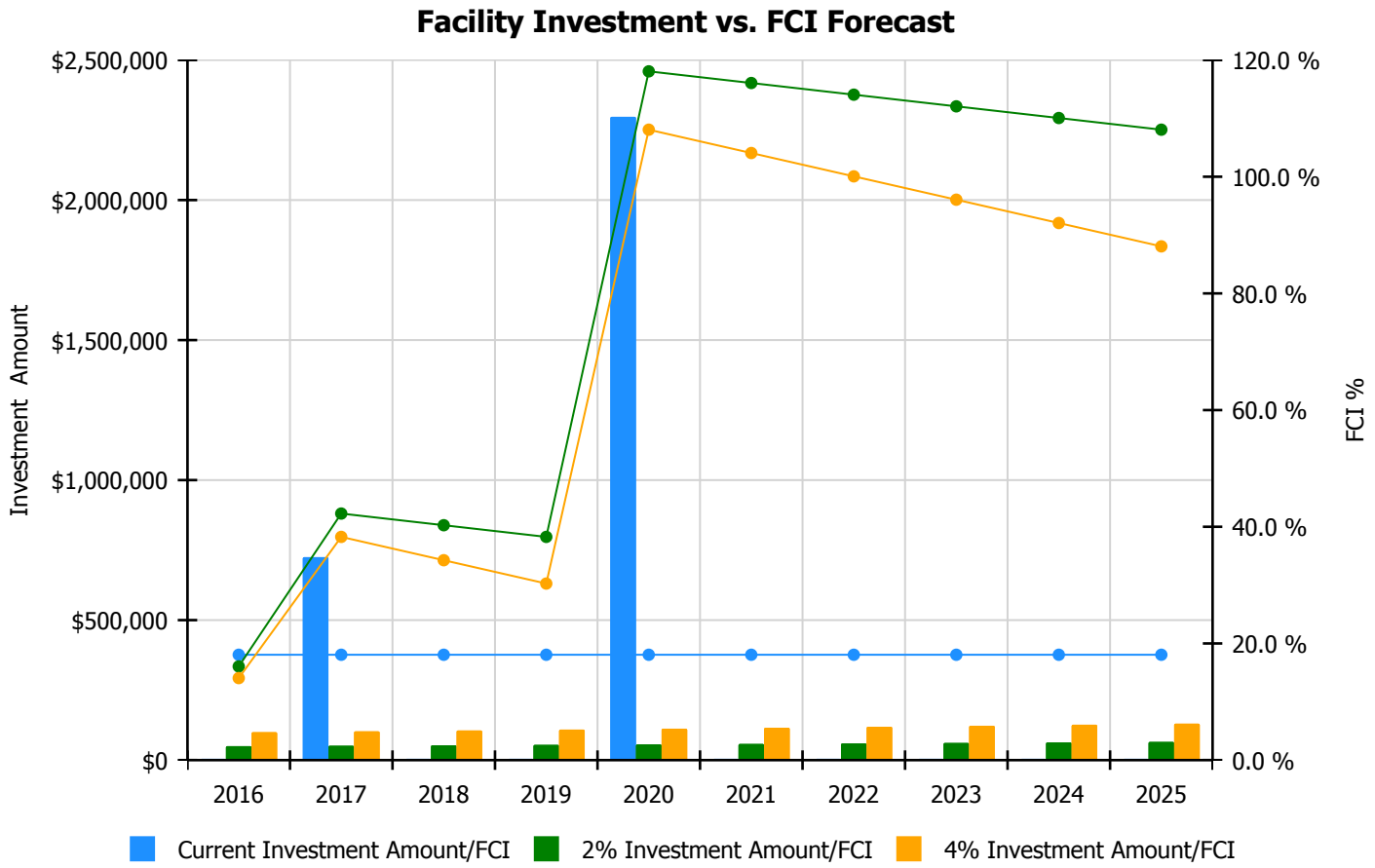
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

