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.

Marshall, J School

Governance	DISTRICT	Report Type	Elementary
Address	4500 Griscom St.	Enrollment	428
	Philadelphia, Pa 19124	Grade Range	'00-05'
Phone/Fax	215-537-2521 / 215-537-2847	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Marshall	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	**53.88%**	**$15,793,218**	**$29,311,400**
Building	53.43 %	$15,461,299	$28,938,728
Grounds	89.06 %	$331,919	$372,672

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	103.13 %	$511,593	$496,047
Exterior Walls (Shows condition of the structural condition of the exterior facade)	02.65 %	$57,241	$2,157,390
Windows (Shows functionality of exterior windows)	95.05 %	$1,000,566	$1,052,685
Exterior Doors (Shows condition of exterior doors)	89.21 %	$75,606	$84,753
Interior Doors (Classroom doors)	220.99 %	$453,389	$205,160
Interior Walls (Paint and Finishes)	11.10 %	$109,025	$982,545
Plumbing Fixtures	27.94 %	$220,757	$790,244
Boilers	98.67 %	$1,076,800	$1,091,262
Chillers/Cooling Towers	84.18 %	$1,204,455	$1,430,856
Radiators/Unit Ventilators/HVAC	174.27 %	$4,379,019	$2,512,766
Heating/Cooling Controls	132.68 %	$1,046,922	$789,075
Electrical Service and Distribution	110.66 %	$627,422	$566,965
Lighting	58.59 %	$1,187,565	$2,027,046
Communications and Security (Cameras, Pa System and Fire Alarm)	43.72 %	$331,961	$759,266

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

S736001;Marshall, J

Final

Site Assessment Report

January 31, 2017

PARSONS

Table of Contents

Site Executive Summary

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

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

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

Gross Area (SF):	58,450
Year Built:	1909
Last Renovation:	
Replacement Value:	$29,311,400
Repair Cost:	$15,793,217.98
Total FCI:	53.88 %
Total RSLI:	70.62 %

Description:

Facility Condition Assessment
July 2015

School District of Philadelphia
John Marshall Elementary School
4500 Griscom Street
Philadelphia, PA 19124

58,450sf / 417 students / LN 07

General

John Marshall School is located at 4500 Griscom Street. The main entrance faces Griscom Street. The building was constructed in 1909, has 58,450 square feet, and is 3 stories tall. There is a full basement. The J. Marshall School can be found on the National Historical Register, number 88002298 with the address of 1501 Sellers Street. Valerie Johnson, Acting Building Engineer, accompanied the team during the building inspection.

Architectural/Structural

Foundations appear to be constructed of concrete and brick. Joints are in fair condition with some settlement cracks observed. Some joints in the boiler room have been repointed where joint cracking occurred. In another boiler room location, brickwork is disintegrating at one of the door jambs. In the gymnasium, brick joint failure is occurring in one of the structural brick piers along a masonry opening. Cracks in masonry joints in the basement are serious and should be analyzed to determine if there is ongoing settlement of the footings to determine the appropriate means of repairing the joints. Extensive peeling paint was observed on basement walls and ceilings, mainly due to high room moisture related to excessive steam released by the boilers and a lack of general maintenance of the space. Footings were not seen and their construction type or condition could not be ascertained.

Floor slabs in the basement are concrete slabs on grade and are in good condition although covered with dirt and in need of stripping, cleaning and repainting. Upper floor slabs are also constructed of cast-in-place concrete with cast-in-place concrete beams. Cracking and spalling of the concrete structure was not observed anywhere. Upper floors and the public areas in the basement are finished with a 2'x2' (nominal size) concrete tiles which are highly durable and appear to be a monolithic system. These slabs have not been stripped and cleaned and have years of dirt sealed into the surface and corners, causing their color to be very dark and dingy. There is an especially large build-up of dirt at all corners.

Roof construction over the main building is reinforced concrete beams and deck, bearing on masonry walls. The superstructure is constructed of reinforced concrete columns, beams, and floor slabs. The main building roof deck is flat with minimum overall slope; areas around roof drains are depressed for drainage. Roof access is via a door out of a masonry penthouse. The roof over the auditorium is constructed of heavy timber trusses with wood decking. All appeared to be in good condition as observed in one area the attic space.

Exterior walls and are generally in good condition, with minimal joint cracking on walls. Lintels over windows appeared to be in good condition with little rust or cracking. There are small areas of efflorescence in some locations of the building walls, visible from the street. The basement walls form a concrete exterior element along the rear, which is painted. This concrete and the lower part of the first floor brick sections of the rear facing elevation are painted and severely peeling.There is a handicap ramp constructed of concrete block leading up from the parking area to a first floor door; there are areas of joint failure along the exposed walls of the ramp. Many brick roof-structure walls and parapets have been repointed or caulked (not a good solution) and continue to show signs of cracking and joint failure. Copper reglets in the masonry receiving the roofing counterflashing are old and have been recaulked multiple times, a potential source of water penetration. Steel ladders set into masonry for access to upper and lower roofs are severely rusted. The original copper roof cornices and overhangs have been repaired at their connections to brick walls, but the joints where the copper is set into masonry has been recently recaulked may be failing. A more detailed inspection of rooftop masonry and areas where copper flashing and reglets are located is required to repair all failing joints and ensure a watertight envelope.

Exterior windows were replaced in the 1990's with bronze anodized aluminum frame operable single hung units with single thickness clear plexiglass acrylic vision panel glazing. Basement windows have steel security gratings which have been painted and have areas of rust forming. First floor windows have newer galvanized gratings. Windows are in poor condition with oxidized frames and scratched glazing panels. Operable units have been said to be difficult to operate up and down or do not stay open due to broken internal counterbalance weights, accidentally slamming closed in some cases – a potential safety hazard. Single pane plexiglas units do not meet today's energy code requirements and are large sources of heat loss.

Exterior doors are painted steel framed flush hollow metal units with steel frames. Some doors have small glazing vision panels. Doors are in generally poor condition, have broken or non-functioning panic hardware, rusted dented panels and frames, and are not ADA compliant. There is one, ramped handicap entrance in the rear served by a ramp from the parking area. There are no elevators. All exterior steel doors and hardware systems need to be replaced.

Roof coverings on the main building flat roof consist of a ceramic granule impregnated, fully adhered rolled asphalt sheet system with asphalt flashing up onto rooftop ventilation ductwork, vents, and masonry parapets. There is copper counterflashing over the asphalt flashing. The roof membrane is in poor condition with dried cracked asphalt seen along membrane joints. There are many patched areas indicating locations of past membrane damages and possible leaks. There are some areas of ponding, but the main concern lies with the masonry terminations and failing caulking along the copper reglets. The membrane, flashing, and counterflashing embedded in brickwork covering the top of the flashing is weathered and is probably past its normal service life of 20 years. Roof openings include toilet room vents, ventilation ductwork, and roof drains. Flashing of the penetrations has been repaired multiple times and appears to be in poor condition and past its normal service life; reglets were recaulked last year to solve the problem of leaks on some of the exterior walls and it appears as if that solution worked. Limestone coping joints have also been recaulked and are now cracking, although there are no known leaks occurring along the coping. Many joint cracks in the penthouse and chimney structures have been repointed or caulked (incorrect method of repair) and may be the source of future water infiltration. There have been no new leaks reported by engineering this year.

Partitions in basements are constructed of brick masonry. The upper 3 floors of the building have plaster with wood trim on wood lath partitions both in classrooms and corridors. Between some classrooms are manually operated full height wood folding partions. They are no longer opened since they are heavy and do not move easily. Some classrooms utilized the blackboards built into these partitions, although most simply treat these folding walls as stationary walls. All walls need patching and painting. It appears as if the original stairways were open to all corridors. Concrete block enclosures and fire-rated doors have been added "years ago" to provide a fire rated stairway enclosure, required by today's building codes. These enclosures generally fit well into the building layouts on each floor.

Interior doors inside classrooms are either the original raised panel wood doors with original hardware or replacement wood doors and hardware. Most classroom doors were replaced years ago with solid core oak veneer wood doors with narrow wired glass vision panels and replacement hardware at least 20 years ago. Many wood doors regardless of age or type are damaged and have partially functional or non-functional hardware. Some interior basement doors and interior stairway doors are hollow metal in hollow metal frames with narrow wired glass vision panels; most stairway doors have UL fire rating labels. Many frames are rusted where coming in contact with floors. Doors are generally in poor condition throughout the building, are not ADA compliant, do not have ADA or proper locking hardware, and most are not fire rated where required. Stairway doors do not positively latch as required of fire rated doors. Classroom doors do not have security locking feature from inside classrooms. All doors and hardware need to be replaced.

