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.

Randolph School

Governance	DISTRICT	Report Type	High
Address	3101 Henry Ave.	Enrollment	519
	Philadelphia, Pa 19129	Grade Range	'09-12'
Phone/Fax	215-227-4407 / 215-227-8655	Admissions Category	Citywide
Website	Www.Philasd.Org/Schools/Randolph	Turnaround Model	N/A

Building/System FCI Tiers

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

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

Building and Grounds

	FCI	Repair Costs	Replacement Cost
Overall	**45.31%**	**$27,752,027**	**$61,244,477**
Building	46.02 %	$27,124,876	$58,935,850
Grounds	27.17 %	$627,151	$2,308,627

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	89.73 %	$4,119,341	$4,590,823
Exterior Walls (Shows condition of the structural condition of the exterior facade)	02.18 %	$96,868	$4,444,928
Windows (Shows functionality of exterior windows)	19.18 %	$317,855	$1,657,122
Exterior Doors (Shows condition of exterior doors)	93.48 %	$189,798	$203,037
Interior Doors (Classroom doors)	20.87 %	$95,412	$457,137
Interior Walls (Paint and Finishes)	00.00 %	$0	$1,606,059
Plumbing Fixtures	00.00 %	$0	$3,839,465
Boilers	00.00 %	$0	$2,269,880
Chillers/Cooling Towers	69.70 %	$1,365,035	$1,958,400
Radiators/Unit Ventilators/HVAC	228.86 %	$11,961,887	$5,226,681
Heating/Cooling Controls	132.68 %	$2,177,652	$1,641,317
Electrical Service and Distribution	76.87 %	$1,176,612	$1,530,680
Lighting	62.26 %	$2,625,076	$4,216,360
Communications and Security (Cameras, Pa System and Fire Alarm)	45.74 %	$722,312	$1,579,311

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

S609001;Randolph

Final

Site Assessment Report

January 30, 2017

PARSONS

Table of Contents

Site Executive Summary

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

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

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

Gross Area (SF):	121,579
Year Built:	1975
Last Renovation:	
Replacement Value:	$61,244,477
Repair Cost:	$27,752,026.76
Total FCI:	45.31 %
Total RSLI:	72.68 %

Description:

Facility Assessment
September 2015

School District of Philadelphia
A Philip Randolph Career and Technical High School
3101 Henry Avenue
Philadelphia, PA 19129

121,579 SF / 569 Students / LN 04

A Philip Randolph Career and Technical High School building is identified as B609001 and was originally constructed in 1975 as the A Philip Career Academy. This facility is located at 3101 Henry Avenue in Philadelphia, PA. The design of the rectangle-shaped, concrete and steel-framed building includes, brick facades with a concrete foundation.

The main entrance faces the western exterior on Henry Avenue. This School serves students in grades 9-12. This school was originally constructed in 1975 and consists of a single level with a total gross square footage of 121,579 GSF.

This school has several classrooms, a library, kitchen and student commons, weight Gym, cafeteria, Culinary Arts Academy, The

Academy Oral Health, HRT, Welding and lecture rooms, Fire Fighting Academy, Auto Body Shop, Automotive Shop, and Culinary School with supporting administrative spaces. This school also is home to the only Vending Academy in Philadelphia.

Special note: the exterior façade is decorated with a mural. This mural is titled "Ingenuity" by Jared Bader and completed in 2005. This painting, part of the Philadelphia Mural Arts Program, extends from the parking lot corner to the entrance to the general parking area.

The information for this report was collected during a site visit on September 14, 2015.

Mr. Rene Jimenez, Building Engineer, accompanied the assessment team on a tour of the school and provided detailed information on the building systems and maintenance history.

ARCHITECTURAL / STRUCTURAL SYSTEMS

Foundations are concrete and appear to be in good condition. The superstructure is concrete and steel framed with masonry support and likewise in good condition. The steel framed superstructure is good condition. The slab on grade floor construction is in good condition

The exterior windows are the original industrial metal framed single pane applications. Some of the windows are operable while others no longer function. The exterior windows have exceeded the expected life cycle for this type of application. It is recommended that the exterior window system be replaced with units that retain their dimensions and profiles, but that incorporate updated energy-efficient features.

The exterior brick surfaces are generally in fair to good condition for their age. In some locations, such as the exterior finish facing Henry Ave. Sections of bricks have cracked or spalled and should be replaced. The repointing of deteriorated mortar joints is also recommended, using mortar of a similar color and consistency as the original. Following the detailed examination of the brick and repair of mortar construction joints, the entire building should be pressure washed to remove stains and embedded pollutants. If moisture is found to be penetrating the masonry facade, the application of a spray sealant to the suspected exterior masonry surface is recommended.

The exterior doors are metal applications with metal frames. The exterior door system for this school is a very high traffic system. Most of the doors are in good condition however, the shop doors on the East face of the school are aging at a faster rate than expected based on traffic and condition. The Eastern exterior door system and service doors are recommended for upgrade. The new doors are expected to retain their dimensions and profiles, but that incorporate updated energy-efficient features.

This school has several roll up door systems that appear to be original to the construction of the school. As indicated in the photos several doors have been repaired from damage. During the time of the inspection several door no longer functioned properly. This system is a very high traffic system and represents the only access for the educational needs of the school. This door system is recommended to be removed and replaced with a modern overhead door system with safety and security considerations.

Special consideration for those that may be physically challenged was not a main factor in the last re-construction effort for this school. The exterior ADA ramp on the Western exterior of the school is the only option the physically challenged has to enter the school. The path of travel is not very clear from that entrance of the school and from the access points. The interior path of travel is partially supported by some door hardware, signage, hand rails and guard rails. However, the building has received limited upgrades and does not fully support a path of travel for those that may be physically challenged. Included in this report are modifications that allow for considerations to enhance the upgrades required to support the physically challenged.

This school has a public pay phone located in the lobby near the office. Care should be taken to address those that may be physically challenged or remove the phone. During the time of the inspection the phone was out of order and it is not clear the current condition. However legislation clearly states 4.31 that public phones are required to be accessible.

Interior partitions include CMU, gypsum wallboard on metal studs. Interior partitions are in very good condition. Interior doors are typically wood in metal frames with some sidelights, wired glass glazing. Other interior doors include hollow metal in hollow metal frames at the mechanical spaces, exit ways, access doors. Doors are generally in very good condition and are ADA compliant and fire rated. Doors swing in the direction of exit and do not obstruct hallways. Fittings include: marker boards; tack boards; interior signage; wooden lockers; toilet accessories and toilet partitions; fixed storage shelving. The fittings are in very good condition and expected to have a normal life cycle that extends beyond the outlook of this report.

The existing built up roofing system has clear signs of ponding and there reportedly has been an increase of roofing maintenance. As indicated in the photos, most of the roof surface material no longer exists and there are sections of landscaping growth that is affecting the integrity of this built up roof. This deficiency provides a budgetary consideration for a complete roof replacement. Care should be taken to ensure that tree growth does not affect the newly installed roofing system. In the short term the trees should be cut away from the roof.

Interior partitions include CMU, gypsum wallboard on metal studs. Interior partitions are in very good condition. As indicated in the photos the school as set up an attendance desk in the main egress path. The egress path is expected to be clear of debris or items that may block the path of travel. Although this is an issue there is no deficiency required at this time, care should be taken to clear the egress paths.

The interior safety glass that separates the classroom from the shop area is damaged. As indicated in the photo several sections are damaged and one is broken creating a safety issue. This deficiency provides a budgetary consideration for the removal and replacement of the shop safety glass to the classroom.

Interior doors are typically wood in metal frames with wired glass glazing. Other interior doors include hollow metal in hollow metal frames at hallway breaks and exit ways, access doors. Doors are generally in fair condition and are a mix of ADA compliant and non-complaint doors with both non-rated and fire rated. Several of the shop doors are aging at a faster than normal rate for this application. Numinous repairs to locksets and door hardware have advanced the deterioration of the doors. This deficiency provides a budgetary consideration to replace a portion of the interior doors and frames with consideration for the physically challenged.

Fittings include: marker boards; tack boards; toilet accessories and toilet partitions; fixed storage shelving. The fittings are in very good condition and expected to have a normal life cycle that extends beyond the outlook of this report.

The shop locker room locker system is beyond its expected life, several of the lockers are damaged and some of the doors are missing. The locker system is recommended for removal and replacement with a new system. Budgetary consideration for a portion of the lockers to be designed with the needs of the physically challenged in mind is included in this effort.

There is no directional signage and room signage is a custom design in places and scarce or painted with no consistency in others. Accessibility signage criteria have been established for the physically challenged. These include mounting heights, contrast and finish, raised and Braille characters and pictograms, and character proportions and heights. It is recommended that compliant signage be installed throughout the building.

Interior wall finishes are typically painted CMU. Other wall finishes include and ceramic tile at restrooms. Wall finishes are generally in very good condition. There are no deficiencies required at this time.

Interior floor finishes are typically VCT in classrooms and corridors. Other floor finishes include: sealed concrete in the shops and industrial areas. Interior ceilings are typically 2 x 4 acoustical tile in metal grid or exposed ceilings in the industrial areas.

The vinyl floor finish in most of this school is in very good condition and appears to have part of an isolated upgrade. Some of the flooring is damaged from water leaks and industrial ware. This deficiency provides a budgetary consideration for partial removal and replacement of the damaged vinyl tile.

The ceiling finish is a mix of painted, exposed and 2 x 4 Acoustical tile finish. Ceilings have been repaired in several areas and are in good condition considering the age of the application and the current condition of the school. The ceiling finish is expected to require upgrades to support the recommended efforts in this report prior to re-opening. This deficiency provides a budgetary consideration for removal and replacement of the current ceiling finish to a new acoustical tile finish. Considering the recommended mechanical and electrical upgrades this effort should be completed as part of an overall renewal program for the school.

Elevators are not present at this school.

Institutional equipment includes: instrumental equipment; A/V equipment; shops and laboratory equipment; (Culinary Arts, Oral Health, Fire Fighting/EMS, Auto Collision, Auto Mechanics, Building Trades/Carpentry, HRT, Welding and Vending. Other equipment includes kitchen equipment; loading dock bumpers/levelers. There are no corrections required at this time.

Furnishings include: fixed casework; window shades/blinds. There are no corrections required at this time.

MECHANICAL SYSTEMS

PLUMBING- Plumbing fixtures are standard china commercial quality with wall mounted lavatories, urinals and water closets. Most lavatories have dual wheel handle faucets and urinals and water closets have manual flush valves with lever operators. There are cast iron service sinks and integral lab counter top sinks in science classrooms. The dental school area has medical equipment stations with integral sinks and medical gas outlets. There are single level stainless steel water coolers with integral refrigeration. Three gas Paloma instantaneous water heaters are in the mechanical room, each with a small inline circulating pump. One unit was disassembled during this survey for maintenance.

Water piping has been replaced since the original installation with copper, but may contain lead solder based on age. Sanitary, waste, vent and rainwater piping is original installation hub and spigot cast iron, with some hubless cast iron where additions or damage has occurred. The water service is connected at Roberts St. The valve assembly is in an exterior pit, and was not accessible. There is an abandoned exterior fueling station with underground fuel storage.

The water heaters should be serviceable up to fifteen more years. Domestic water piping should be replaced based on age and normal service life. Plumbing fixtures should be serviceable twenty five more years. Cast iron sanitary and waste piping should be inspected for damage and repaired as required.

HVAC-The building is heated by steam and hot water generated by four HB Smith cast iron sectional steam boilers. The boilers are Mills model 45 oil fired seventy five hp each installed in 2006. Each unit has a Powerflame burner and control panel, separate oil pump and is connected to a common factory fabricated vent system routed through an existing chimney to a roof cap. There is an underground oil tank, capacity and condition unknown. A duplex fuel oil pump system in the mechanical room provides circulation. Heating hot water is provided by a skid mounted assembly including two steam to water shell and tube heat exchangers, two 10 hp end suction pumps, control panel and an expansion tank. The system is Armstrong, installed in 2006 and is located in the mechanical room. A Shipco triplex condensate return and boiler feed unit serves the boilers. There are also two small cast iron condensate receiver systems in the shop areas. An automatic chemical feed system and water softener are located in the mechanical room.

The building has five Governair single zone package rooftop DX units serving office and classroom areas, installed in 1993. Additional zoning is provided by hot water duct mounted reheat coils. The older control panels indicate the building originally had fifteen indoor horizontal suspended heating and ventilating units with steam coils, connected to outside air louvers, located in shop areas. It is unknown how many units are currently operational. Steam radiation units are located at entrances, toilet rooms, and other areas requiring heat.

The kitchen is not currently used for cooking but has a total of three hoods. One is a grease removal hood with fire suppression, one is heat removal only and one is for steam removal above the dishwasher. The boiler room has combustion air louvers with motorized dampers for combustion air. Approximately six centrifugal roof ventilators provide toilet exhaust, and other roof mounted fans provide exhaust for kitchen hoods, shops and labs. Special systems include a carbon monoxide exhaust system in the automotive repair shop, a paint spray booth in the auto body shop, welding booths with exhaust, and equipment exhaust outlets in the carpentry shop. There are solar collector panels on the roof and an exterior windmill. The condition and functional requirement for these two components is unknown.

Large heating water piping and steam and condensate return is insulated welded black steel, with smaller steel piping having threaded fittings. Fuel oil piping is black steel with screwed fittings. Shop areas have exposed ductwork.

There are old pneumatic control components and control panels. The control system is inoperable.

The boilers installed in 2006 should be serviceable twenty five more years. The hot water equipment was installed in 2006 and has an anticipated service life of fifteen more years. New central station air handling units should be installed for the cafeteria, auditorium and gymnasium. The rooftop air conditioners and the steam radiators and piping have exceeded the normal service life and should be replaced.

FIRE PROTECTION- The building has a complete automatic sprinkler system with semi recessed heads. The service is a twelve inch line on the east side of the building. The valve assembly is in a caged area in the automotive shop.