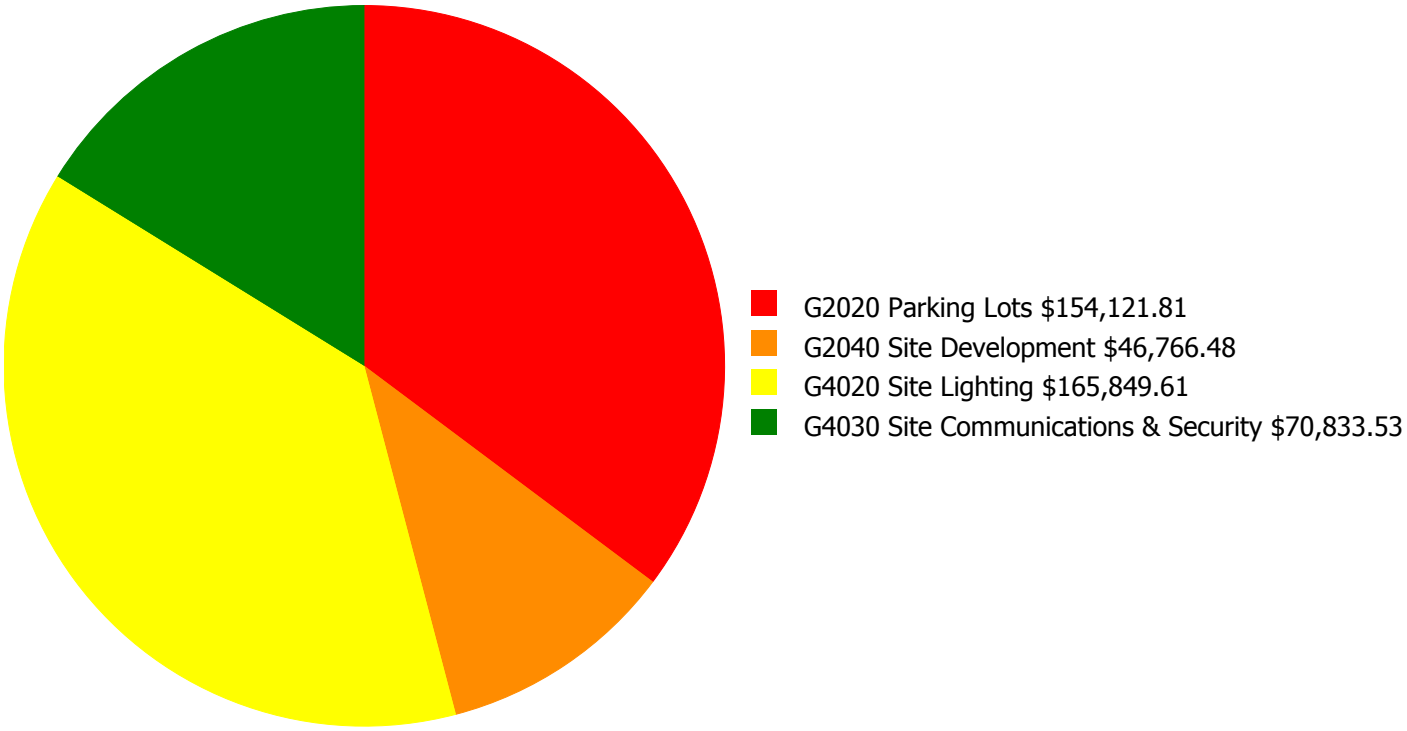
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 18.06%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$49,904.00	16.06 %	$99,808.00	14.06 %
2017	$724,824	$51,401.00	42.27 %	$102,803.00	38.27 %
2018	$0	$52,943.00	40.27 %	$105,887.00	34.27 %
2019	$0	$54,532.00	38.27 %	$109,063.00	30.27 %
2020	$2,297,186	$56,168.00	118.06 %	$112,335.00	108.06 %
2021	$0	$57,853.00	116.06 %	$115,705.00	104.06 %
2022	$0	$59,588.00	114.06 %	$119,176.00	100.06 %
2023	$0	$61,376.00	112.06 %	$122,752.00	96.06 %
2024	$0	$63,217.00	110.06 %	$126,434.00	92.06 %
2025	$0	$65,114.00	108.06 %	$130,227.00	88.06 %
Total:	**$3,022,010**	**$572,096.00**		**$1,144,190.00**	