Interior fittings/hardware include black slate chalkboards with oak chalk trays or bulletin boards integral to the original dark oak folding wall partitions built into the folding panels. These units are no longer opened as they are heavy and most hinges and bearings are not operable. Wall panels need to be replaced with sturdier, safer, fixed partitions. Original woodwork cabinetry, closets, and trim in all rooms needs refinishing/staining or refinishing/painting. Toilet room partitions have been mostly replaced with solid plastic toilet partitions. Many do not have doors. The usual sets of toilet room accessories (toilet paper dispensers, soap, paper towel or dryers, grab bars) are missing; bathrooms are not clean and have years of built up dirt. Plastic toilet room partitions should be assessed for condition and repaired. New toilet room accessories are required. All toilet rooms require a thorough cleaning and painting.

Stair construction for two of the three building stairways consists of concrete treads, risers, and stringers with wood handrails (29" high), guards (36" high), and steel balusters with 3" spacing. Since handrail and guard heights are not in compliance with today's codes, new handrail and guard systems are required. The stairway on the Penn Street side of the building has a triple drinking fountain and indirect plumbing drain in the lowest level stair enclosure. Drinking fountains are not allowed in stairways. This is a code violation - the drinking fountain must be removed and relocated to another area of the building outside the stairway. One of the three building stairs was recently replaced with a steel stair with steel handrails 36" high, guards 42" high, and steel balusters at 4" spacing, which complies with today's codes, although handrail extensions were not provided.

Wall finishes in the basement consist of a glazed brick wainscot, 4 feet high and painted brick above. The upper 3 floors are plaster throughout which is cracked with surface crazing in a number of classroom and corridor locations. There is damage in most classrooms at doorways and corners. Moveable partitions between some classrooms are folding oak that have been repainted to improve the appearance; they are treated as fixed walls. Blackboards are embedded into wood panels. This building does not have a separate auditorium element, like some of the other schools constructed in later years in this style. Some classrooms and stairways have heavily damaged plaster resulting from past roof leaks. It was indicated that repairs to the roof were recently made and that it is believed that there are no longer any roof leaks; these damaged plaster surfaces should now be repaired. Gang Toilet Rooms have been "recently" refinished and have ceramic tile wainscot walls with plaster above. Upstairs toilet rooms in classrooms and in the halls have plaster walls. Toilet room walls need patching and repainting.

Floor finishes in the original building consist of mostly dark stained oak floors in classrooms, the gym/cafeteria, and the auditorium. Most are in good enough condition to be stripped, sanded, and refinished. There are some rooms (main office) with 12"x12" vinyl composition tile (VCT) over the wood. All wood floors need to be stripped and refinished to remove years of wax and dirt buildup; 12"x12" VCT floors need to be removed and replaced. Stairs walking surfaces are finished in exposed concrete that has years of dirt ground into the surfaces; these should be stripped, cleaned and resealed. The boys and girls "gang toilet rooms" in the basement have waxed concrete floors. The upstairs bathrooms in classrooms have ceramic mosaic tile floors. Toilet rooms need a thorough cleaning.

Ceiling finishes are mostly exposed plaster throughout the original building with suspended 1x4 fluorescent lighting fixtures in classrooms and surface mounted 2x4 fluorescent lighting fixtures in hallways. Minor cracking is evident in the plaster ceilings throughout the building. The main office has a 2x4 suspended acoustical tile ceiling system with recessed 2x4 fluorescent lighting fixtures, in relatively good condition.

There is no elevator in this school. A new hydraulic elevator should be provided.

Furnishings such as built in casework and cubbies in classrooms and the main office have been repainted at least once. They should be replaced with new casework. There is no auditorium.

Grounds

Paving and parking is constructed of concrete and brick. The paved area is used as partially as a parking lot but mostly as a playground. The number of required parking spaces for school staff is unknown, but there appears to be a very limited number of parking spaces available for teachers and staff. The western section of the playground has settled noticeably and collects water; this includes the small section of brick paving. This area should be removed, regraded and repaved. Stairways into the building from the playground/parking area are constructed of limestone blocks (tread/riser) with grouted joints between blocks; although stairs are only 1 to 2 risers in height, they all need regrouting between the limestone blocks. Parking and play area striping is worn and almost invisible, meaning there is no clear demarcation between play areas and parking; restriping is required.

Fencing is painted wrought iron and is rusted throughout most of the fence area. Some sections are bent and fence gates need replacement. There are some damaged and bent fence panels in need of replacement. The structural condition of the fence appears to be good and a complete repainting should rejuvenate the fence. The steel pipe handrails along the handicap ramp in rear parking and playground area and up front stairs needs resetting into the concrete and repainting.

Concrete retaining wall along Gillingham Street has some cracking and spalling which needs to be repaired. The concrete coping through which the fence is attached is spalling is some locations; the fence posts needs to be re-set into new concrete coping units.

There is no landscaping.

Mechanical

Plumbing Fixtures – It appears that the plumbing fixtures were replaced approximately within the past 15 years. Fixtures in the restrooms on each floor consist of wall mounted water closets, wall hung urinals, and lavatories with wheel handle faucets. All of the bathrooms, other than the gang bathrooms in the basement, need to be remodeled but the existing fixtures can be reused. The plumbing fixtures appear to be in satisfactory condition and should not need replacement within the next 10 years.

Drinking fountains in the corridors and outside the restrooms (and in the stairwells) are wall hung with integral refrigerated coolers. Most appear to be beyond their service life. Replacement of all drinking fountains is recommended.

Janitor closets are available throughout the building and appear to have been updated 20-30 years ago. The Cafeteria-area has one two-compartment stainless steel sink with lever operated faucets and no sanitizing basin or chemicals. Janitor closets and plumbing therein should be replaced. The kitchen plumbing fixtures appear to be in satisfactory condition and should not need replacement within the next 10 years.

Domestic Water Distribution - Domestic water distribution piping is primarily soldered copper with some steel pipe throughout. Water service enters the building in the basement, with backflow preventers and the water meter on the main line after entering the building. The domestic water distribution piping should be inspected and failing sections repaired.

One natural gas fired A.O. Smith vertical water heater tank is installed in the basement with appropriate piping, controls, and venting. The water heater appears to be in satisfactory condition and should not need replacement within the next 10 years.

Sanitary Waste - The sanitary waste piping systems are constructed of threaded cast iron. The entire sanitary system appears to be comprised of the originally installed equipment and is well beyond its serviceable life. Inspection of the entire sanitary system throughout the main building is recommended and full replacement will most likely be required.

Rain Water Drainage - The rain water drains from the roof are routed through vertical piping located in mechanical chases in the building. There are no roof overflow drains. The District should consider adding overflow scuppers to the building to protect the roof from flooding.

Energy Supply - Duplex fuel oil supply pumps provide the required fuel to the boilers when operating on fuel oil. The concrete fuel tank is located in the basement adjacent to the fuel oil pumps. The pumps appear to be beyond their serviceable life and should be replaced. Inspection of the concrete fuel tank is required. Additional ventilation and a fire suppression/fire alarm system for the fuel storage area are required. It also should be noted that there are natural gas lines pipe to the boilers but no natural gas supplied, i.e. the line does not connect to anything. It was indicated by the utility company to the building engineer that there is insufficient gas

supply for these boilers.

Heat Generating Systems - Steam is generated in the main building by two Weil McLain 94 series 3 oil fired boilers that appear to be installed in the 1970s. The boilers have Power Flame dual fuel burners. The boilers are currently leaking and the burners appear to be at the end of their serviceable life. The boilers and burners should be replaced.

Distribution Systems - Boiler feed water is treated with a combination of chemicals, controlled with a Culligan water treatment controller. This system has a condensate receiver with duplex pumps feeding the boiler. The condensate receiver package appears to be approximately 10 years old and should not need replacement for the next 10 years. The steam and condensate return lines are only occasionally insulated and are beyond their serviceable life. The steam and condensate return lines should be inspected and damaged sections replaced.