ELECTRICAL SYSTEMS

Electrical Service-- Electrical service to the building is provided by PECO Energy Company. An underground service is routed to a load center unit substation with 600A load interrupter switch, metering section, 1500 kVA, 13.2 kV-480/277V, 3 phase, 4 wire dry type ABB transformer and General Electric Main Switchboard MSB with 2000A main circuit breaker section and two distribution sections. The load center unit substation transformer has a manufacturer date of 1997. The unit substation is in good condition and has an estimated remaining useful life of 12 years.

There are several distribution panelboards, step-down transformers and panelboards that are located throughout the building in the various vocational departments. Except for two panelboards in the kitchen, all distribution equipment is manufactured by Federal Pacific Electric and is obsolete and needs to be replaced.

Receptacles—In general, receptacle quantities are adequate in the classrooms. A surface raceway system with receptacles was provided where additional receptacles were needed. An allowance for replacement of 50 duplex receptacles that are in poor condition is included in this report. There are also eight duplex receptacles in Science Lab 75 that are located on lab benches within six (6) of sinks that need to be replaced with ground-fault circuit-interrupting (GFCI) type receptacles to comply with code.

Lighting—Corridors, classrooms, offices, computer lab, culinary arts, lunchroom and IMC have 2x4, 4 lamp recessed lensed fluorescent troffers with T12 fluorescent lamps. The kitchen has 2x4 surface mounted modular fluorescent fixtures with T12 lamps. Shop areas, mechanical spaces and Gym/Fitness Center have pendant mounted industrial fluorescent fixtures. Except for the Boiler Room, all fixtures have T12 lamps. The dental labs have been recently renovated and are provided with cable suspended direct/indirect fluorescent fixtures with either T8 or T5 lamps.

Except for the lighting fixtures in the Boiler Room and dental labs, all lighting fixtures need to be replaced with fixtures using T8 or T5 lamps.

There are wall mounted lighting fixtures on the exterior of the building above each exit door. Entrances with canopies have surface mounted incandescent fixtures. Fixtures have served their useful life. It is recommended that 11 exterior wall mounted fixtures and 6 canopy lighting fixtures be replaced with fixtures using LED lamps.

Fire Alarm System-- The fire alarm system control panel (FACP) is a non-addressable Spectronics Corporation Model 641/D, with a manufacturer's date of 11/2005. The system consists of manual pull stations and bell notification appliances only. There are no visual notification appliances. Fire alarms do not report off-premise. The system is obsolete and does not meet current NFPA codes and ADA. The fire alarm system should be replaced with an addressable type system with audible and visual fire alarm notification appliances and pull stations to comply with current codes.

Telephone/LAN-- A telephone and data outlet is provided in each classroom. Wireless access points are located in corridors and classrooms to provide wireless access throughout the building. The MDF equipment and telephone demarcation are located in Room 4, Data Room 1. There are also other IDF rooms in the school. Data Room 3 is located in the IMC.

Paging System-- The paging system is accessed through the telephone system via a 250 watt Bogen amplifier and volume controls for building areas. Each classroom has a ceiling speaker for announcements and class changes. There are also ceiling recessed paging speakers in the corridors.

Clock and Program System-- There is a Standard Electric Time, Master Time 1400 Programmer located in the Main Office that provides program changes and time control. Combination clock/speaker assemblies are located throughout the building. It appears that the clock system is not functioning properly and recessed ceiling speakers were added in rooms with clock/speaker assemblies. There are also some clock/speaker assemblies that have missing speakers. It is recommended that a wireless GPS clock system with master clock controller and battery operated clocks be provided to replace the existing clock system.

Television System-- The television system in this school is no longer in use. Televisions remain wall mounted in classrooms. Overhead projects or smart boards are used in some classrooms.

Video Surveillance and Security Systems-- Video surveillance cameras are located in corridors and on the exterior of the building outside Fire Academy Room 76. The video surveillance equipment is located in Room 25. The age of the video surveillance system was not known. Additional interior and exterior cameras should be provided. An allowance for replacement or addition of 12 interior and 4 exterior cameras are included in this report. Motion sensors are provided in the entrance vestibule and corridors. There are also magnetic door contacts on some internal and exterior doors. Security system keypads are located at the main entrance and in the Boiler Room.

Emergency Power System-- There is a Kohler 40 kW/50 kVA, 208/120V, 3 phase, 4 wire standby generator with diesel fuel supply and sub-base fuel oil tank that only serves egress and exit lighting. The generator was relocated from another site in 2015 and has 119 hours of operation at the time of this assessment. The generator feeds an emergency panelboard via a Kohler 104A automatic transfer switch (ATS).

Emergency Lighting System / Exit Lighting-- Emergency egress and exit lighting is powered from the standby generator. There are also wall mounted emergency lighting units in corridors and shop areas that provide emergency lighting. Construction Shop Room 80

needs additional emergency lighting units. Exit signs are in good condition with an estimated remaining useful life of 10 years.

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

GROUNDS

Fencing consists of either a metal picket or chain link fence. The metal picket fence Henry Avenue while the chain link fence divides the northern property line. Both are in good condition, however care should be taken to cut back some of the growth on the chain link fence and clean the debris from the lot. No deficiencies are required for the fence system at this time.

The landscaping is limited to the main entrance area and the northern lot. There were no issues that surfaced with the landscaping during the time of the inspection therefore no deficiencies are required at this time.

The parking area has ADA parking with approved curb cuts for access to the sidewalks that lead to the side entrance with ADA ramp. However, the parking lots are in poor condition, the harsh environmental conditions associated with snow removal have taken its toll on the asphalt surface. Also, there is no marked path of ingress to the main entrance. This project provides a budgetary consideration for a parking lot renewal program that includes all aspects of the current ADA legislation. Universal upgrades are recommended.

The existing sidewalk system is a mix of the original sidewalks installed during the construction of the school and sections that have been replaced over the years. There is also a section of asphalt pedestrian pavement near the ADA entrance. This area is cracking and damaged but no tripping hazards. Removal of this damaged section of asphalt is recommended. The new section is expected to consist of concrete pavers. Upgrades are required and should include all aspects of current ADA legislation.

The trash dumpster is located in the parking lot open to the students and to the public. The exterior services are not protected. Upgrades to protect the exterior services and trash area are necessary for the safety of the students and the general public. Construction of a secure lockable dumpster area is recommended.

Site Lighting—Site lighting is provided by floodlighting fixtures that are mounted around the perimeter of the building from the roof. The fixtures have reached the end of their useful life and should be replaced with LED floodlighting fixtures.

Site Video Surveillance—there is only one exterior camera at the exterior of Fire Academy Room 76. Additional exterior cameras should be provided at the main entrance and on the north, east and south sides of the building.

RECOMMENDATIONS

- Dumpster isolation
- Signage upgrade
- Replace damaged lockers
- Remove and replace exterior windows
- Repair exterior brick finish
- Selective exterior door replacement
- Remove and replace overhead door system
- Remove and replace roof system
- Remove and replace safety glass
- Replace interior doors
- Replace damaged vinyl tile finish
- Upgrade ceiling finish
- Remove and replace parking lot
- Remove and replace asphalt pavers with concrete pavers
- Provide a new central station air handling unit for the cafeteria with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems.
- Inspect old cast iron sanitary piping including camera observation and replace damaged sections.
- Replace domestic hot and cold water piping including valves, fittings, hangars and insulation.
- Install a two hundred ton air-cooled chiller on the roof with chilled water distribution piping, two pumps, chemical treatment, glycol system and controls located in the mechanical room.
- Install new direct digital control system and building automation system with remote computer control capability and graphics package.
- Provide a new central station air handling unit for the gym/ fitness center with hot and chilled water coils, filters, outside and

return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems.
- Replace existing heating and ventilating units with eight seventy five hundred cfm indoor suspended units with hot water coils, outside air dampers, fans, motors, controls, and filters. Connect to existing hot water system.
- Replace the five Governair DX units with five exterior roof mounted VAV air handling units with chilled water coils, filters, economizer option, fans, motors, variable frequency drives and controls. Connect to new chilled water piping system and existing duct system.
- Replace the following obsolete electrical distribution equipment and their feeder conductors:
  (3) 400A, 480V Distribution Panelboards
  (4) 400A, 208V Distribution Panelboards
  (2) 400A, 480V Panelboards
  (5) 225A, 480V Panelboards
  (10) 225A, 208V Panelboards
  (1) 60A, 208V Panelboard
  (1) 50 kVA, 480-120/240V, 1 phase transformer
  (1) 75 kVA, 480-208/120V transformer
  (2) 112.5 kVA, 480-208/120V transformers
  (2) 225 kVA, 480-208/120V transformers
- Provide allowance for replacement of 50 duplex receptacles that are in poor condition.
- Replace eight (8) duplex receptacles at lab benches in Science Lab 75 with ground-fault circuit-interrupting receptacles.
- Replace all lighting fixtures and branch wiring throughout the building, except the Boiler Room and Dental Lab suites.
- Replace 11 exterior wall mounted fixtures and 6 canopy lighting fixtures with fixtures using LED lamps
- Replace fire alarm system with an addressable system.
- Provide a wireless GPS clock system with master clock controller and battery operated clocks to replace the existing clock system.
- Provide an allowance for replacement or addition of 12 interior and 4 exterior cameras.
- Provide an allowance for adding ten (10) wall mounted emergency lighting units (ELU's), including four (4) additional units in Construction Shop Room 80.
- Replace ten (10) exterior HID floodlighting fixtures on the building exterior with LED type floodlighting fixtures.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 3 / Tm 1
Status:	Accepted by SDP	Team:	Tm 1
Site ID:	S609001		

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.

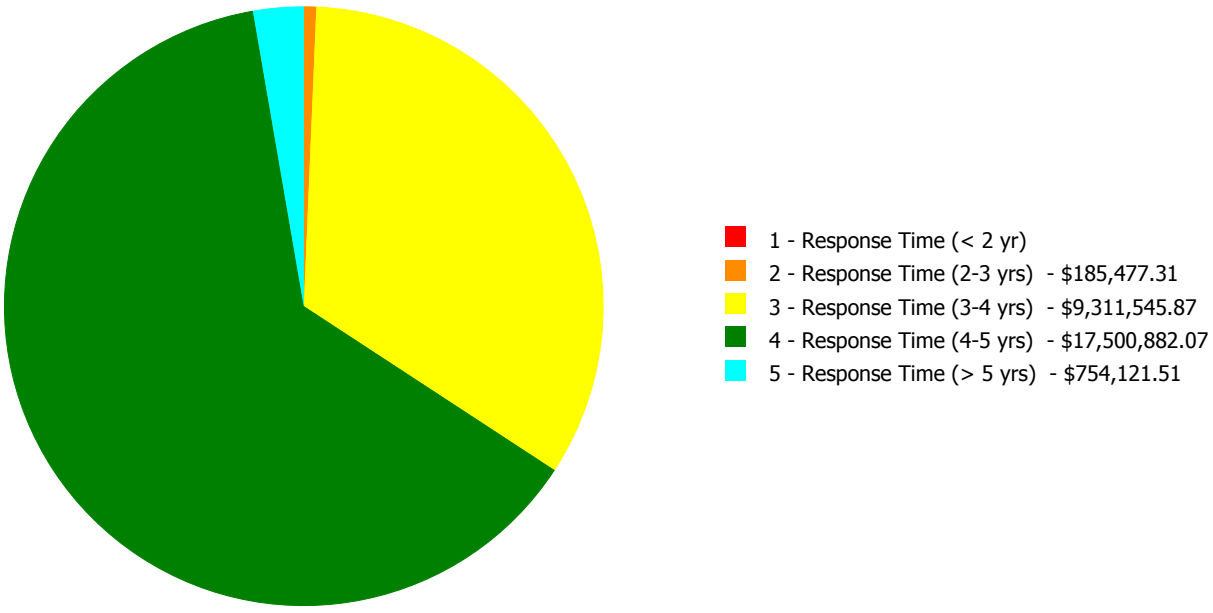
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	60.00 %	0.00 %	$0.00
B10 - Superstructure	60.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	70.51 %	9.59 %	$604,521.62
B30 - Roofing	60.00 %	89.73 %	$4,119,340.98
C10 - Interior Construction	18.22 %	12.36 %	$342,717.32
C30 - Interior Finishes	71.68 %	19.52 %	$994,472.14
D20 - Plumbing	73.56 %	20.64 %	$1,020,494.91
D30 - HVAC	101.85 %	128.94 %	$15,504,573.88
D40 - Fire Protection	28.57 %	0.00 %	$0.00
D50 - Electrical	96.34 %	60.53 %	$4,538,754.74
E10 - Equipment	44.12 %	0.00 %	$0.00
E20 - Furnishings	75.00 %	0.00 %	$0.00
G20 - Site Improvements	45.92 %	34.97 %	$584,972.65
G40 - Site Electrical Utilities	110.00 %	6.63 %	$42,178.52
Totals:	**72.68 %**	**45.31 %**	**$27,752,026.76**

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)
B609001;Randolph	121,579	46.02	$0.00	$166,624.79	$8,745,425.74	$17,458,703.55	$754,121.51
G609001;Grounds	146,200	27.17	$0.00	$18,852.52	$566,120.13	$42,178.52	$0.00
Total:		**45.31**	**$0.00**	**$185,477.31**	**$9,311,545.87**	**$17,500,882.07**	**$754,121.51**

Deficiencies By Priority



Budget Estimate Total: $27,752,026.76

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:	CTE
Gross Area (SF):	121,579
Year Built:	1975
Last Renovation:	
Replacement Value:	$58,935,850
Repair Cost:	$27,124,875.59
Total FCI:	46.02 %
Total RSLI:	73.04 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B609001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S609001		