Deficiency Summary by System

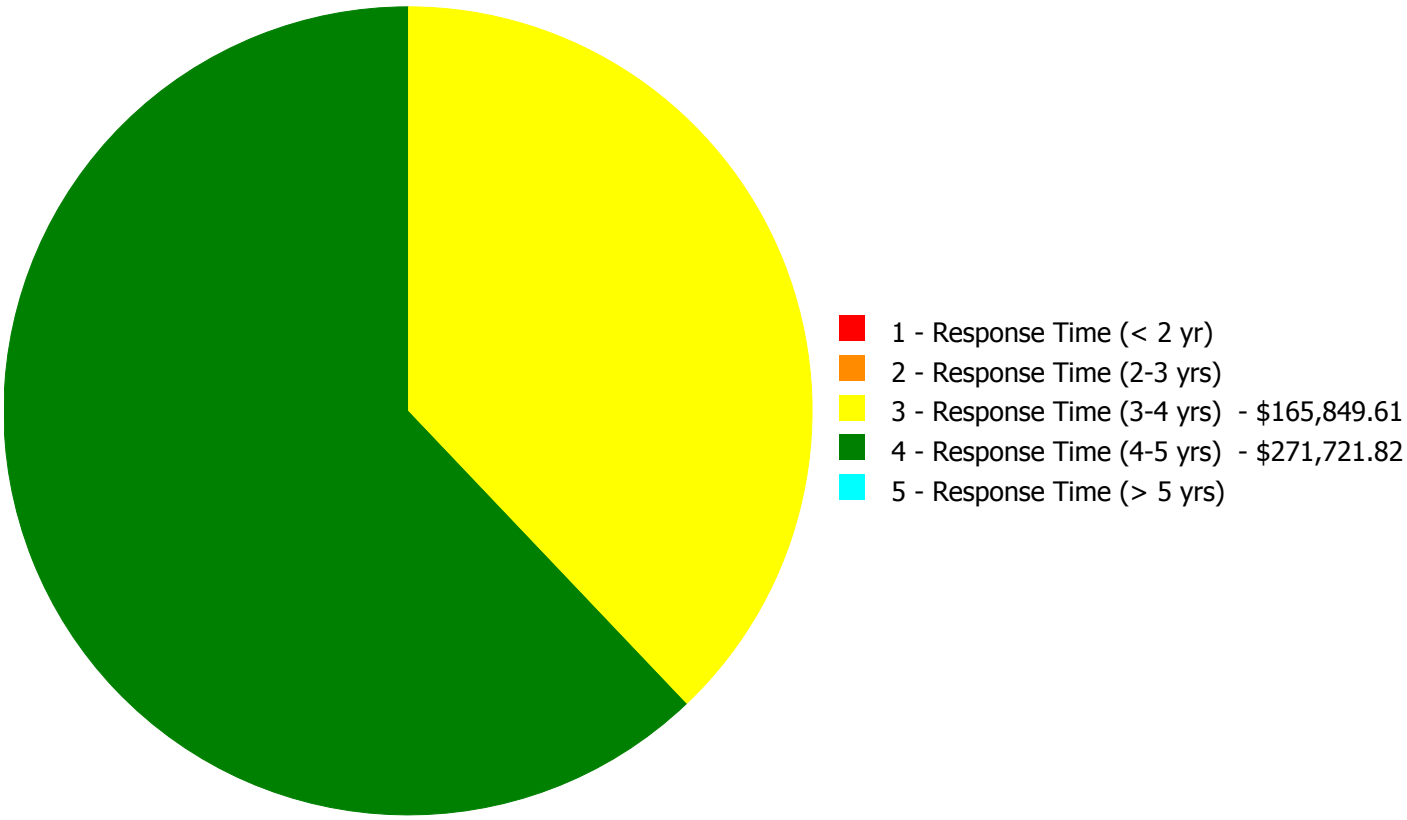
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $437,571.43