Ventilation and heating for the building is provided by a new house fan replacing the old, failed existing house fan air handler in the basement. There are also radiators in the hallway, bathrooms, library, the gym/cafeteria and the auditorium, but none in the classrooms. Air is forced into most rooms of the building through ducts built into the walls. Air is exhausted from the rooms by separate ducts also built into the walls; the air travels up through ducts to attic space and out of the building through roof mounted vents. Presently, the only fresh air that the building receives is when the system is running. This is an acceptable fresh air delivery system as long as it is operated correctly. It is recommended to operate the fan continuously to be able to supply the minimum required outside air and modulate the heating of the rooms. It is also recommended to install heat pumps to condition the gym/cafeteria and the auditorium.

The bathrooms throughout the building do not have functional exhaust fans; it is required to install exhaust in all of the bathrooms. The majority of the radiators in the building appear to be the originally installed equipment. It is also recommended to replace all of the original steam radiators with hot water radiators as they are well beyond their service life.

Terminal & Package Units – Approximately 1/4 of the rooms in the building have window air conditioning units and most of the units are in operation. New air conditioning systems should be installed to serve the remainder of the classrooms. There is a Mitsubishi ductless mini-split system for the server room. This unit could not be inspected.

Controls & Instrumentation - There are some pneumatic thermostats on the walls that are not in service. The pneumatic control valves on the radiators are not in service. Most of the heating radiators are operating at 100% flow when the steam is on. The house fan with steam coils is either on full speed or off. This results in an "on-off" control for the whole building; when the boilers are on, the whole building has heat and when the boilers are off, the whole building is without heat. This creates a generally uncomfortable environment in the building. A new DDC system should be added to the main building for better heat control. Also, controls should be included for each room to provide modulation and individual temperature control (a thermostat and damper at a minimum).

Sprinklers - There are no sprinklers in the building. A new sprinkler system should be installed.

Electrical

Site Electrical Service for the building is provided from medium voltage overhead lines on a wooden utility pole along Sellers St. Two pole-mounted step down power transformers (13,200-240/120volt) provide power to the building which enters at the electrical service entrance; the equipment in this space includes a utility disconnect switch, utility metering and main distribution panel. The electrical service entrance is located in the teacher lounge room at the basement of the building. A 400A, 240/120V, 2 phase, 5-wire distribution panelboard feeds the lighting and power panel boards throughout the building. A 75KVA phase converter, converts (2-240 volt single phase to 208/120 3-phase). It is installed in boiler room in order to feed the boilers and other 208 volt electrical loads. Our observation shows that this system exceeds their useful life and the majority of the conductors are obsolete and should be replaced. The system does not have capacity for any future loads.

Distribution System and Raceway System in the building consists of 400A, 240/120V 2-phase, 5-wire main distribution panelboards and several other lighting and power panels located throughout the building. Each floor contains of two old panelboards for lighting and receptacles and one new power panel for feeding the window mounted AC units. Existing main distribution panel and all lighting/receptacle panelboards along with the associated wiring have exceeded the end of their useful life and should be replaced. As recommended by Building Owners and Managers (BOMA) International, such a panelboards shall be replaced with panelboards having more circuit breakers to accommodate additional branch circuits that might be needed in the future.

Receptacles are not provided in adequate numbers in classrooms, computer room, etc. A minimum of two receptacles in each wall of each classroom is required. Adding a wire-mold system with receptacles every three feet is recommended for the computer room.

Lighting- The majority of lighting fixtures in the building are 2x4 lay in grid or surface mounted fluorescent fixtures with outdated T12 lamps. 1x4 surface or flush mounted fluorescent lighting fixtures are also used in some areas. The existing lighting system is old and outdated and should be replaced. The lighting fixtures in boiler room were recently upgraded and do not need to be replaced.

Fire Alarm System consists of a 120V manual fire alarm system made by Couch Company. The company has been out of business since 1985 and spare parts have not been available since 2003. The existing system does not meet current fire alarm codes and must be replaced.

Telephone and LAN equipment/devices are located in Faculty Lounge Room. The computer room, some classrooms, and offices have data outlets. The telephone and Local Area Network system is generally adequate.

Public address / music service are not provided by separate systems in this school. The telephone system is used for public announcements. This system is working adequately.

Intercom System and paging is functioning adequately. The paging system is consists of a one way communication system from the office to all classrooms. Two way communications is achieved through wall mounted phones in the classrooms and other areas.

Clock and program system is working properly.

Television System is not provided in the school.

Security System, access control, and video surveillance with an intrusion alarm are installed in the school and working adequately.

Emergency power systems (backup power generator) are not provided in this school.

UPS (uninterruptable power supply) is provided for the Local Area Network.

Elevator is not provided in the school.

Emergency Lighting System / Exit Lighting fixtures are old and inadequate. A new, Life-Safety Code compliant, emergency lighting system should be provided.

Lightning Protection System is adequate, accomplished with air terminals mounted on the chimney; however, some repairs are needed. A study is needed to verify that the air terminals provide the proper coverage.

Grounding system is present and appears to be adequate.

Site Lighting System is adequate.

Site Video Surveillance system is provided and monitored a closed circuit camera system. It appears to be operating adequately.

Site Paging System is provided and seems to be operating adequately.

RECOMMENDATIONS

Architectural

- Repair cracked brick foundation pier in basement
- Strip and repaint concrete foundation (basement) walls in mechanical rooms
- Clean and repaint basement floor in mechanical rooms
- Clean and reseal concrete floors in hallways and stairways
- Replace all exterior windows with insulated single hung units
- Replace all exterior doors with ADA and code compliant exit hardware
- Repaint exposed above-ground foundation facing playground/parking area
- Remove and replace existing flat roof and insulation; 4 levels
- Replace flashing and counterflashing of roof
- Repoint brick structures and parapets in area of roof

- Remove and replace all wood interior doors, frames and hardware in classrooms, closets, offices, etc.
- Provide security hardware and lever handles for classrooms and offices, locking from inside classroom.
- Remove and replace all basement steel doors, frames, and hardware in mechanical rooms and stairways
- Remove folding wood partitions; replace with gypsum board and metal stud walls
- Provide toilet room accessories
- Repair and repaint interior plaster walls where damaged
- Remove and replace stairway handrails and guards with code compliant systems
- Regrout all joints between limestone block tread/risers at exterior stairs
- Strip, sand, repair and refinish all wood floors in classrooms
- Remove and replace all 12”x12” VCT floors
- Strip and refinish concrete
- Repaint plaster and concrete ceilings in the building where damaged
- New cubbies and storage units
- Add elevator to serve 4 floors (basement - 3rd floor)

Grounds

- Remove existing concrete and repave concrete parking / playground area (6,000sf)
- Replace concrete coping stones, reset fenceposts (100 ft)
- Repaint wrought iron fencing (500ft x 4ft = 2000sf)
- Replace bent iron fence (300sf)
- Replace 2 gates in wrought iron fence
- Repair concrete retaining wall along Gillingham St and HC ramp (1000sf)
- Repaint HC railing on ramp (150ft)

Mechanical

- Replace all drinking fountains in the building
- Plumbing in janitors closets should be replaced
- Inspect sanitary system throughout the main building.
- The domestic water distribution piping should be inspected and failing sections repaired.
- Replace duplex fuel oil pumps and skid
- Add overflow scuppers to roof parapet
- Perform an inspection of the concrete fuel tank
- Install the required ventilation and fire suppression/alarm in the fuel storage area
- The boilers appear to be at the end of their serviceable life and should be replaced within the next 5 years
- Perform testing to identify and replace damaged steam and condensate piping.
- It is required to install an exhaust air system in all of the bathrooms
- Install AHU to condition the cafeteria/gym
- Provide new air conditioning systems for the classrooms
- Install a new DDC system for heat and ventilation control
- Install a new sprinkler system

Electrical

- Upgrade the existing electrical service with new electrical service. Replace the existing switchboard with new 1200A, 208/120V switchboard.
- Replace the entire distribution system with new panel boards and new feeders. Provide arc flush label on the all panel boards. Estimated, 1 main distribution and 15 lighting/receptacle panel boards.
- Install minimum two receptacles in each wall of classrooms and sufficient number of receptacles in other areas per NEC. We recommend adding a two-compartment surface mounted raceway, for data & power, for the computer lab room.
- Replace all lighting fixtures with new fluorescent lighting fixtures using T-5 lamps.
- Replace existing fire alarm system with a new automatic Fire Alarm System including control panel, initiated devices in corridors, air ducts, electrical and LAN rooms, library, and computer rooms. Provide notification devices in class rooms, offices, auditorium, corridors, other area recommended by codes.
- Install a new emergency power system including 100KW diesel generator and respective transfer switch.
- Provide emergency power to sufficient number of lighting fixtures in corridors, hallways, stairways and other egress ways to get minimum 1fc at egress ways per code.
- Perform lightning protection studies to ascertain adequacy of existing systems.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 1 / Tm 2
Status:	Accepted by SDP	Team:	Tm 2
Site ID:	S736001		