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	60.00 %	0.00 %	$0.00
B10 - Superstructure	60.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	70.51 %	9.59 %	$604,521.62
B30 - Roofing	60.00 %	89.73 %	$4,119,340.98
C10 - Interior Construction	18.22 %	12.36 %	$342,717.32
C30 - Interior Finishes	71.68 %	19.52 %	$994,472.14
D20 - Plumbing	73.56 %	20.64 %	$1,020,494.91
D30 - HVAC	101.85 %	128.94 %	$15,504,573.88
D40 - Fire Protection	28.57 %	0.00 %	$0.00
D50 - Electrical	96.34 %	60.53 %	$4,538,754.74
E10 - Equipment	44.12 %	0.00 %	$0.00
E20 - Furnishings	75.00 %	0.00 %	$0.00
Totals:	**73.04 %**	**46.02 %**	**$27,124,875.59**

Condition Detail

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

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

System Listing

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

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

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

Site Assessment Report - B609001;Randolph

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	$26.24	S.F.	121,579	100	1975	2075		60.00 %	0.00 %	60			$3,190,233
A1030	Slab on Grade	$15.51	S.F.	121,579	100	1975	2075		60.00 %	0.00 %	60			$1,885,690
B1020	Roof Construction	$48.22	S.F.	121,579	100	1975	2075		60.00 %	0.00 %	60			$5,862,539
B2010	Exterior Walls	$36.56	S.F.	121,579	100	1975	2075		60.00 %	2.18 %	60		$96,868.42	$4,444,928
B2020	Exterior Windows	$13.63	S.F.	121,579	40	1975	2015	2055	100.00 %	19.18 %	40		$317,855.17	$1,657,122
B2030	Exterior Doors	$1.67	S.F.	121,579	25	2005	2030		60.00 %	93.48 %	15		$189,798.03	$203,037
B3010105	Built-Up	$37.76	S.F.	121,579	20	1990	2010	2027	60.00 %	89.73 %	12		$4,119,340.98	$4,590,823
C1010	Partitions	$14.93	S.F.	121,579	100	1975	2075	2027	12.00 %	1.27 %	12		$22,966.89	$1,815,174
C1020	Interior Doors	$3.76	S.F.	121,579	40	1975	2015	2027	30.00 %	20.87 %	12		$95,411.74	$457,137
C1030	Fittings	$4.12	S.F.	121,579	40	1975	2015	2027	30.00 %	44.79 %	12		$224,338.69	$500,905
C3010230	Paint & Covering	$13.21	S.F.	121,579	10	2005	2015	2027	120.00 %	0.00 %	12			$1,606,059
C3020412	Terrazzo & Tile	$75.52	S.F.	3,000	30	1975	2005	2027	40.00 %	0.00 %	12			$226,560
C3020413	Vinyl Flooring	$9.68	S.F.	68,579	20	1975	1995	2027	60.00 %	36.21 %	12		$240,350.63	$663,845
C3020415	Concrete Floor Finishes	$0.97	S.F.	50,000	50	1975	2025	2027	24.00 %	0.00 %	12			$48,500
C3030	Ceiling Finishes	$20.97	S.F.	121,579	25	1975	2000	2027	48.00 %	29.58 %	12		$754,121.51	$2,549,512
D2010	Plumbing Fixtures	$31.58	S.F.	121,579	35	2005	2040		71.43 %	0.00 %	25			$3,839,465
D2020	Domestic Water Distribution	$2.90	S.F.	121,579	25	1975	2000	2042	108.00 %	143.00 %	27		$504,196.69	$352,579
D2030	Sanitary Waste	$2.90	S.F.	121,579	25	1975	2000	2042	108.00 %	146.43 %	27		$516,298.22	$352,579
D2040	Rain Water Drainage	$3.29	S.F.	121,579	30	1975	2005	2025	33.33 %	0.00 %	10			$399,995
D3020	Heat Generating Systems	$18.67	S.F.	121,579	35	2006	2041		74.29 %	0.00 %	26			$2,269,880
D3030	Cooling Generating Systems	$24.48	S.F.	80,000	30			2047	106.67 %	69.70 %	32		$1,365,034.76	$1,958,400
D3040	Distribution Systems	$42.99	S.F.	121,579	25	1975	2000	2042	108.00 %	228.86 %	27		$11,961,887.38	$5,226,681
D3050	Terminal & Package Units	$11.60	S.F.	80,000	20	1993	2013	2037	110.00 %	0.00 %	22			$928,000
D3060	Controls & Instrumentation	$13.50	S.F.	121,579	20	1975	1995	2037	110.00 %	132.68 %	22		$2,177,651.74	$1,641,317
D4010	Sprinklers	$8.71	S.F.	121,579	35	1975	2010	2025	28.57 %	0.00 %	10			$1,058,953
D4020	Standpipes	$0.99	S.F.		35				0.00 %	0.00 %				$0
D5010	Electrical Service/Distribution	$12.59	S.F.	121,579	30	1997	2027		40.00 %	76.87 %	12		$1,176,611.65	$1,530,680
D5020	Lighting and Branch Wiring	$34.68	S.F.	121,579	20	1975	1995	2037	110.00 %	62.26 %	22		$2,625,075.58	$4,216,360
D5030	Communications and Security	$12.99	S.F.	121,579	15	1975	1990	2032	113.33 %	45.74 %	17		$722,312.15	$1,579,311
D5090	Other Electrical Systems	$1.41	S.F.	121,579	30	1975	2005	2047	106.67 %	8.61 %	32		$14,755.36	$171,426
E1020720	Laboratory Equipment, S.F.	$2.90	S.F.	121,579	20	2005	2025		50.00 %	0.00 %	10			$352,579
E1020810	Medical Equipment, S.F.	$3.58	S.F.	121,579	15	2010	2025		66.67 %	0.00 %	10			$435,253
E1030110	Vehicular Service Equipment, S.F.	$3.78	S.F.	121,579	25	1995	2020		20.00 %	0.00 %	5			$459,569
E1090360	Food Service Equipment, S.F.	$6.78	S.F.	121,579	15	2005	2020		33.33 %	0.00 %	5			$824,306
E1090620	Mechanical & Manufacturing Equipment, S.F.	$6.49	S.F.	121,579	20	2005	2025		50.00 %	0.00 %	10			$789,048
E1090620	School Equipment, S.F.	$4.84	S.F.	121,579	20	2005	2025		50.00 %	0.00 %	10			$588,442
E2010	Fixed Furnishings	$2.13	S.F.	121,579	40	2005	2045		75.00 %	0.00 %	30			$258,963
								Total	**73.04 %**	**46.02 %**			**$27,124,875.59**	**$58,935,850**

System Notes

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

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

Note: Painted CMU 60%
Brick 10%
No finish 30%

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

Note: tile 2%
vinyl 56%
concrete 42%

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

Note: There are six (6) secondary transformers, as follows:
(1) 50 kVA
(1) 75 kVA
(2) 112.5 kVA
(2) 225 kVA

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:	**$27,124,876**	**$0**	**$0**	**$0**	**$0**	**$1,637,198**	**$0**	**$0**	**$0**	**$0**	**$5,357,786**	**$34,119,859**
*** 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**
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**
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	$96,868	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$96,868**
B2020 - Exterior Windows	$317,855	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$317,855**
B2030 - Exterior Doors	$189,798	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$189,798**
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	$4,119,341	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,119,341**
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	$22,967	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$22,967**
C1020 - Interior Doors	$95,412	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$95,412**
C1030 - Fittings	$224,339	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$224,339**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$240,351	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$240,351**

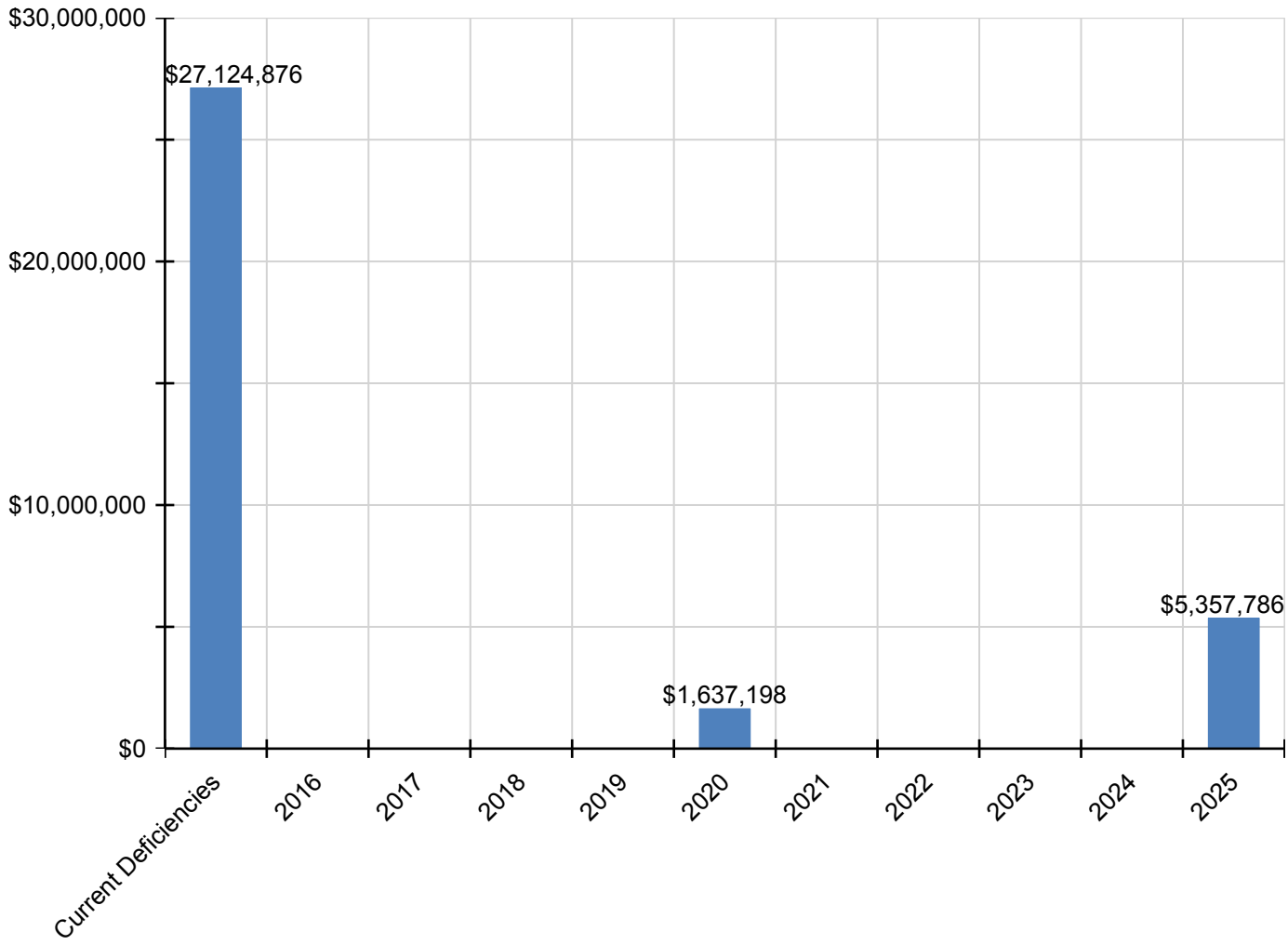
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$754,122	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$754,122**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2020 - Domestic Water Distribution	$504,197	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$504,197**
D2030 - Sanitary Waste	$516,298	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$516,298**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$591,315	**$591,315**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3030 - Cooling Generating Systems	$1,365,035	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,365,035**
D3040 - Distribution Systems	$11,961,887	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$11,961,887**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$2,177,652	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,177,652**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,565,458	**$1,565,458**
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	$1,176,612	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,176,612**
D5020 - Lighting and Branch Wiring	$2,625,076	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,625,076**
D5030 - Communications and Security	$722,312	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$722,312**
D5090 - Other Electrical Systems	$14,755	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$14,755**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020720 - Laboratory Equipment, S.F.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$521,220	**$521,220**
E1020810 - Medical Equipment, S.F.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$643,438	**$643,438**
E1030 - Vehicular Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1030110 - Vehicular Service Equipment, S.F.	$0	$0	$0	$0	$0	$586,042	$0	$0	$0	$0	$0	**$586,042**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1090360 - Food Service Equipment, S.F.	$0	$0	$0	$0	$0	$1,051,156	$0	$0	$0	$0	$0	**$1,051,156**
E1090620 - Mechanical & Manufacturing Equipment, S.F.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,166,455	**$1,166,455**

E1090620 - School Equipment, S.F.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$869,900	**$869,900**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