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: $437,571.43

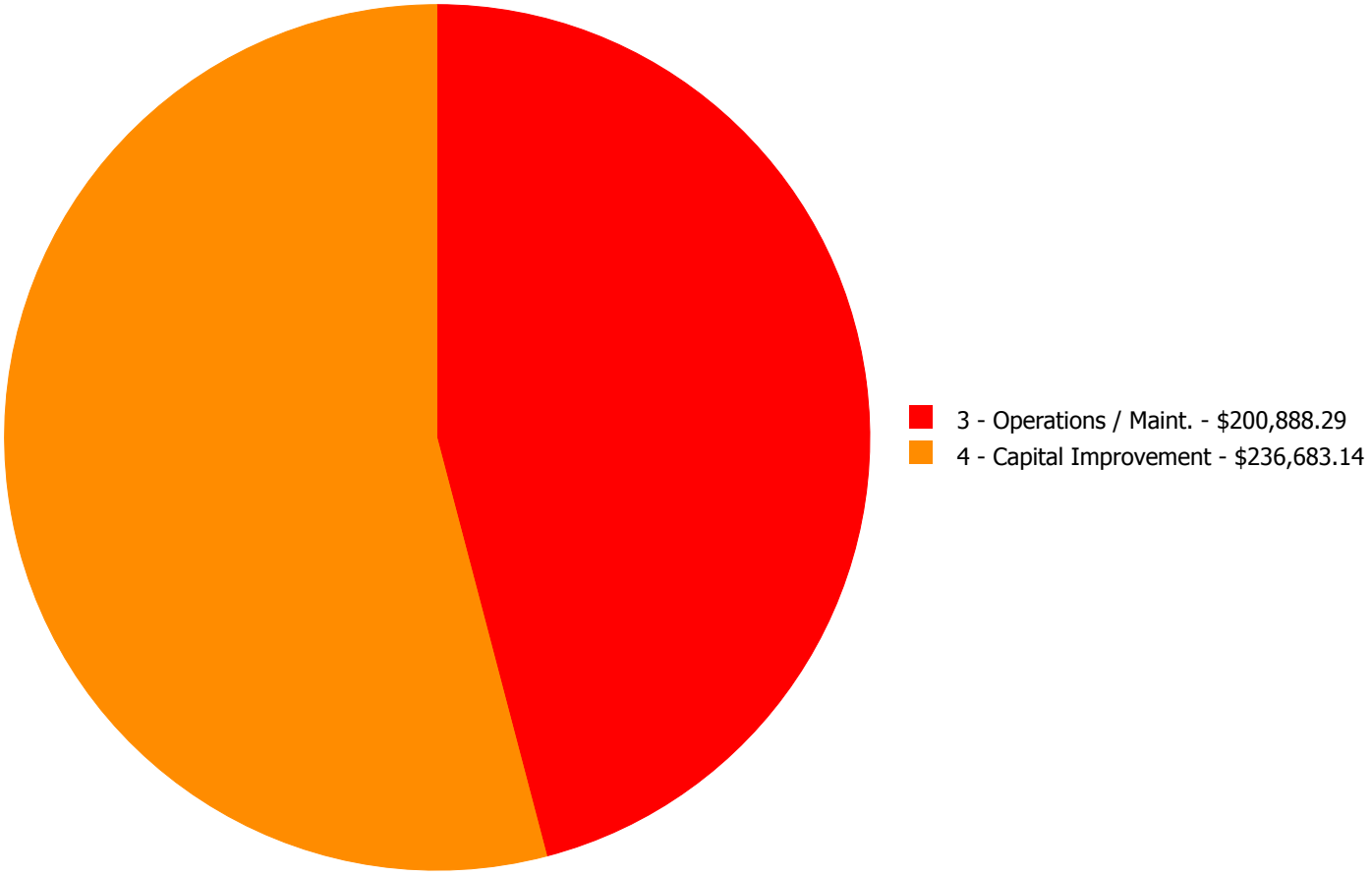
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2020	Parking Lots	$0.00	$0.00	$0.00	$154,121.81	$0.00	$154,121.81
G2040	Site Development	$0.00	$0.00	$0.00	$46,766.48	$0.00	$46,766.48
G4020	Site Lighting	$0.00	$0.00	$165,849.61	$0.00	$0.00	$165,849.61
G4030	Site Communications & Security	$0.00	$0.00	$0.00	$70,833.53	$0.00	$70,833.53
	Total:	$0.00	$0.00	$165,849.61	$271,721.82	$0.00	$437,571.43

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: $437,571.43

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

This deficiency has no image.

Location: grounds

Distress: Inadequate

Category: 4 - Capital Improvement

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: $165,849.61

Assessor Name: Craig Anding

Date Created: 02/09/2016

Notes: Install additional pole-mounted lights for the grounds

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

System: G2020 - Parking Lots

Location: Parking /
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Remove and replace AC paving parking lot
Qty: 5,000.00
Unit of Measure: S.F.
Estimate: $70,704.54
Assessor Name: Craig Anding
Date Created: 02/10/2016

Notes: • Replace courtyard paving - 5,000 SF

System: G2020 - Parking Lots

Location: Driveway access to mechanical room
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Remove and replace concrete paving
Qty: 3,000.00
Unit of Measure: S.F.
Estimate: $63,138.92
Assessor Name: Craig Anding
Date Created: 02/10/2016

Notes: Replace sidewalk and driveway paving

System: G2020 - Parking Lots

Location: On site parking area

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Stripe parking stalls, install parking bumpers, provide handicap symbol and handicap post mounted sign - insert proper quantities in estimate

Qty: 100.00

Unit of Measure: Ea.

Estimate: $20,278.35

Assessor Name: Craig Anding

Date Created: 02/10/2016

Notes: Resurface and restripe parking, replace wheel stops

System: G2040 - Site Development

Location: Playground; southeast corner

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 1,000.00

Unit of Measure: Ea.

Estimate: $46,766.48

Assessor Name: Craig Anding

Date Created: 02/10/2016

Notes: Replace damaged sections of chain link fencing – 1,000 SF

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: $70,833.53

Assessor Name: Craig Anding

Date Created: 02/09/2016

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