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	52.00 %	0.00 %	$0.00
A20 - Basement Construction	52.00 %	0.00 %	$0.00
B10 - Superstructure	20.77 %	0.00 %	$0.00
B20 - Exterior Enclosure	69.65 %	34.40 %	$1,133,413.02
B30 - Roofing	110.00 %	103.13 %	$511,592.55
C10 - Interior Construction	73.07 %	36.17 %	$518,836.06
C20 - Stairs	52.00 %	114.68 %	$94,514.88
C30 - Interior Finishes	107.75 %	22.09 %	$643,324.21
D10 - Conveying	105.71 %	322.14 %	$670,322.07
D20 - Plumbing	106.34 %	68.49 %	$817,497.17
D30 - HVAC	78.04 %	118.54 %	$7,707,195.45
D40 - Fire Protection	105.71 %	177.49 %	$836,154.77
D50 - Electrical	110.11 %	70.44 %	$2,420,082.49
E10 - Equipment	21.99 %	0.00 %	$0.00
E20 - Furnishings	12.50 %	87.04 %	$108,366.06
G20 - Site Improvements	28.60 %	122.74 %	$331,919.25
G40 - Site Electrical Utilities	27.22 %	0.00 %	$0.00
Totals:	**70.62 %**	**53.88 %**	**$15,793,217.98**

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)
B736001;Marshall, J	58,450	53.43	$2,255,393.28	$6,461,318.75	$863,706.83	$0.00	$5,880,879.87
G736001;Grounds	17,600	89.06	$191,806.51	$130,323.73	$9,789.01	$0.00	$0.00
Total:		**53.88**	**$2,447,199.79**	**$6,591,642.48**	**$873,495.84**	**$0.00**	**$5,880,879.87**

Deficiencies By Priority

- 1 - Response Time (< 2 yr) - $2,447,199.79
- 2 - Response Time (2-3 yrs) - $6,591,642.48
- 3 - Response Time (3-4 yrs) - $873,495.84
- 4 - Response Time (4-5 yrs)
- 5 - Response Time (> 5 yrs) - $5,880,879.87

Budget Estimate Total: $15,793,217.98

Executive Summary

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

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

Function:	Elementary School
Gross Area (SF):	58,450
Year Built:	1909
Last Renovation:	
Replacement Value:	$28,938,728
Repair Cost:	$15,461,298.73
Total FCI:	53.43 %
Total RSLI:	71.16 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B736001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S736001		

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	52.00 %	0.00 %	$0.00
A20 - Basement Construction	52.00 %	0.00 %	$0.00
B10 - Superstructure	20.77 %	0.00 %	$0.00
B20 - Exterior Enclosure	69.65 %	34.40 %	$1,133,413.02
B30 - Roofing	110.00 %	103.13 %	$511,592.55
C10 - Interior Construction	73.07 %	36.17 %	$518,836.06
C20 - Stairs	52.00 %	114.68 %	$94,514.88
C30 - Interior Finishes	107.75 %	22.09 %	$643,324.21
D10 - Conveying	105.71 %	322.14 %	$670,322.07
D20 - Plumbing	106.34 %	68.49 %	$817,497.17
D30 - HVAC	78.04 %	118.54 %	$7,707,195.45
D40 - Fire Protection	105.71 %	177.49 %	$836,154.77
D50 - Electrical	110.11 %	70.44 %	$2,420,082.49
E10 - Equipment	21.99 %	0.00 %	$0.00
E20 - Furnishings	12.50 %	87.04 %	$108,366.06
Totals:	**71.16 %**	**53.43 %**	**$15,461,298.73**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
A1010	Standard Foundations	$18.40	S.F.	58,450	100	1909	2009	2067	52.00 %	0.00 %	52			$1,075,480
A1030	Slab on Grade	$7.73	S.F.	58,450	100	1909	2009	2067	52.00 %	0.00 %	52			$451,819
A2010	Basement Excavation	$6.55	S.F.	58,450	100	1909	2009	2067	52.00 %	0.00 %	52			$382,848
A2020	Basement Walls	$12.70	S.F.	58,450	100	1909	2009	2067	52.00 %	0.00 %	52			$742,315
B1010	Floor Construction	$75.10	S.F.	58,450	100	1909	2009	2030	15.00 %	0.00 %	15			$4,389,595
B1020	Roof Construction	$13.88	S.F.	58,450	100	1909	2009	2067	52.00 %	0.00 %	52			$811,286
B2010	Exterior Walls	$36.91	S.F.	58,450	100	1909	2009	2067	52.00 %	2.65 %	52		$57,240.95	$2,157,390
B2020	Exterior Windows	$18.01	S.F.	58,450	40	1980	2020	2057	105.00 %	95.05 %	42		$1,000,566.31	$1,052,685
B2030	Exterior Doors	$1.45	S.F.	58,450	25	1985	2010	2035	80.00 %	89.21 %	20		$75,605.76	$84,753
B3010105	Built-Up	$37.76	S.F.	13,116	20	1985	2005	2037	110.00 %	103.30 %	22		$511,592.55	$495,260
B3010120	Single Ply Membrane	$38.73	S.F.	0	20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.	0	30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$38.73	S.F.	0	25				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	13,116	20	1909	1929	2037	110.00 %	0.00 %	22			$787
C1010	Partitions	$17.91	S.F.	58,450	100	1909	2009	2067	52.00 %	5.11 %	52		$53,470.79	$1,046,840
C1020	Interior Doors	$3.51	S.F.	58,450	40	1909	1949	2067	130.00 %	220.99 %	52		$453,388.87	$205,160
C1030	Fittings	$3.12	S.F.	58,450	40	1909	1949	2067	130.00 %	6.57 %	52		$11,976.40	$182,364
C2010	Stair Construction	$1.41	S.F.	58,450	100	1909	2009	2067	52.00 %	114.68 %	52		$94,514.88	$82,415