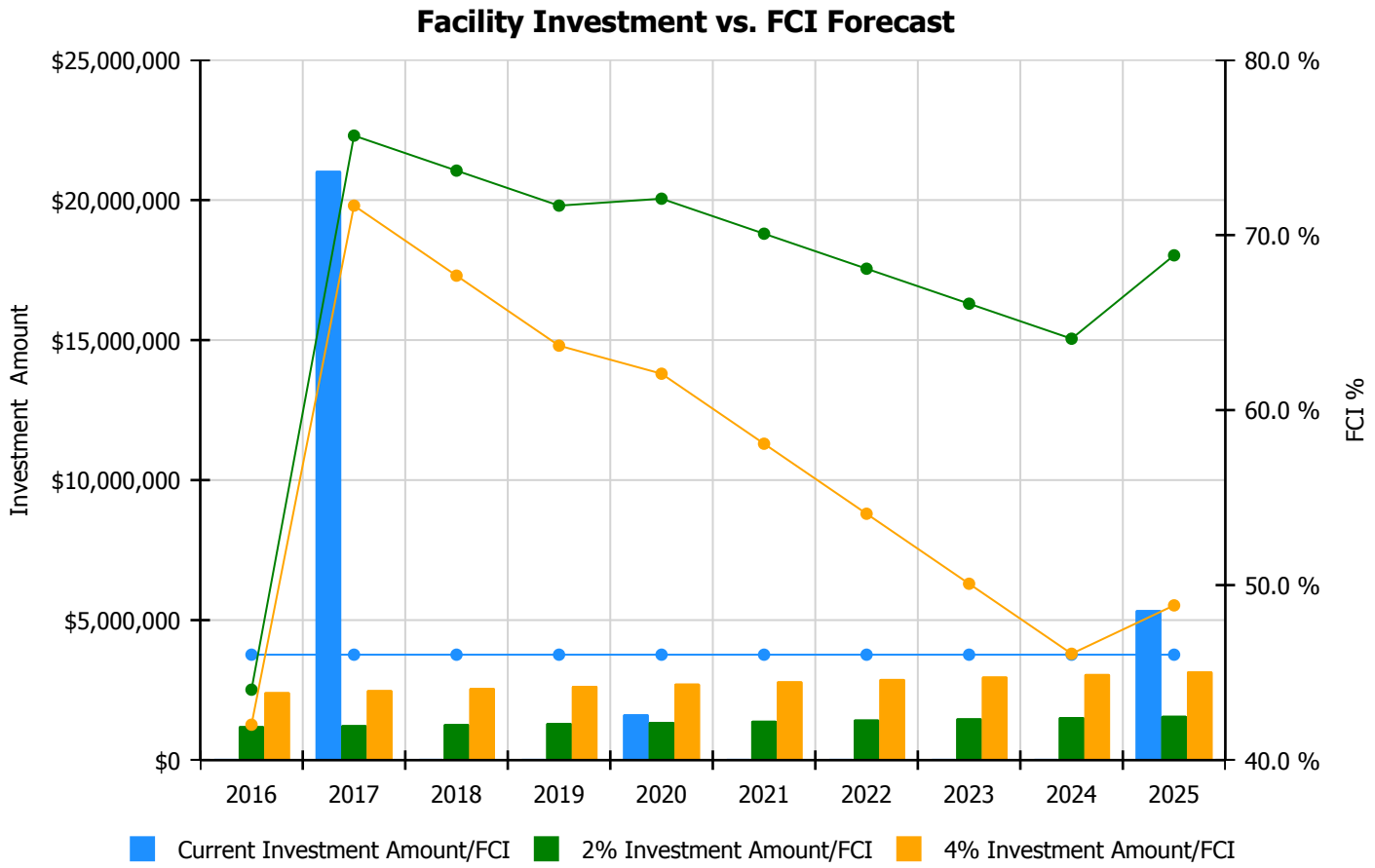
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

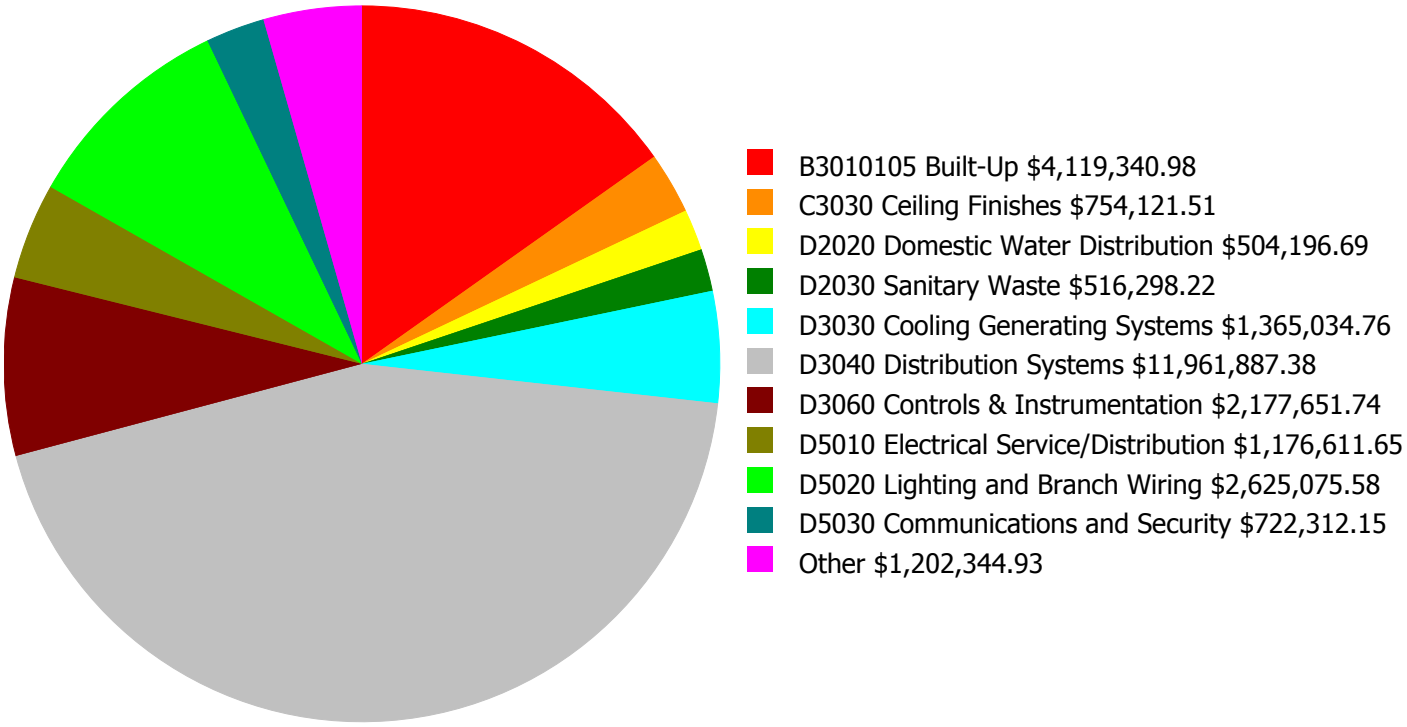
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 46.02%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$1,214,079.00	44.02 %	$2,428,157.00	42.02 %
2017	$21,043,993	$1,250,501.00	75.68 %	$2,501,002.00	71.68 %
2018	$0	$1,288,016.00	73.68 %	$2,576,032.00	67.68 %
2019	$0	$1,326,656.00	71.68 %	$2,653,313.00	63.68 %
2020	$1,637,198	$1,366,456.00	72.08 %	$2,732,912.00	62.08 %
2021	$0	$1,407,450.00	70.08 %	$2,814,899.00	58.08 %
2022	$0	$1,449,673.00	68.08 %	$2,899,346.00	54.08 %
2023	$0	$1,493,163.00	66.08 %	$2,986,327.00	50.08 %
2024	$0	$1,537,958.00	64.08 %	$3,075,917.00	46.08 %
2025	$5,357,786	$1,584,097.00	68.84 %	$3,168,194.00	48.84 %
Total:	**$28,038,977**	**$13,918,049.00**		**$27,836,099.00**	

Deficiency Summary by System

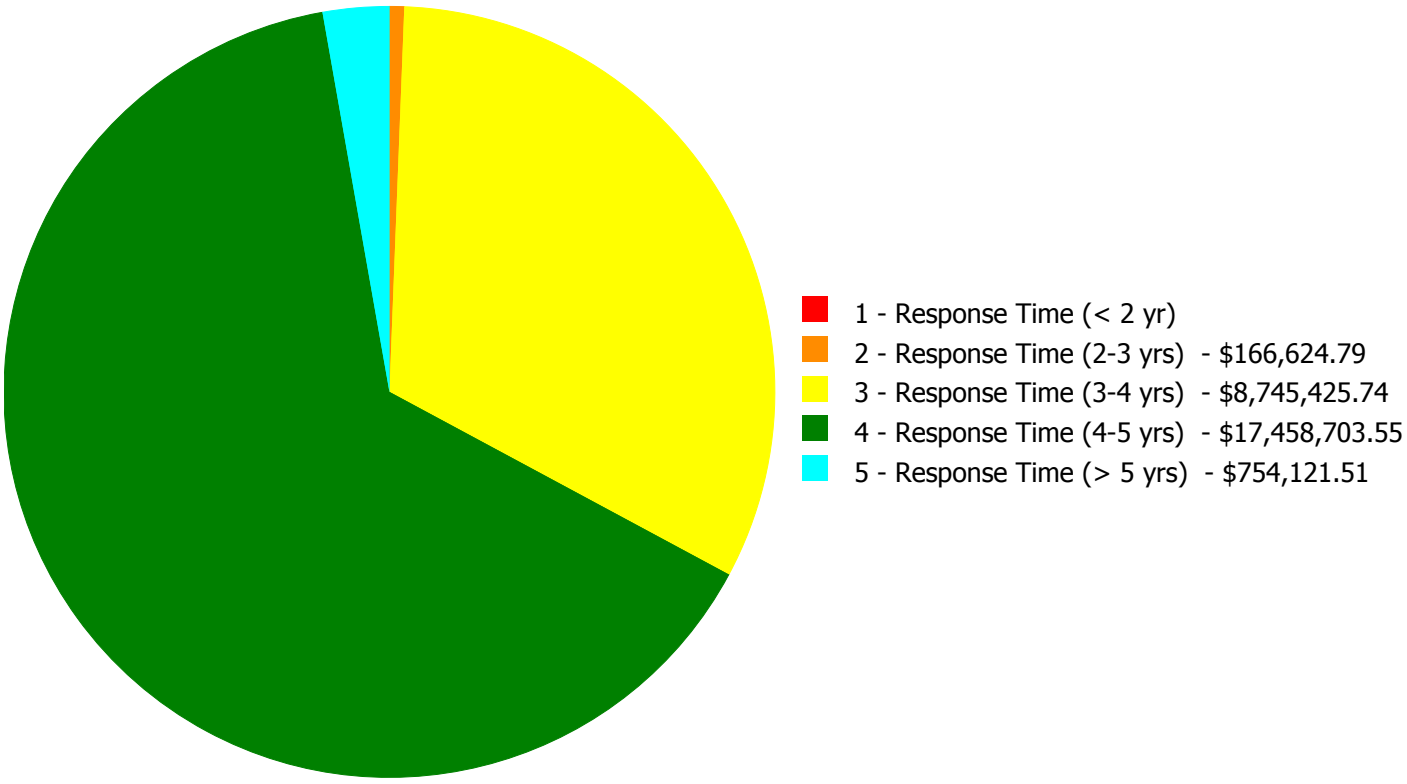
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $27,124,875.59

Deficiency Summary by Priority

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



Budget Estimate Total: $27,124,875.59

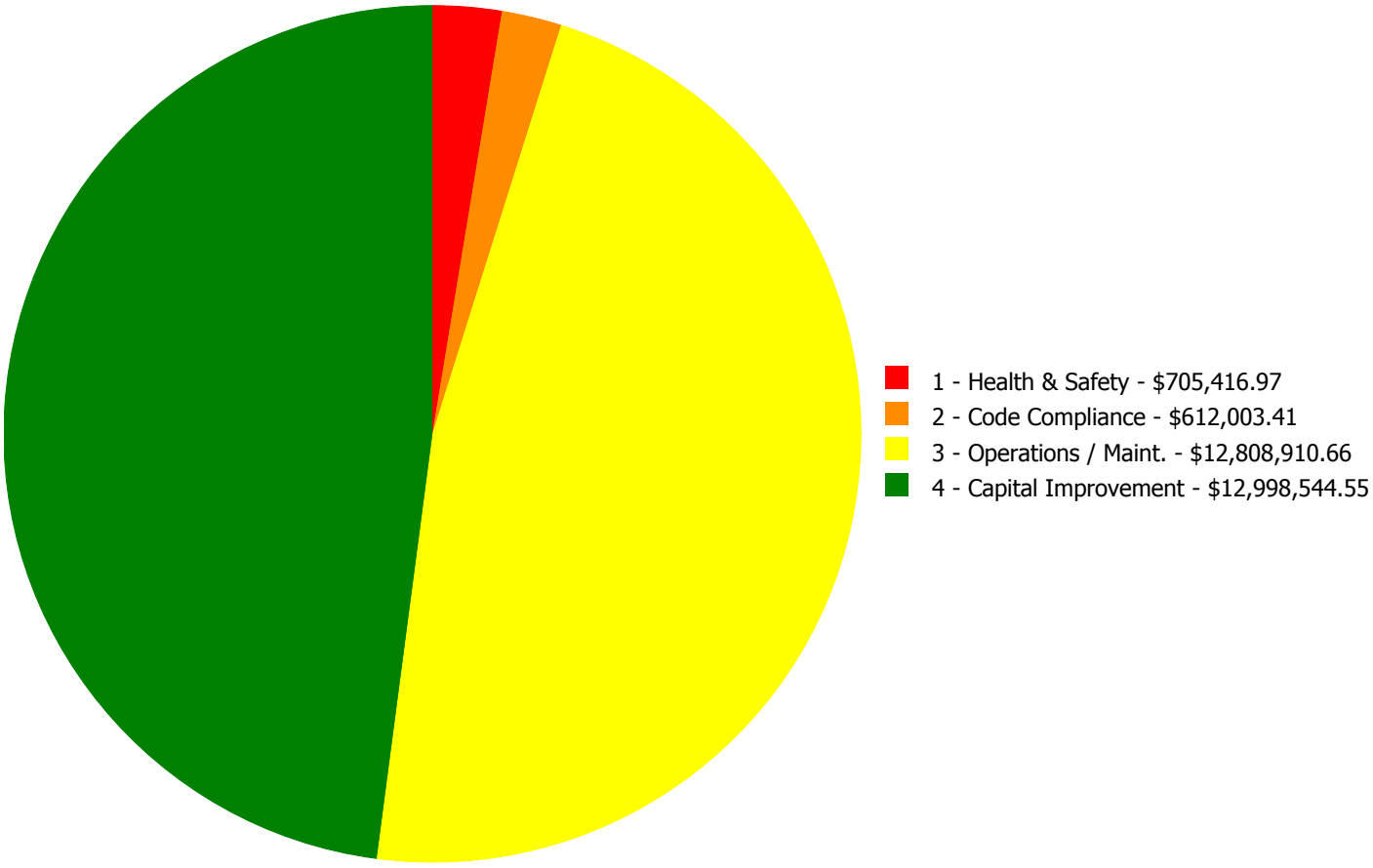
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
B2010	Exterior Walls	$0.00	$0.00	$0.00	$96,868.42	$0.00	$96,868.42
B2020	Exterior Windows	$0.00	$0.00	$0.00	$317,855.17	$0.00	$317,855.17
B2030	Exterior Doors	$0.00	$0.00	$189,798.03	$0.00	$0.00	$189,798.03
B3010105	Built-Up	$0.00	$0.00	$4,119,340.98	$0.00	$0.00	$4,119,340.98
C1010	Partitions	$0.00	$22,966.89	$0.00	$0.00	$0.00	$22,966.89
C1020	Interior Doors	$0.00	$0.00	$95,411.74	$0.00	$0.00	$95,411.74
C1030	Fittings	$0.00	$140,918.14	$0.00	$83,420.55	$0.00	$224,338.69
C3020413	Vinyl Flooring	$0.00	$0.00	$0.00	$240,350.63	$0.00	$240,350.63
C3030	Ceiling Finishes	$0.00	$0.00	$0.00	$0.00	$754,121.51	$754,121.51
D2020	Domestic Water Distribution	$0.00	$0.00	$0.00	$504,196.69	$0.00	$504,196.69
D2030	Sanitary Waste	$0.00	$0.00	$0.00	$516,298.22	$0.00	$516,298.22
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$1,365,034.76	$0.00	$1,365,034.76
D3040	Distribution Systems	$0.00	$0.00	$0.00	$11,961,887.38	$0.00	$11,961,887.38
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$2,177,651.74	$0.00	$2,177,651.74
D5010	Electrical Service/Distribution	$0.00	$0.00	$1,176,611.65	$0.00	$0.00	$1,176,611.65
D5020	Lighting and Branch Wiring	$0.00	$2,739.76	$2,593,968.52	$28,367.30	$0.00	$2,625,075.58
D5030	Communications and Security	$0.00	$0.00	$555,539.46	$166,772.69	$0.00	$722,312.15
D5090	Other Electrical Systems	$0.00	$0.00	$14,755.36	$0.00	$0.00	$14,755.36
	Total:	$0.00	$166,624.79	$8,745,425.74	$17,458,703.55	$754,121.51	$27,124,875.59

Deficiency Summary by Category

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



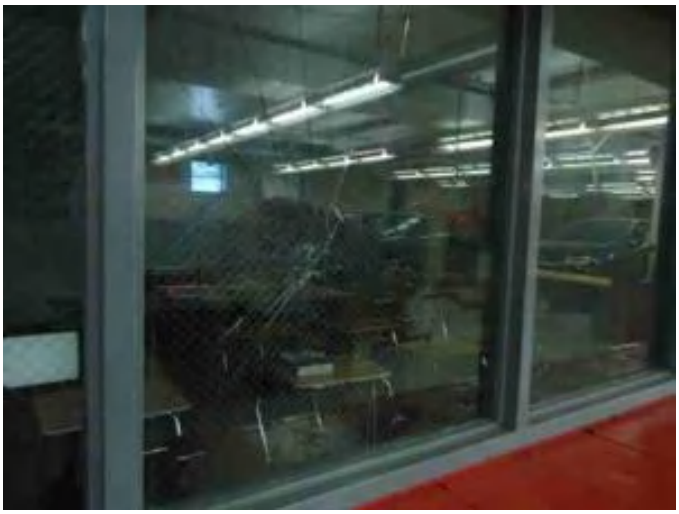
Budget Estimate Total: $27,124,875.59

Deficiency Details by Priority

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

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

System: C1010 - Partitions



Location: Shop
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Remove and replace wire glass
Qty: 200.00
Unit of Measure: S.F.
Estimate: $22,966.89
Assessor Name: System
Date Created: 12/26/2015

Notes: The interior safety glass that separates the classroom from the shop area is damaged. As indicated in the photo several sections are damaged and one is broken creating a safety issue. This deficiency provides a budgetary consideration for the removal and replacement of the shop safety glass to the classroom.

System: C1030 - Fittings

Location: Shops
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Remove and replace lockers - select size
Qty: 200.00
Unit of Measure: Ea.
Estimate: $140,918.14
Assessor Name: System
Date Created: 12/26/2015

Notes: The shop locker room locker system is beyond its expected life, several of the lockers are damaged and some of the doors are missing. The locker system is recommended for removal and replacement with a new system. Budgetary consideration for a portion of the lockers to be designed with the needs of the physically challenged in mind is included in this effort.

System: D5020 - Lighting and Branch Wiring

Location: Science Lab 75

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Replace Wiring Device

Qty: 8.00

Unit of Measure: Ea.

Estimate: $2,739.76

Assessor Name: System

Date Created: 12/15/2015

Notes: Replace eight (8) duplex receptacles at lab benches in Science Lab 75 with ground-fault circuit-interrupting receptacles.

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

System: B2030 - Exterior Doors

Location: Shop

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace overhead door - pick the closest type and size and add for the operator if required

Qty: 12.00

Unit of Measure: Ea.

Estimate: $153,368.75

Assessor Name: System

Date Created: 12/26/2015

Notes: This school has several roll up door systems that appear to be original to the construction of the school. As indicated in the photos several doors have been repaired from damage. During the time of the inspection several door no longer functioned properly. This system is a very high traffic system and represents the only access for the educational needs of the school. This door system is recommended to be removed and replaced with a modern overhead door system with safety and security considerations.

System: B2030 - Exterior Doors

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 4.00

Unit of Measure: Ea.

Estimate: $36,429.28

Assessor Name: System

Date Created: 12/26/2015

Notes: The exterior doors are metal applications with metal frames. The exterior door system for this school is a very high traffic system. Most of the doors are in good condition however, the shop doors on the East face of the school are aging at a faster rate than expected based on traffic and condition. The Eastern exterior door system and service doors are recommended for upgrade. The new doors are expected to retain their dimensions and profiles, but that incorporate updated energy-efficient features.

System: B3010105 - Built-Up

Location: Roof

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Built Up Roof

Qty: 121,579.00

Unit of Measure: S.F.

Estimate: $4,119,340.98

Assessor Name: System

Date Created: 12/26/2015

Notes: The existing built up roofing system has clear signs of ponding and there reportedly has been an increase of roofing maintenance. As indicated in the photos most of the roof surface material no longer exist and there are sections of landscaping growth that is effecting the integrity of this built up roof. This deficiency provides a budgetary consideration for a complete roof replacement. Care should be taken to ensure that tree growth does not affect the newly installed roofing system. In the short term the trees should be cut away from the roof.

System: C1020 - Interior Doors

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 20.00

Unit of Measure: Ea.

Estimate: $95,411.74

Assessor Name: System

Date Created: 12/26/2015

Notes: Interior doors are typically wood in metal frames with wired glass glazing. Other interior doors include hollow metal in hollow metal frames at hallway breaks and exit ways, access doors. Doors are generally in fair condition and is a mix of ADA compliant and non-complaint doors with both non-rated and fire rated. Several of the shop doors are aging at a faster than normal rate for this application. Numinous repairs to locksets and door hardware have advanced the deterioration of the doors. This deficiency provides a budgetary consideration to replace a portion of the interior doors and frames with consideration for the physically challenged.

System: D5010 - Electrical Service/Distribution

Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Electrical Distribution System (U)

Qty: 25.00

Unit of Measure: Ea.

Estimate: $1,176,611.65

Assessor Name: System

Date Created: 12/15/2015

Notes: Replace the following obsolete electrical distribution equipment and their feeder conductors:
(3) 400A, 480V Distribution Panelboards
(4) 400A, 208V Distribution Panelboards
(2) 400A, 480V Panelboards
(5) 225A, 480V Panelboards
(10) 225A, 208V Panelboards
(1) 60A, 208V Panelboard
(1) 50 kVA, 480-120/240V, 1 phase transformer
(1) 75 kVA, 480-208/120V transformer
(2) 112.5 kVA, 480-208/120V transformers
(2) 225 kVA, 480-208/120V transformers

System: D5020 - Lighting and Branch Wiring

Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Lighting Fixtures (SF)

Qty: 120,000.00

Unit of Measure: S.F.

Estimate: $2,571,807.56

Assessor Name: System

Date Created: 12/15/2015

Notes: Replace all lighting fixtures and branch wiring throughout the building, except the Boiler Room and Dental Lab suites.

System: D5020 - Lighting and Branch Wiring

Location: Exterior exit discharges

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace lighting fixtures

Qty: 17.00

Unit of Measure: Ea.

Estimate: $22,160.96

Assessor Name: System

Date Created: 12/15/2015

Notes: Replace 11 exterior wall mounted fixtures and 6 canopy lighting fixtures with fixtures using LED lamps

System: D5030 - Communications and Security

Location: Building wide

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Replace fire alarm system

Qty: 121,579.00

Unit of Measure: S.F.

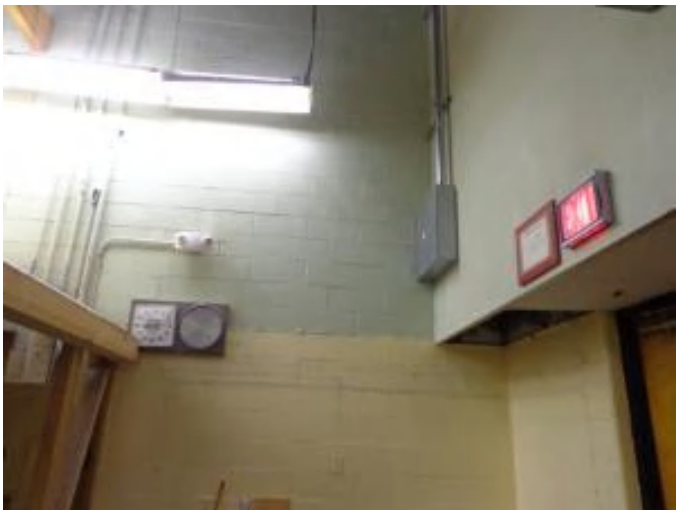
Estimate: $555,539.46

Assessor Name: System

Date Created: 12/15/2015

Notes: Replace fire alarm system with an addressable system.

System: D5090 - Other Electrical Systems



Location: Shop areas

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Add Emergency/Exit Lighting

Qty: 10.00

Unit of Measure: Ea.

Estimate: $14,755.36

Assessor Name: System

Date Created: 12/15/2015

Notes: Provide an allowance for adding ten (10) wall mounted emergency lighting units (ELU's), including four (4) additional units in Construction Shop Room 80.

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

System: B2010 - Exterior Walls

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 3,000.00

Unit of Measure: S.F.

Estimate: $96,868.42

Assessor Name: System

Date Created: 12/26/2015

Notes: The exterior brick surfaces are generally in fair to good condition for their age. In some locations, such as the exterior finish facing Henry Ave. Sections of bricks have cracked or spalled and should be replaced. The repointing of deteriorated mortar joints is also recommended, using mortar of a similar color and consistency as the original. Following the detailed examination of the brick and repair of mortar construction joints, the entire building should be pressure washed to remove stains and embedded pollutants. If moisture is found to be penetrating the masonry facade, the application of a spray sealant to the suspected exterior masonry surface is recommended.

System: B2020 - Exterior Windows

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 60.00

Unit of Measure: Ea.

Estimate: $317,855.17

Assessor Name: System

Date Created: 12/26/2015

Notes: The exterior windows are the original industrial metal framed single pane applications. Some of the windows are operable while others no longer function. The exterior windows have exceeded the expected life cycle for this type of application. It is recommended that the exterior window system be replaced with units that retain their dimensions and profiles, but that incorporate updated energy-efficient features.

System: C1030 - Fittings

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 200.00

Unit of Measure: Ea.

Estimate: $83,420.55

Assessor Name: System

Date Created: 12/26/2015

Notes: There is no directional signage and room signage is a custom design in places and scarce or painted with no consistency in others. Accessibility signage criteria have been established for the physically challenged. These include mounting heights, contrast and finish, raised and Braille characters and pictograms, and character proportions and heights. It is recommended that compliant signage be installed throughout the building.

System: C3020413 - Vinyl Flooring

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace VCT

Qty: 20,000.00

Unit of Measure: S.F.

Estimate: $240,350.63

Assessor Name: System

Date Created: 12/26/2015

Notes: The vinyl floor finish in most of this school is in very good condition and appears to have part of an isolated upgrade. Some of the flooring is damaged from water leaks and industrial ware. This deficiency provides a budgetary consideration for partial removal and replacement of the damaged vinyl tile.

System: D2020 - Domestic Water Distribution

Location: entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace domestic water piping (150 KSF)

Qty: 121,579.00

Unit of Measure: S.F.

Estimate: $504,196.69

Assessor Name: System

Date Created: 11/25/2015

Notes: Replace domestic hot and cold water piping including valves, fittings, hangars and insulation.

System: D2030 - Sanitary Waste

Location: entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Inspect sanitary waste piping and replace damaged sections. (+100KSF)

Qty: 121,579.00

Unit of Measure: S.F.

Estimate: $516,298.22

Assessor Name: System

Date Created: 11/25/2015

Notes: Inspect old cast iron sanitary piping including camera observation and replace damaged sections.

System: D3030 - Cooling Generating Systems

Location: roof, mechanical room

Distress: Inadequate

Category: 4 - Capital Improvement

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

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

Qty: 85,000.00

Unit of Measure: S.F.

Estimate: $1,365,034.76

Assessor Name: System

Date Created: 11/25/2015

Notes: Install a one hundred eighty ton air-cooled chiller on the roof with chilled water distribution piping, two pumps, chemical treatment, glycol system and controls located in the mechanical room.

System: D3040 - Distribution Systems

Location: classrooms/offices

Distress: Energy Efficiency

Category: 4 - Capital Improvement

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

Correction: Replace Rooftop Unit (50T) and air terminals

Qty: 20,000.00

Unit of Measure: S.F.

Estimate: $1,891,171.61

Assessor Name: System

Date Created: 11/20/2015

Notes: Replace rooftop DX unit with RTAHU and convert to VAV.

System: D3040 - Distribution Systems

Location: classrooms/offices

Distress: Energy Efficiency

Category: 4 - Capital Improvement

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

Correction: Replace Rooftop Unit (50T) and air terminals

Qty: 20,000.00

Unit of Measure: S.F.