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System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3010230	Paint & Covering	$14.18	S.F.	58,450	10	1909	1919	2027	120.00 %	13.15 %	12		$109,024.95	$828,821
C3010231	Vinyl Wall Covering	$0.00	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.	58,450	30	1995	2025	2027	40.00 %	0.00 %	12			$153,724
C3020411	Carpet	$7.30	S.F.	0	10				0.00 %	0.00 %				$0
C3020412	Terrazzo & Tile	$75.52	S.F.	500	50	1909	1959	2067	104.00 %	0.00 %	52			$37,760
C3020413	Vinyl Flooring	$9.68	S.F.	7,950	20	1985	2005	2037	110.00 %	101.34 %	22		$77,988.88	$76,956
C3020414	Wood Flooring	$22.27	S.F.	24,000	25	1909	1934	2042	108.00 %	48.35 %	27		$258,406.56	$534,480
C3020415	Concrete Floor Finishes	$2.11	S.F.	26,000	50	1909	1959	2067	104.00 %	273.48 %	52		$150,033.54	$54,860
C3030	Ceiling Finishes	$20.97	S.F.	58,450	25	1909	1934	2042	108.00 %	3.91 %	27		$47,870.28	$1,225,697
D1010	Elevators and Lifts	$3.56	S.F.	58,450	35			2052	105.71 %	322.14 %	37		$670,322.07	$208,082
D2010	Plumbing Fixtures	$13.52	S.F.	58,450	35	1909	1944	2052	105.71 %	27.94 %	37		$220,756.86	$790,244
D2020	Domestic Water Distribution	$1.68	S.F.	58,450	25	1909	1934	2042	108.00 %	301.63 %	27		$296,186.78	$98,196
D2030	Sanitary Waste	$2.90	S.F.	58,450	25	1909	1934	2042	108.00 %	146.43 %	27		$248,214.20	$169,505
D2040	Rain Water Drainage	$2.32	S.F.	58,450	30	1909	1939	2047	106.67 %	38.60 %	32		$52,339.33	$135,604
D3020	Heat Generating Systems	$18.67	S.F.	58,450	35	1909	1944	2052	105.71 %	98.67 %	37		$1,076,799.74	$1,091,262
D3030	Cooling Generating Systems	$24.48	S.F.	58,450	30				0.00 %	84.18 %			$1,204,454.53	$1,430,856
D3040	Distribution Systems	$42.99	S.F.	58,450	25	1909	1934	2042	108.00 %	174.27 %	27		$4,379,019.43	$2,512,766
D3050	Terminal & Package Units	$11.60	S.F.	58,450	20	1955	1975	2025	50.00 %	0.00 %	10			$678,020
D3060	Controls & Instrumentation	$13.50	S.F.	58,450	20	1909	1929	2037	110.00 %	132.68 %	22		$1,046,921.75	$789,075
D4010	Sprinklers	$7.05	S.F.	58,450	35			2052	105.71 %	202.91 %	37		$836,154.77	$412,073
D4020	Standpipes	$1.01	S.F.	58,450	35			2052	105.71 %	0.00 %	37			$59,035
D5010	Electrical Service/Distribution	$9.70	S.F.	58,450	30	1909	1939	2047	106.67 %	110.66 %	32		$627,421.95	$566,965
D5020	Lighting and Branch Wiring	$34.68	S.F.	58,450	20	1909	1929	2037	110.00 %	58.59 %	22		$1,187,565.02	$2,027,046
D5030	Communications and Security	$12.99	S.F.	58,450	15	1909	1924	2032	113.33 %	43.72 %	17		$331,961.36	$759,266
D5090	Other Electrical Systems	$1.41	S.F.	58,450	30	1909	1939	2047	106.67 %	331.41 %	32		$273,134.16	$82,415
E1020	Institutional Equipment	$4.82	S.F.	58,450	35	1909	1944	2022	20.00 %	0.00 %	7			$281,729
E1090	Other Equipment	$11.10	S.F.	58,450	35	1909	1944	2023	22.86 %	0.00 %	8			$648,795
E2010	Fixed Furnishings	$2.13	S.F.	58,450	40	1909	1949	2020	12.50 %	87.04 %	5		$108,366.06	$124,499
								Total	**71.16 %**	**53.43 %**			**$15,461,298.73**	**$28,938,728**

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 plaster, concrete or brick 96%
ceramic wall tile in renovated toilet rooms 2%
glazed brick 2%

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

Note:
ceramic tile in toilet rooms 1%
vinyl tile (VCT) 14%
stained oak wood floor 40%
concrete (sealed) 45%

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

Note:
painted plaster or concrete 95%
acoustical tile ceiling 5%

Renewal Schedule

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

Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$15,461,299**	**$0**	**$0**	**$0**	**$0**	**$158,760**	**$0**	**$381,140**	**$904,062**	**$0**	**$1,002,322**	**$17,907,584**
*** A - Substructure**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A10 - Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1010 - Standard Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1030 - Slab on Grade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A20 - Basement Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2010 - Basement Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2020 - Basement Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$57,241	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$57,241**
B2020 - Exterior Windows	$1,000,566	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,000,566**
B2030 - Exterior Doors	$75,606	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$75,606**
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	$511,593	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$511,593**
B3010120 - Single Ply Membrane	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010130 - Preformed Metal Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010140 - Shingle & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3020 - Roof Openings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C - Interiors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C10 - Interior Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1010 - Partitions	$53,471	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$53,471**

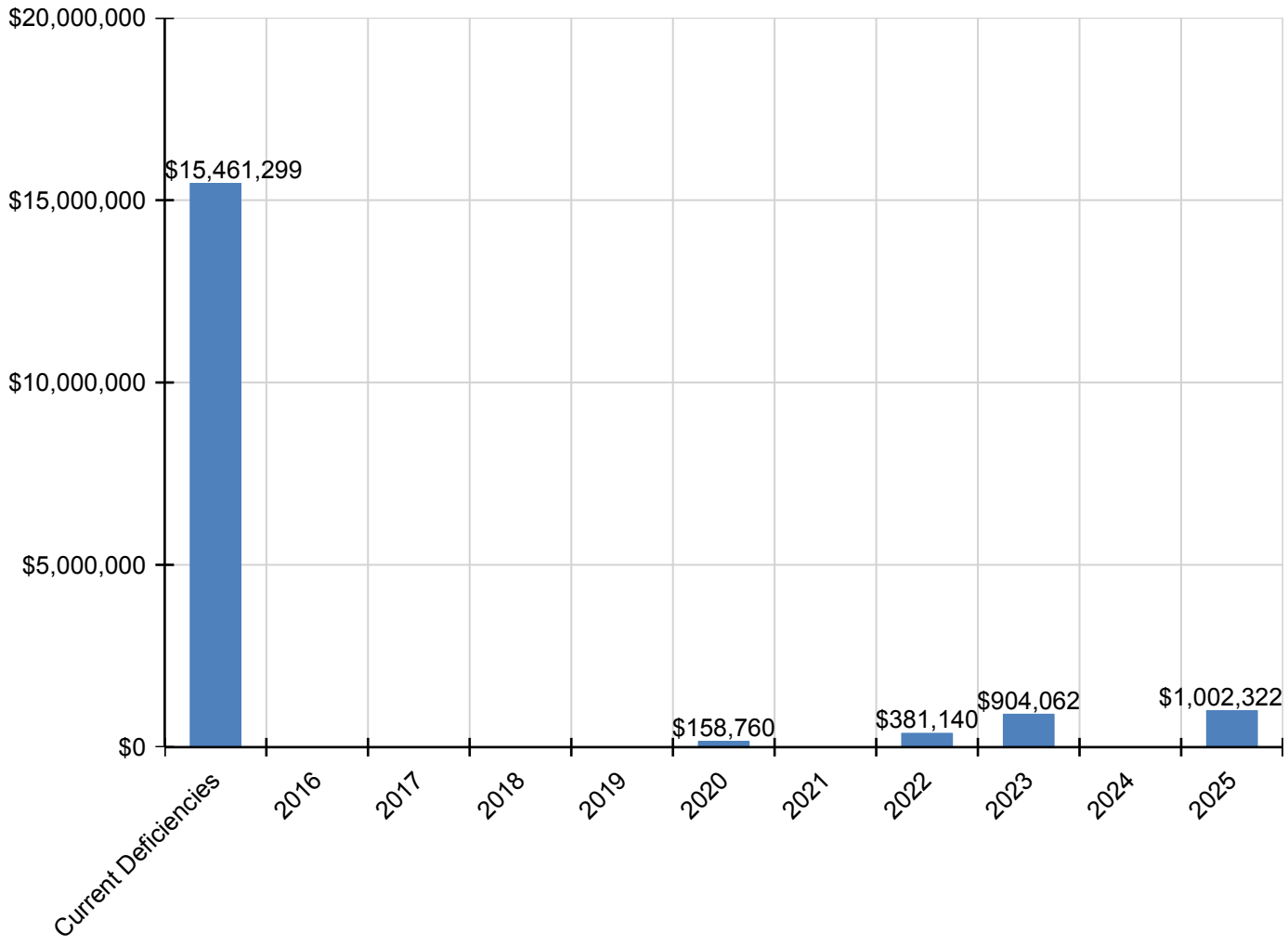
C1020 - Interior Doors	$453,389	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$453,389**
C1030 - Fittings	$11,976	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$11,976**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$94,515	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$94,515**
C30 - Interior Finishes	$0	$0	$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	$109,025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$109,025**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$77,989	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$77,989**
C3020414 - Wood Flooring	$258,407	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$258,407**
C3020415 - Concrete Floor Finishes	$150,034	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$150,034**
C3030 - Ceiling Finishes	$47,870	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$47,870**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D10 - Conveying	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D1010 - Elevators and Lifts	$670,322	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$670,322**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$220,757	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$220,757**
D2020 - Domestic Water Distribution	$296,187	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$296,187**
D2030 - Sanitary Waste	$248,214	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$248,214**
D2040 - Rain Water Drainage	$52,339	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$52,339**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$1,076,800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,076,800**
D3030 - Cooling Generating Systems	$1,204,455	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,204,455**
D3040 - Distribution Systems	$4,379,019	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,379,019**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,002,322	**$1,002,322**
D3060 - Controls & Instrumentation	$1,046,922	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,046,922**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$836,155	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$836,155**
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	$627,422	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$627,422**
D5020 - Lighting and Branch Wiring	$1,187,565	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,187,565**
D5030 - Communications and Security	$331,961	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$331,961**
D5090 - Other Electrical Systems	$273,134	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$273,134**
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	$381,140	$0	$0	$0	**$381,140**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$904,062	$0	$0	**$904,062**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$108,366	$0	$0	$0	$0	$158,760	$0	$0	$0	$0	$0	**$267,126**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