Estimate: $1,891,171.61

Assessor Name: System

Date Created: 11/25/2015

Notes: Replace rooftop DX unit with RTAHU and convert to VAV.

System: D3040 - Distribution Systems

Location: classrooms/offices
Distress: Energy Efficiency
Category: 4 - Capital Improvement
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace Rooftop Unit (50T) and air terminals
Qty: 20,000.00
Unit of Measure: S.F.
Estimate: $1,891,171.61
Assessor Name: System
Date Created: 11/25/2015

Notes: Replace rooftop DX unit with RTAHU and convert to VAV.

System: D3040 - Distribution Systems

Location: classrooms/offices
Distress: Energy Efficiency
Category: 4 - Capital Improvement
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace Rooftop Unit (50T) and air terminals
Qty: 20,000.00
Unit of Measure: S.F.
Estimate: $1,891,171.61
Assessor Name: System
Date Created: 11/25/2015

Notes: Replace rooftop DX unit with RTAHU and convert to VAV.

System: D3040 - Distribution Systems

Location: classrooms/offices

Distress: Energy Efficiency

Category: 4 - Capital Improvement

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

Correction: Replace Rooftop Unit (50T) and air terminals

Qty: 20,000.00

Unit of Measure: S.F.

Estimate: $1,891,171.61

Assessor Name: System

Date Created: 11/25/2015

Notes: Replace rooftop DX unit with RTAHU and convert to VAV.

System: D3040 - Distribution Systems

This deficiency has no image.

Location: gymnasium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

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

Qty: 6,000.00

Unit of Measure: Ea.

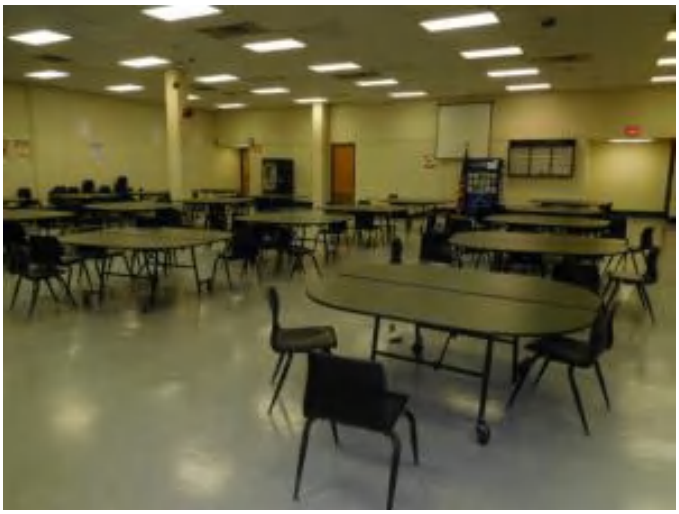
Estimate: $341,294.40

Assessor Name: System

Date Created: 11/25/2015

Notes: Provide a new central station air handling unit for the gym/ fitness center with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems.

System: D3040 - Distribution Systems



Location: cafeteria

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

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

Qty: 579.00

Unit of Measure: Pr.

Estimate: $270,709.01

Assessor Name: System

Date Created: 11/25/2015

Notes: Provide a new central station air handling unit for the cafeteria with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems.

System: D3040 - Distribution Systems

Location: shop areas

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace HV Unit for Lab/Shop (5KSF)

Qty: 5,000.00

Unit of Measure: S.F.

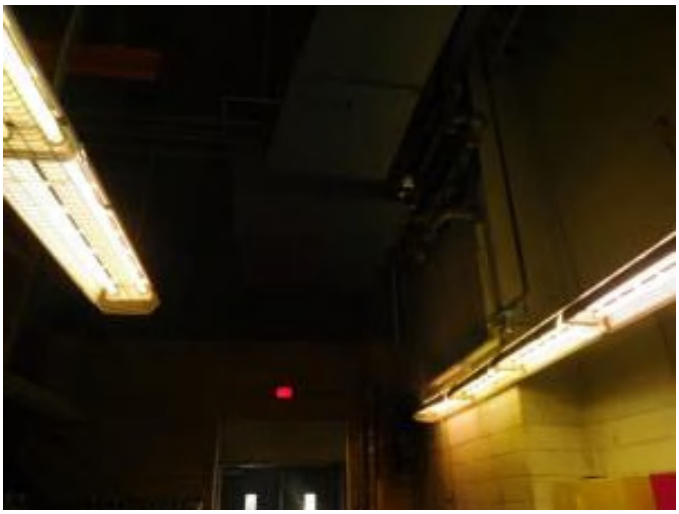
Estimate: $236,753.24

Assessor Name: System

Date Created: 11/19/2015

Notes: Replace existing heating and ventilating units with eight seventy five hundred cfm indoor suspended units with hot water coils, outside air dampers, fans, motors, controls, and filters. Connect to existing hot water system.

System: D3040 - Distribution Systems



Location: shop areas

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace HV Unit for Lab/Shop (5KSF)

Qty: 5,000.00

Unit of Measure: S.F.

Estimate: $236,753.24

Assessor Name: System

Date Created: 11/25/2015

Notes: Replace existing heating and ventilating units with eight seventy five hundred cfm indoor suspended units with hot water coils, outside air dampers, fans, motors, controls, and filters. Connect to existing hot water system.

System: D3040 - Distribution Systems

Location: shop areas

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace HV Unit for Lab/Shop (5KSF)

Qty: 5,000.00

Unit of Measure: S.F.

Estimate: $236,753.24

Assessor Name: System

Date Created: 11/25/2015

Notes: Replace existing heating and ventilating units with eight seventy five hundred cfm indoor suspended units with hot water coils, outside air dampers, fans, motors, controls, and filters. Connect to existing hot water system.

System: D3040 - Distribution Systems

Location: shop areas

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace HV Unit for Lab/Shop (5KSF)

Qty: 5,000.00

Unit of Measure: S.F.

Estimate: $236,753.24

Assessor Name: System

Date Created: 11/25/2015

Notes: Replace existing heating and ventilating units with eight seventy five hundred cfm indoor suspended units with hot water coils, outside air dampers, fans, motors, controls, and filters. Connect to existing hot water system.

System: D3040 - Distribution Systems

Location: shop areas

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace HV Unit for Lab/Shop (5KSF)

Qty: 5,000.00

Unit of Measure: S.F.

Estimate: $236,753.24

Assessor Name: System

Date Created: 11/25/2015

Notes: Replace existing heating and ventilating units with eight seventy five hundred cfm indoor suspended units with hot water coils, outside air dampers, fans, motors, controls, and filters. Connect to existing hot water system.

System: D3040 - Distribution Systems

Location: shop areas

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace HV Unit for Lab/Shop (5KSF)

Qty: 5,000.00

Unit of Measure: S.F.

Estimate: $236,753.24

Assessor Name: System

Date Created: 11/25/2015

Notes: Replace existing heating and ventilating units with eight seventy five hundred cfm indoor suspended units with hot water coils, outside air dampers, fans, motors, controls, and filters. Connect to existing hot water system.

System: D3040 - Distribution Systems

Location: shop areas

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace HV Unit for Lab/Shop (5KSF)

Qty: 5,000.00

Unit of Measure: S.F.

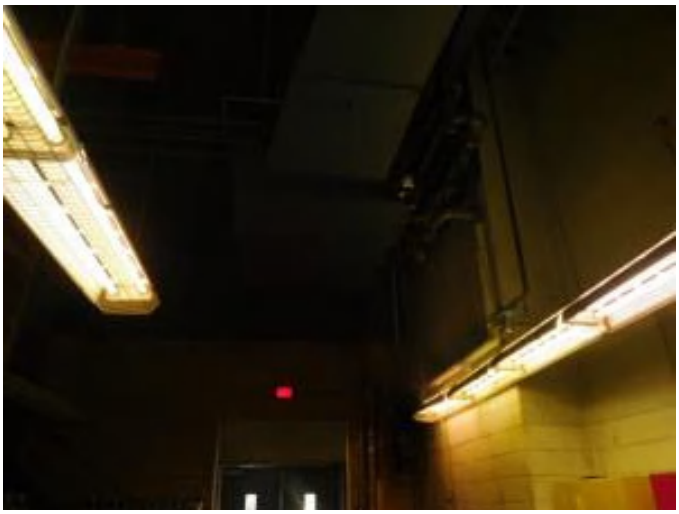
Estimate: $236,753.24

Assessor Name: System

Date Created: 11/25/2015

Notes: Replace existing heating and ventilating units with eight seventy five hundred cfm indoor suspended units with hot water coils, outside air dampers, fans, motors, controls, and filters. Connect to existing hot water system.

System: D3040 - Distribution Systems



Location: shop areas

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace HV Unit for Lab/Shop (5KSF)

Qty: 5,000.00

Unit of Measure: S.F.

Estimate: $236,753.24

Assessor Name: System

Date Created: 11/25/2015

Notes: Replace existing heating and ventilating units with eight seventy five hundred cfm indoor suspended units with hot water coils, outside air dampers, fans, motors, controls, and filters. Connect to existing hot water system.

System: D3060 - Controls & Instrumentation

Location: entire building

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Replace pneumatic controls with DDC (150KSF)

Qty: 121,579.00

Unit of Measure: S.F.

Estimate: $2,177,651.74

Assessor Name: System

Date Created: 11/25/2015

Notes: Install new direct digital control system and building automation system with remote computer control capability and graphics package.

System: D5020 - Lighting and Branch Wiring

Location: Building wide

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace Wiring Device

Qty: 50.00

Unit of Measure: Ea.

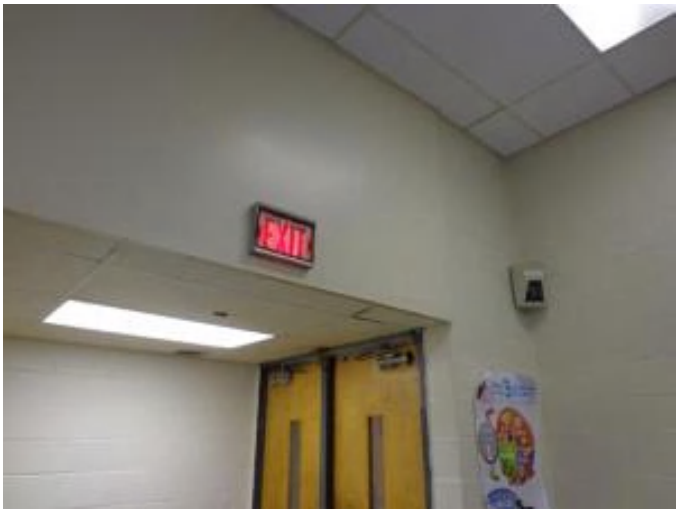
Estimate: $28,367.30

Assessor Name: System

Date Created: 12/15/2015

Notes: Provide allowance for replacement of 50 duplex receptacles that are in poor condition.

System: D5030 - Communications and Security



Location: Building wide

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Add/Replace Video Surveillance System

Qty: 16.00

Unit of Measure: Ea.

Estimate: $132,382.39

Assessor Name: System

Date Created: 12/15/2015

Notes: Provide an allowance for replacement or addition of 12 interior and 4 exterior cameras.

System: D5030 - Communications and Security

Location: Building wide

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Provide wireless GPS clock system

Qty: 1.00

Unit of Measure: LS

Estimate: $34,390.30

Assessor Name: System

Date Created: 12/15/2015

Notes: Provide a wireless GPS clock system with master clock controller and battery operated clocks to replace the existing clock system.

Priority 5 - Response Time (> 5 yrs):

System: C3030 - Ceiling Finishes

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 50,000.00

Unit of Measure: S.F.

Estimate: $754,121.51

Assessor Name: System

Date Created: 12/26/2015

Notes: The ceiling finish is a mix of painted, exposed and 2 x 4 Acoustical tile finish. Ceilings have been repaired in several areas and is in good condition considering the age of the application and the current condition of the school. The ceiling finish is expected to require upgrades to support the recommended efforts in this report prior to re-opening. This deficiency provides a budgetary consideration for removal and replacement of the current ceiling finish to a new acoustical tile finish. Considering the recommended mechanical and electrical upgrades this effort should be completed as part of an overall renewal program for the school.