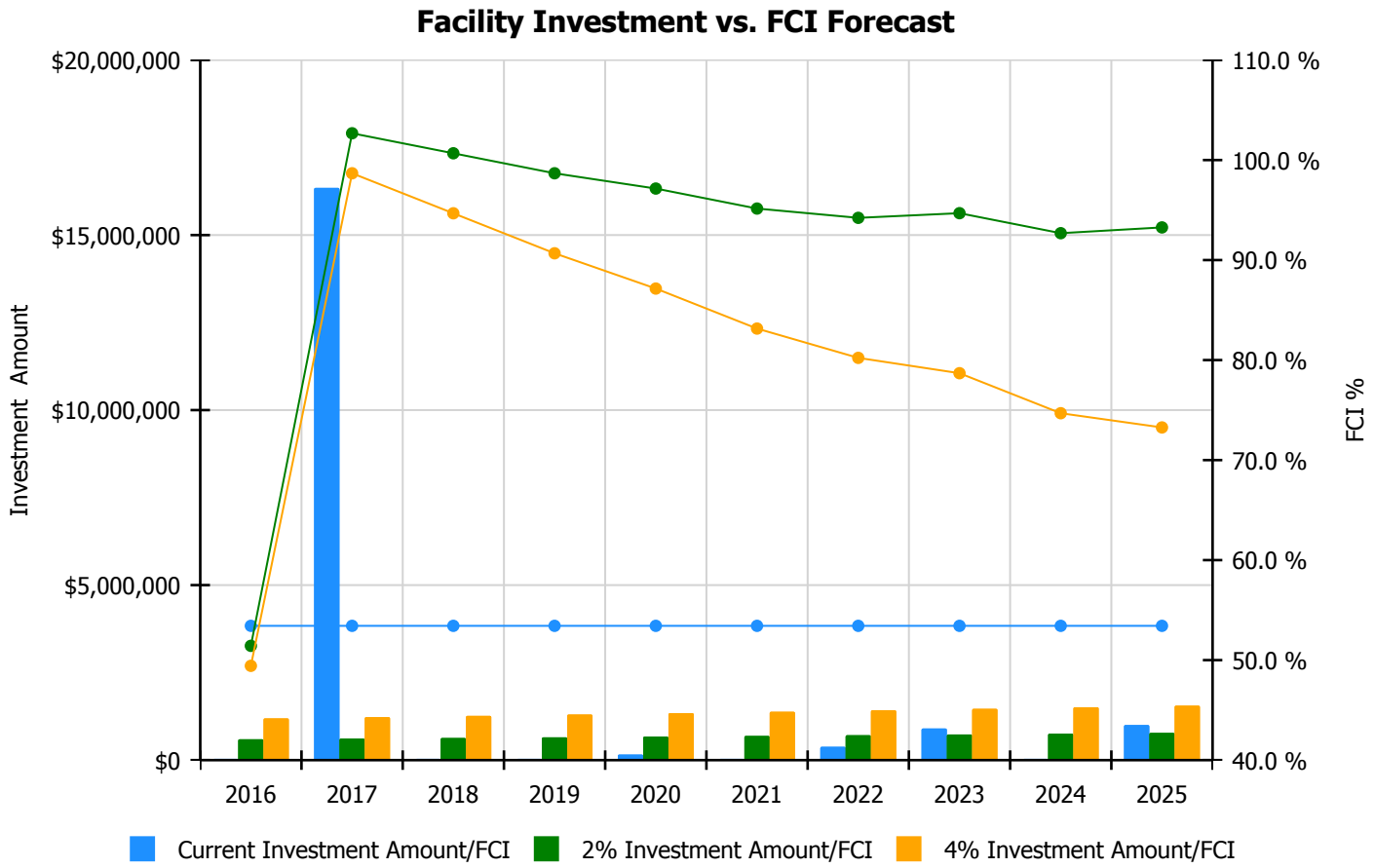
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

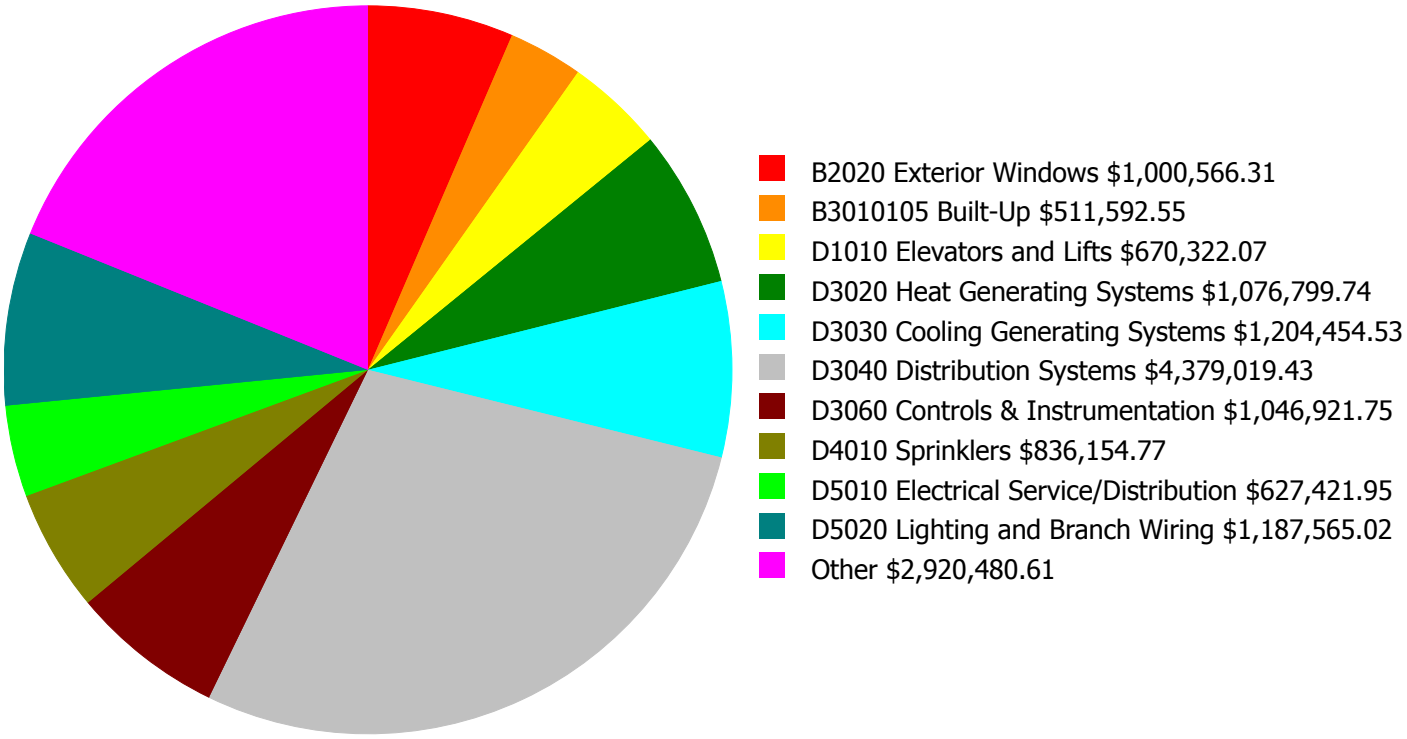
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 53.43%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$596,138.00	51.43 %	$1,192,276.00	49.43 %
2017	$16,348,174	$614,022.00	102.68 %	$1,228,044.00	98.68 %
2018	$0	$632,443.00	100.68 %	$1,264,885.00	94.68 %
2019	$0	$651,416.00	98.68 %	$1,302,832.00	90.68 %
2020	$158,760	$670,958.00	97.15 %	$1,341,917.00	87.15 %
2021	$0	$691,087.00	95.15 %	$1,382,174.00	83.15 %
2022	$381,140	$711,820.00	94.22 %	$1,423,639.00	80.22 %
2023	$904,062	$733,174.00	94.69 %	$1,466,349.00	78.69 %
2024	$0	$755,170.00	92.69 %	$1,510,339.00	74.69 %
2025	$1,002,322	$777,825.00	93.26 %	$1,555,649.00	73.26 %
Total:	**$18,794,459**	**$6,834,053.00**		**$13,668,104.00**	

Deficiency Summary by System

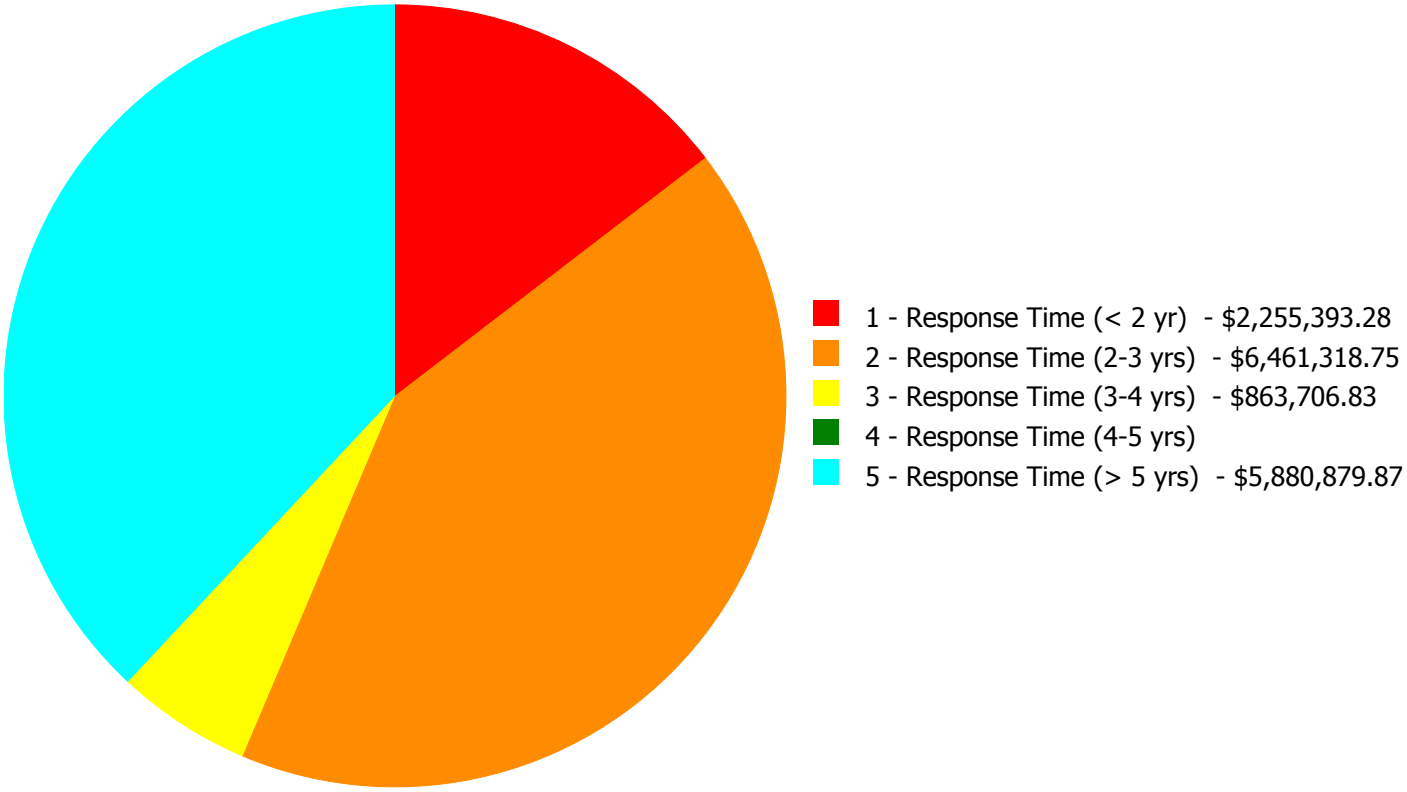
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $15,461,298.73