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, oil fired, flame retention burner, cast iron, steam, gross output, 2480 MBH, includes standard controls and insulated flush jacket, packaged	1.00	Ea.	mechanical room	hb smith	mills 450			35	2006	2041	$40,212.00	$44,233.20
D3020 Heat Generating Systems	Boiler, oil fired, flame retention burner, cast iron, steam, gross output, 2480 MBH, includes standard controls and insulated flush jacket, packaged	1.00	Ea.	mechanical room	hb smith	mills 450			35	2006	2041	$40,212.00	$44,233.20
D3020 Heat Generating Systems	Boiler, oil fired, flame retention burner, cast iron, steam, gross output, 2480 MBH, includes standard controls and insulated flush jacket, packaged	1.00	Ea.	mechanical room	hb smith	mills 450			35	2006	2041	$40,212.00	$44,233.20
D3020 Heat Generating Systems	Boiler, oil fired, flame retention burner, cast iron, steam, gross output, 2480 MBH, includes standard controls and insulated flush jacket, packaged	1.00	Ea.	mechanical room	hb smith	mills 450			35	2006	2041	$40,212.00	$44,233.20
D3050 Terminal & Package Units	A/C packaged, DX, air cooled, hot water heat, VAV, 50 ton	1.00	Ea.	roof	governair	te20	28263		20			$104,997.00	$115,496.70
D3050 Terminal & Package Units	A/C packaged, DX, air cooled, hot water heat, VAV, 50 ton	1.00	Ea.	roof	governair	te20	28260		20			$104,997.00	$115,496.70
D3050 Terminal & Package Units	A/C packaged, DX, air cooled, hot water heat, VAV, 50 ton	1.00	Ea.	roof	governair	te20	28264		20			$104,997.00	$115,496.70
D3050 Terminal & Package Units	A/C packaged, DX, air cooled, hot water heat, VAV, 50 ton	1.00	Ea.	roof	governair	te20			20			$104,997.00	$115,496.70
D3050 Terminal & Package Units	A/C packaged, DX, air cooled, hot water heat, VAV, 50 ton	1.00	Ea.	roof	governair	te20	28262		20			$104,997.00	$115,496.70
D5010 Electrical Service/Distribution	Load interrupter switch, 2 position, 400 kVA & above, 13.8 kV, 600 amp w/CLF fuses, NEMA 1	1.00	Ea.	Main Electrical Room 87	Industrial Electric Manufacturing, Inc.	NA			30	1997	2027	$42,849.00	$47,133.90
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NEHB, 277/480 V, 400 A, 1 stories, 25' horizontal	3.00	Ea.	Automotive Corridor	Federal Pacific Electric	Type CDP			30			$17,698.50	$58,405.05
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NEHB, 277/480 V, 400 A, 1 stories, 25' horizontal	3.00	Ea.	Welding Room	Federal Pacific Electric	Type CDP			30			$17,698.50	$58,405.05
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NEHB, 277/480 V, 400 A, 1 stories, 25' horizontal	1.00	Ea.	Main Electrical Room 87	Federal Pacific Electric	Type CDP	BE-182859		30			$17,698.50	$19,468.35
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NQOD, 120/208 V, 400 A, 1 stories, 25' horizontal	1.00	Ea.	Construction Room 80	Federal Pacific Electric	Type CDP	BE-182832		30			$12,109.50	$13,320.45
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NQOD, 120/208 V, 400 A, 1 stories, 25' horizontal	1.00	Ea.	Loading Dock 27	Federal Pacific Electric	Type CDP			30			$12,109.50	$13,320.45
D5010 Electrical Service/Distribution	Switchgear installation, incl switchboard, panels & circuit breaker, 277/480 V, 2000 A	3.00	Ea.	Main Electrical Room 87	General Electric	Spectra Series			30	1997	2027	$64,242.45	$212,000.09
D5010 Electrical Service/Distribution	Transformer, dry-type, 3 phase 15 kV primary 277/480 volt secondary, 2000 kVA	1.00	Ea.	Main Electrical Room 87	ABB		SN 24-36438L01		30	1997	2027	$139,104.00	$153,014.40
												Total:	**$1,329,484.04**

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):	146,200
Year Built:	1975
Last Renovation:	
Replacement Value:	$2,308,627
Repair Cost:	$627,151.17
Total FCI:	27.17 %
Total RSLI:	63.57 %

Description:

Attributes:

General Attributes:

Bldg ID:	S609001	Site ID:	S609001

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	45.92 %	34.97 %	$584,972.65
G40 - Site Electrical Utilities	110.00 %	6.63 %	$42,178.52
Totals:	**63.57 %**	**27.17 %**	**$627,151.17**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2020	Parking Lots	$7.65	S.F.	38,300	30	1980	2010	2027	40.00 %	183.40 %	12		$537,354.43	$292,995
G2030	Pedestrian Paving	$11.52	S.F.	43,200	40	1980	2020	2027	30.00 %	5.78 %	12		$28,765.70	$497,664
G2040	Site Development	$4.36	S.F.	146,200	25	1980	2005	2027	48.00 %	2.96 %	12		$18,852.52	$637,432
G2050	Landscaping & Irrigation	$3.78	S.F.	64,700	15	1980	1995	2027	80.00 %	0.00 %	12			$244,566
G4020	Site Lighting	$3.58	S.F.	146,200	20			2037	110.00 %	8.06 %	22		$42,178.52	$523,396
G4030	Site Communications & Security	$0.77	S.F.	146,200	20			2037	110.00 %	0.00 %	22			$112,574
								Total	**63.57 %**	**27.17 %**			**$627,151.17**	**$2,308,627**

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.

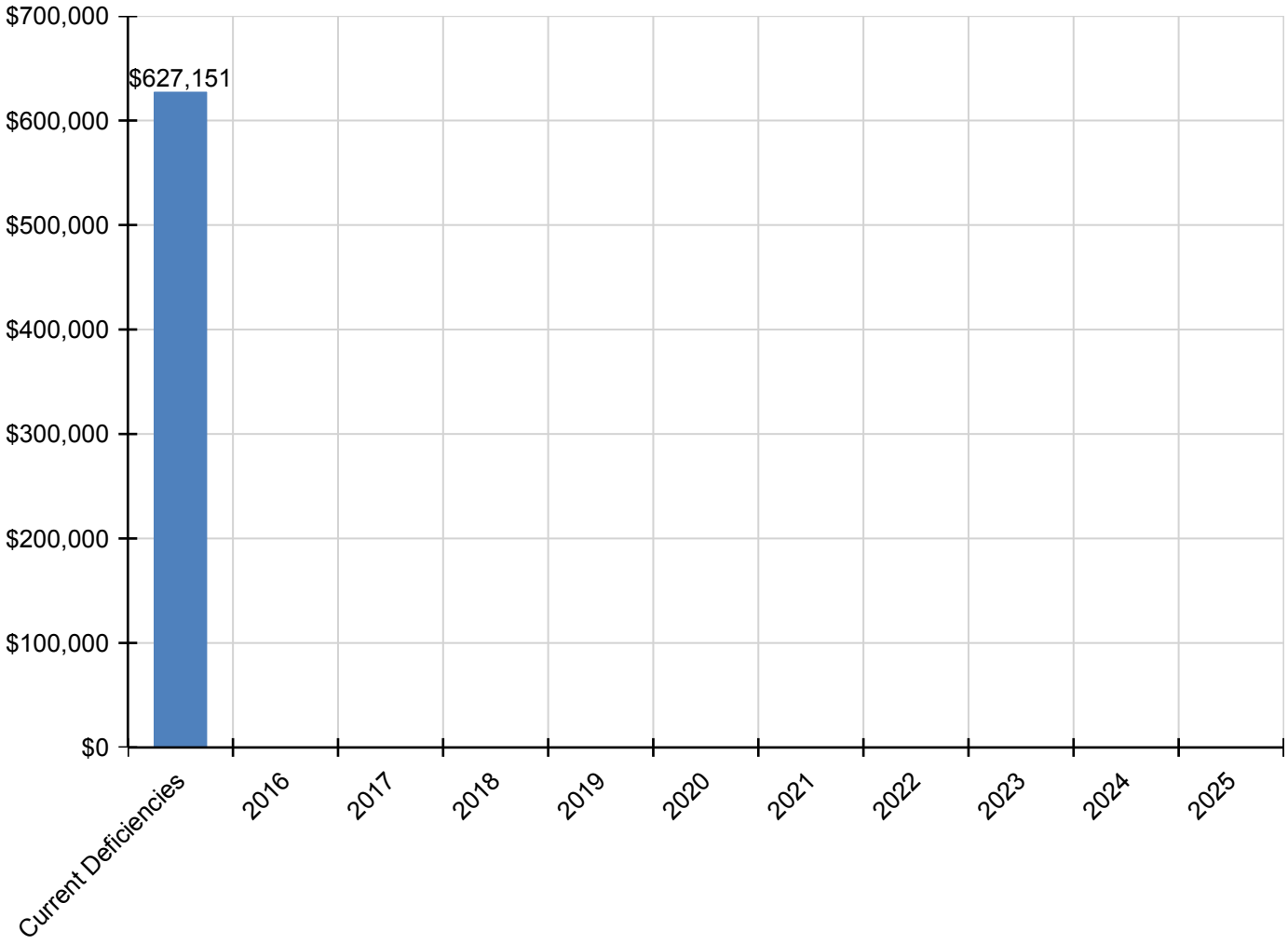
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$627,151**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$627,151**
G - Building Sitework	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G20 - Site Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2020 - Parking Lots	$537,354	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$537,354**
G2030 - Pedestrian Paving	$28,766	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$28,766**
G2040 - Site Development	$18,853	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$18,853**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$42,179	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$42,179**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

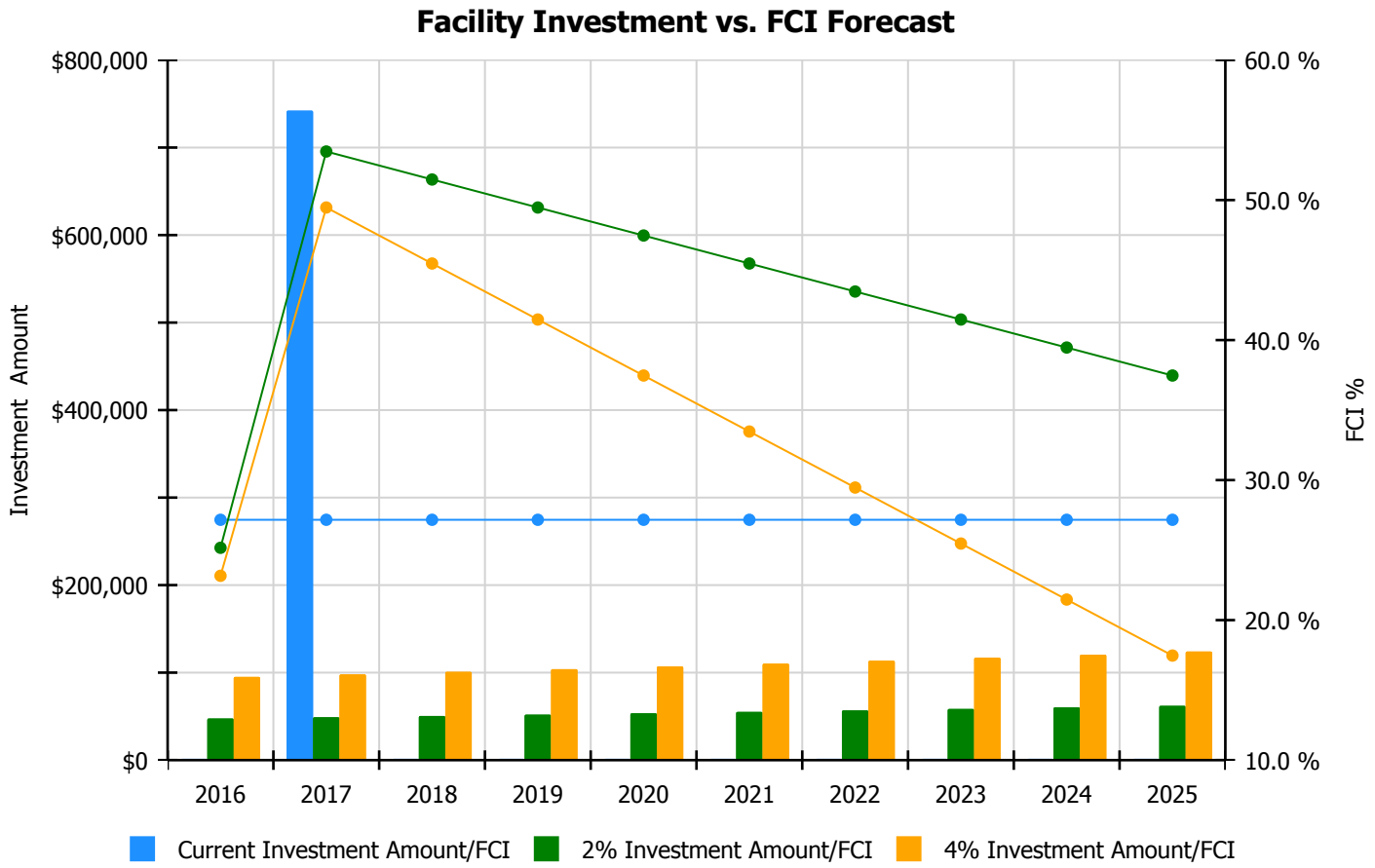
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

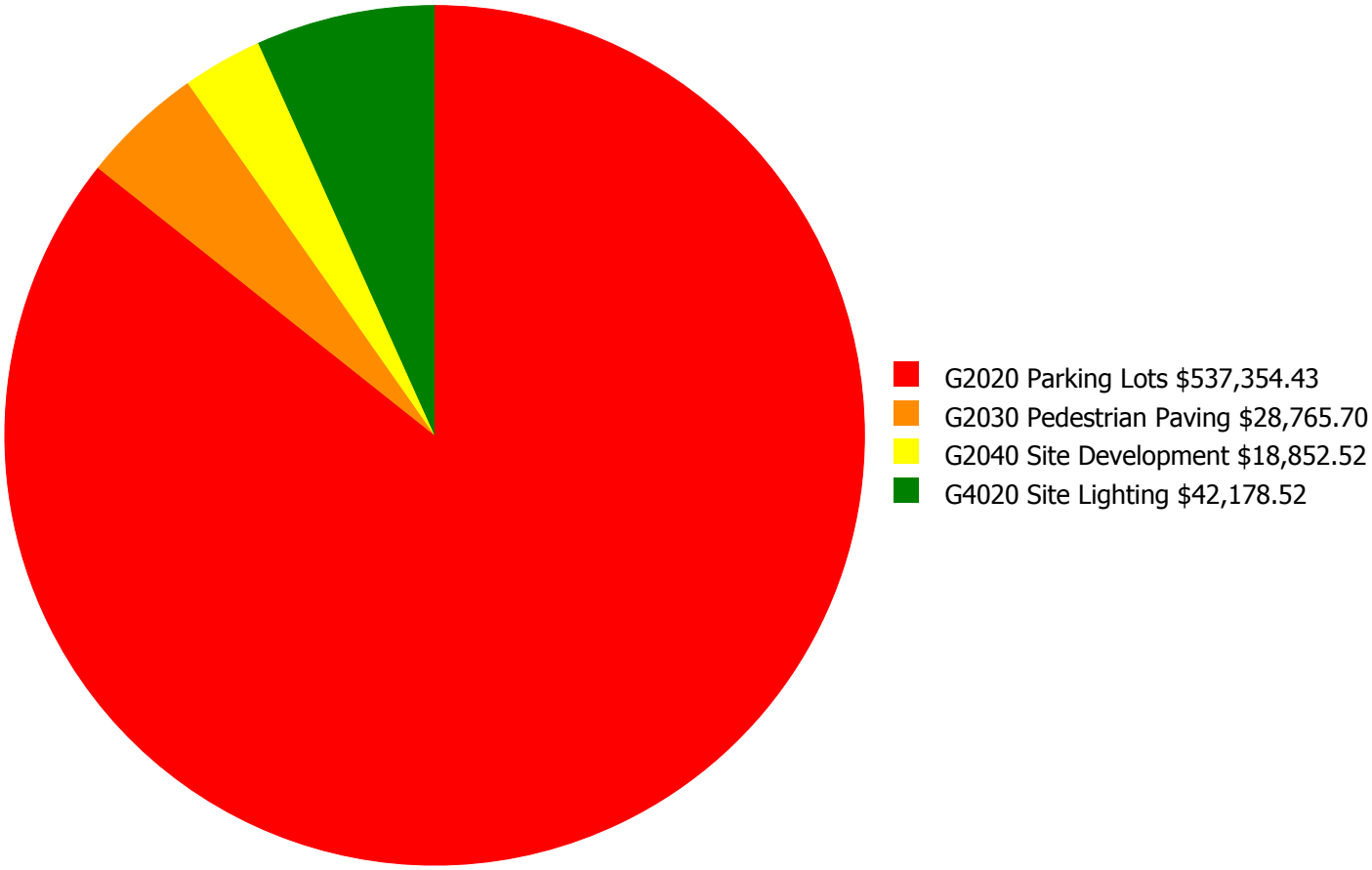
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 27.17%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$47,558.00	25.17 %	$95,115.00	23.17 %
2017	$742,171	$48,984.00	53.47 %	$97,969.00	49.47 %
2018	$0	$50,454.00	51.47 %	$100,908.00	45.47 %
2019	$0	$51,968.00	49.47 %	$103,935.00	41.47 %
2020	$0	$53,527.00	47.47 %	$107,053.00	37.47 %
2021	$0	$55,132.00	45.47 %	$110,265.00	33.47 %
2022	$0	$56,786.00	43.47 %	$113,573.00	29.47 %
2023	$0	$58,490.00	41.47 %	$116,980.00	25.47 %
2024	$0	$60,245.00	39.47 %	$120,489.00	21.47 %
2025	$0	$62,052.00	37.47 %	$124,104.00	17.47 %
Total:	**$742,171**	**$545,196.00**		**$1,090,391.00**	

Deficiency Summary by System

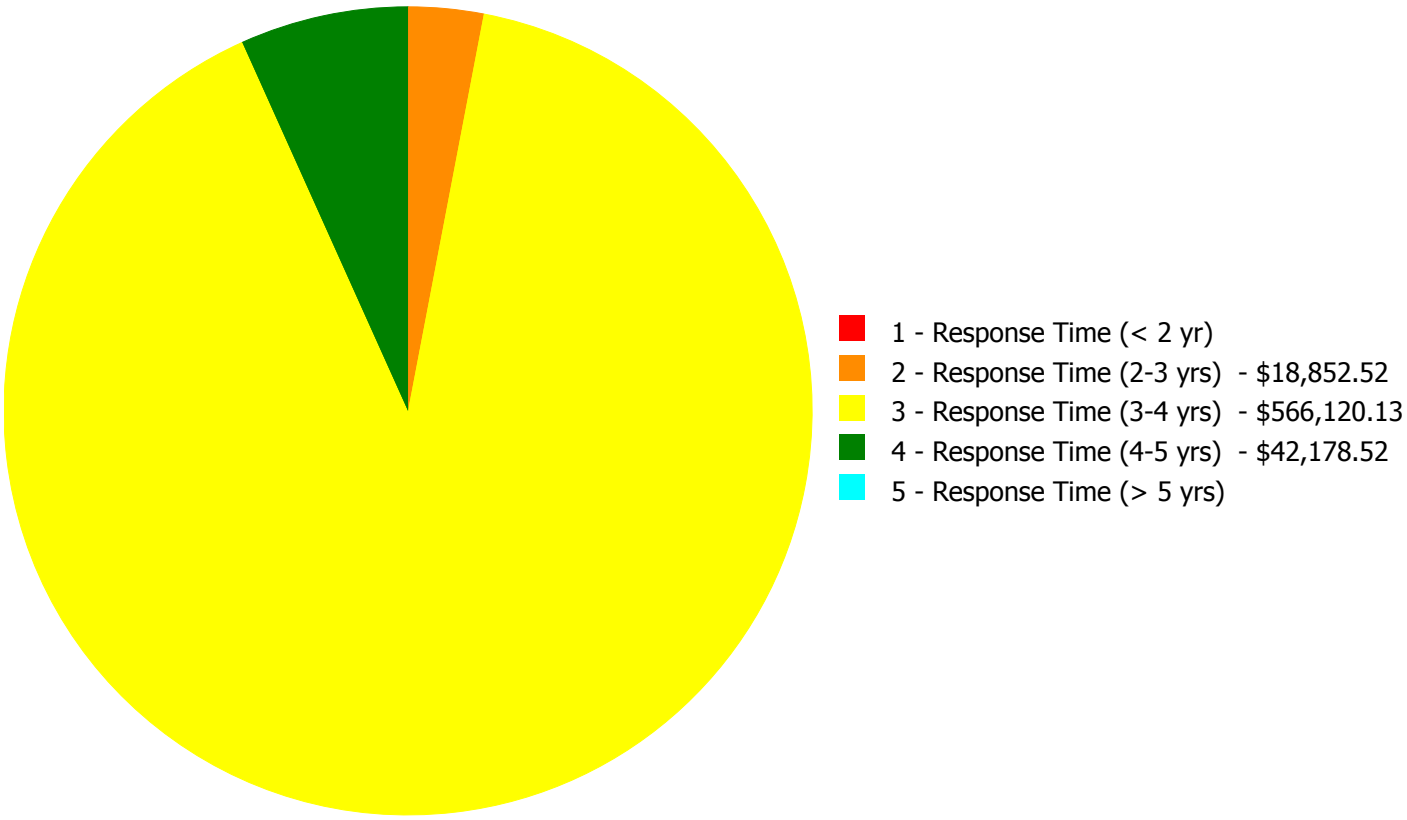
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $627,151.17

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: $627,151.17

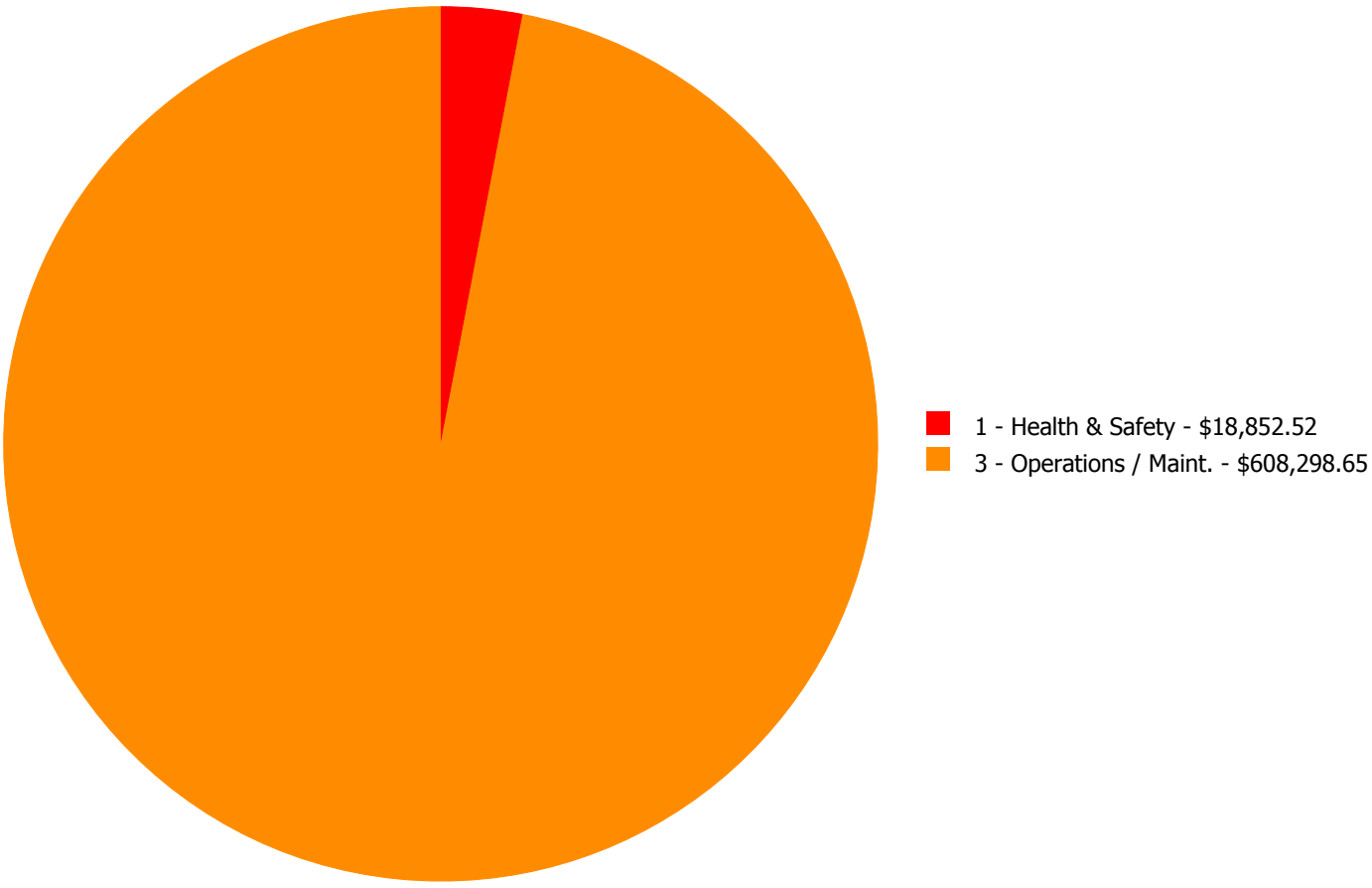
Deficiency By Priority Investment Table

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	$537,354.43	$0.00	$0.00	$537,354.43
G2030	Pedestrian Paving	$0.00	$0.00	$28,765.70	$0.00	$0.00	$28,765.70
G2040	Site Development	$0.00	$18,852.52	$0.00	$0.00	$0.00	$18,852.52
G4020	Site Lighting	$0.00	$0.00	$0.00	$42,178.52	$0.00	$42,178.52
	Total:	$0.00	$18,852.52	$566,120.13	$42,178.52	$0.00	$627,151.17

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: $627,151.17

Deficiency Details by Priority

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

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

System: G2040 - Site Development

Location: Loading Dock

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Build secure trash dumpster enclosure

Qty: 1.00

Unit of Measure: Ea.

Estimate: $18,852.52

Assessor Name: Hayden Collins

Date Created: 12/26/2015

Notes: The trash dumpster is located in the parking lot open to the students and to the public. The exterior services are not protected. Upgrades to protect the exterior services and trash area is necessary for the safety of the students and the general public. Construction of a secure lockable dumpster area is recommended.

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

System: G2020 - Parking Lots

Location: Site

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace AC paving parking lot

Qty: 38,000.00

Unit of Measure: S.F.

Estimate: $537,354.43

Assessor Name: Hayden Collins

Date Created: 12/26/2015

Notes: The parking area has ADA parking with approved curb cuts for access to the sidewalks that lead to the side entrance with ADA ramp. However, the parking lots are in poor condition, the harsh environmental conditions associated with snow removal have taken its toll on the asphalt surface. Also, there is no marked path of ingress to the main entrance. This project provides a budgetary consideration for a parking lot renewal program that includes all aspects of the current ADA legislation. Universal upgrades are recommended.

System: G2030 - Pedestrian Paving

Location: ADA Entrance

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 2,000.00

Unit of Measure: S.F.

Estimate: $28,765.70

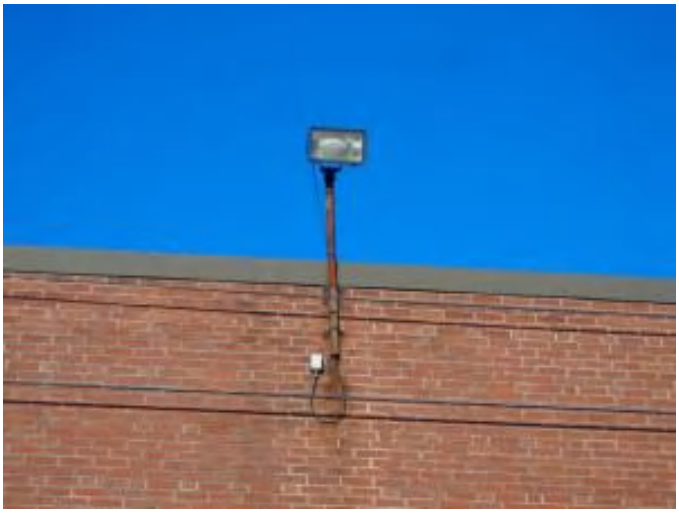
Assessor Name: Hayden Collins

Date Created: 12/26/2015

Notes: The existing sidewalk system is a mix of the original sidewalks installed during the construction of the school and sections that have been replaced over the years. There is also a section of asphalt pedestrian pavement near the ADA entrance. This area is cracking and damaged but no tripping hazards. Removal of this damaged section of asphalt is recommended. The new section is expected to consist of concrete pavers. Upgrades are required and should include all aspects of current ADA legislation.

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

System: G4020 - Site Lighting



Location: Site lighting

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace site lighting fixture

Qty: 10.00

Unit of Measure: Ea.

Estimate: $42,178.52

Assessor Name: Hayden Collins

Date Created: 12/15/2015

Notes: Replace ten (10) exterior HID floodlighting fixtures on the building exterior with LED type floodlighting fixtures.

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