Deficiency Summary by Priority

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



Budget Estimate Total: $15,461,298.73

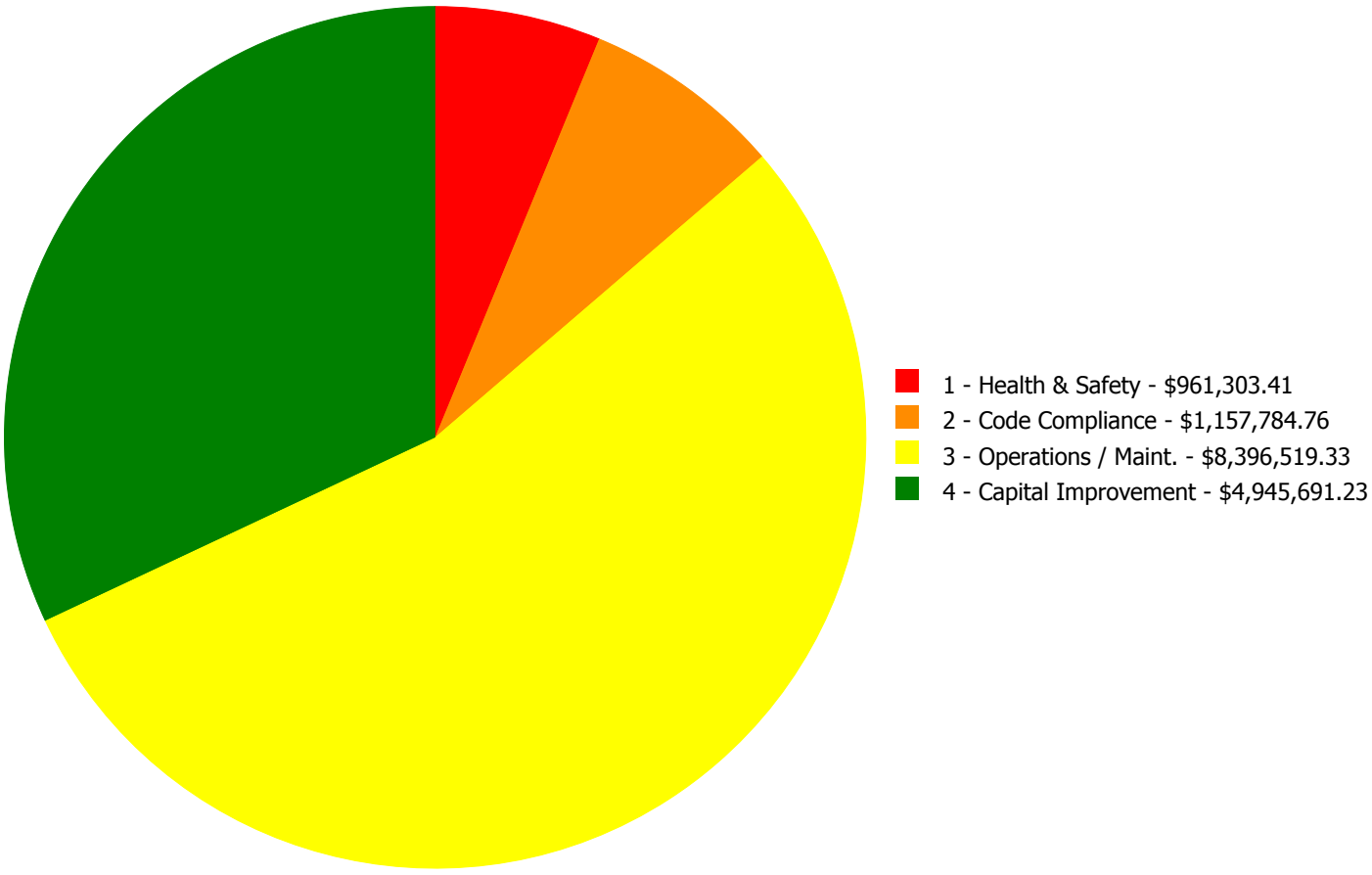
Deficiency By Priority Investment Table

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	$6,457.90	$50,783.05	$0.00	$0.00	$0.00	$57,240.95
B2020	Exterior Windows	$0.00	$1,000,566.31	$0.00	$0.00	$0.00	$1,000,566.31
B2030	Exterior Doors	$0.00	$75,605.76	$0.00	$0.00	$0.00	$75,605.76
B3010105	Built-Up	$67,196.09	$444,396.46	$0.00	$0.00	$0.00	$511,592.55
C1010	Partitions	$0.00	$53,470.79	$0.00	$0.00	$0.00	$53,470.79
C1020	Interior Doors	$0.00	$453,388.87	$0.00	$0.00	$0.00	$453,388.87
C1030	Fittings	$0.00	$11,976.40	$0.00	$0.00	$0.00	$11,976.40
C2010	Stair Construction	$93,618.16	$896.72	$0.00	$0.00	$0.00	$94,514.88
C3010230	Paint & Covering	$0.00	$109,024.95	$0.00	$0.00	$0.00	$109,024.95
C3020413	Vinyl Flooring	$0.00	$77,988.88	$0.00	$0.00	$0.00	$77,988.88
C3020414	Wood Flooring	$0.00	$258,406.56	$0.00	$0.00	$0.00	$258,406.56
C3020415	Concrete Floor Finishes	$0.00	$150,033.54	$0.00	$0.00	$0.00	$150,033.54
C3030	Ceiling Finishes	$0.00	$0.00	$47,870.28	$0.00	$0.00	$47,870.28
D1010	Elevators and Lifts	$0.00	$670,322.07	$0.00	$0.00	$0.00	$670,322.07
D2010	Plumbing Fixtures	$0.00	$220,756.86	$0.00	$0.00	$0.00	$220,756.86
D2020	Domestic Water Distribution	$0.00	$0.00	$0.00	$0.00	$296,186.78	$296,186.78
D2030	Sanitary Waste	$0.00	$0.00	$248,214.20	$0.00	$0.00	$248,214.20
D2040	Rain Water Drainage	$0.00	$52,339.33	$0.00	$0.00	$0.00	$52,339.33
D3020	Heat Generating Systems	$0.00	$1,050,121.66	$0.00	$0.00	$26,678.08	$1,076,799.74
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$1,204,454.53	$1,204,454.53
D3040	Distribution Systems	$0.00	$293,991.37	$567,622.35	$0.00	$3,517,405.71	$4,379,019.43
D3060	Controls & Instrumentation	$0.00	$1,046,921.75	$0.00	$0.00	$0.00	$1,046,921.75
D4010	Sprinklers	$0.00	$0.00	$0.00	$0.00	$836,154.77	$836,154.77
D5010	Electrical Service/Distribution	$627,421.95	$0.00	$0.00	$0.00	$0.00	$627,421.95
D5020	Lighting and Branch Wiring	$1,187,565.02	$0.00	$0.00	$0.00	$0.00	$1,187,565.02
D5030	Communications and Security	$0.00	$331,961.36	$0.00	$0.00	$0.00	$331,961.36
D5090	Other Electrical Systems	$273,134.16	$0.00	$0.00	$0.00	$0.00	$273,134.16
E2010	Fixed Furnishings	$0.00	$108,366.06	$0.00	$0.00	$0.00	$108,366.06
	Total:	$2,255,393.28	$6,461,318.75	$863,706.83	$0.00	$5,880,879.87	$15,461,298.73

Deficiency Summary by Category

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



Budget Estimate Total: $15,461,298.73

Deficiency Details by Priority

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

Priority 1 - Response Time (< 2 yr):

System: B2010 - Exterior Walls

Location: boiler room

Distress: Failing

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

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

Qty: 200.00

Unit of Measure: S.F.

Estimate: $6,457.90

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Repair cracked brick foundation pier in basement

System: B3010105 - Built-Up

Location: roof

Distress: Failing

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Repair or replace flashing where it connects to masonry parapet - choose proper material

Qty: 800.00

Unit of Measure: L.F.

Estimate: $67,196.09

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Replace flashing and counterflashing of roof

System: C2010 - Stair Construction

Location: all stairways

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 1 - Response Time (< 2 yr)

Correction: Replace inadequate or install proper stair railing - select appropriate material

Qty: 200.00

Unit of Measure: L.F.

Estimate: $93,618.16

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Remove and replace stairway handrails and guards with code compliant systems wall mounted handrails and center-mounted railings and balustrade

System: D5010 - Electrical Service/Distribution

Location: Entire Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace Electrical Distribution System (U)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $340,470.53

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Replace the entire distribution system with new panel boards and new feeders. Provide arc flash label on the all panel boards. Estimated, 1 main distribution and 15 lighting/receptacle panel boards.

System: D5010 - Electrical Service/Distribution

Location: Teacher Lounge in the basement

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace Switchboard

Qty: 1.00

Unit of Measure: Ea.

Estimate: $286,951.42

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Upgrade the existing electrical service with a new service. Replace the existing switchboard with new1600A, 208/120V switchboard.

System: D5020 - Lighting and Branch Wiring

Location: Entire Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace Lighting Fixtures (SF)

Qty: 1.00

Unit of Measure: S.F.

Estimate: $679,256.04

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Replace all lighting fixtures with new fluorescent lighting fixtures with T-5 lamp.

System: D5020 - Lighting and Branch Wiring

Location: Entire Building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 1 - Response Time (< 2 yr)

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

Qty: 1.00

Unit of Measure: S.F.

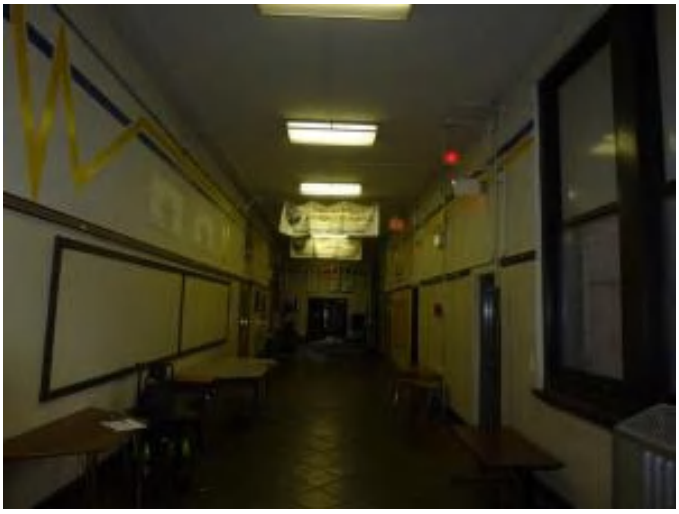
Estimate: $418,797.17

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Install minimum two receptacles in each wall of class rooms and sufficient number of receptacles in other areas per NEC. We recommend adding a two-compartment surface mounted raceway, for data power, for the computer lab room.

System: D5020 - Lighting and Branch Wiring



Location: Corridooes

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Replace lighting fixtures

Qty: 1.00

Unit of Measure: Ea.

Estimate: $89,511.81

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Provide emergency power to sufficient number of lighting fixtures in corridors, hallways, stairways and other egress ways to get minimum 1fc at egress ways per code.

System: D5090 - Other Electrical Systems

This deficiency has no image.

Location: Exterior Building
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 1 - Response Time (< 2 yr)
Correction: Add Standby Generator System
Qty: 1.00
Unit of Measure: Ea.
Estimate: $244,380.43
Assessor Name: Craig Anding
Date Created: 08/03/2015

Notes: Install a new emergency power system including 100KW diesel generator and respective transfer switch.

System: D5090 - Other Electrical Systems

Location: Roof
Distress: Health Hazard / Risk
Category: 1 - Health & Safety
Priority: 1 - Response Time (< 2 yr)
Correction: Provide Lightning Protection System
Qty: 1.00
Unit of Measure: LS
Estimate: $28,753.73
Assessor Name: Craig Anding
Date Created: 08/03/2015

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

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

System: B2010 - Exterior Walls

Location: exterior walls

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 1,000.00

Unit of Measure: S.F.

Estimate: $32,289.47

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Repoint brick structures and parapets in area of roof

System: B2010 - Exterior Walls

Location: exterior walls

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Repaint exterior walls - concrete or stucco

Qty: 2,500.00

Unit of Measure: S.F.

Estimate: $18,493.58

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Repaint exposed above-ground foundation facing playground/parking area

System: B2020 - Exterior Windows

Location: windows

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 160.00

Unit of Measure: Ea.

Estimate: $1,000,566.31

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Replace all exterior windows with insulated single hung units

System: B2030 - Exterior Doors

Location: exterior doors

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 6.00

Unit of Measure: Ea.

Estimate: $54,643.92

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Replace all exterior doors

System: B2030 - Exterior Doors

Location: exterior doors

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 6.00

Unit of Measure: Ea.

Estimate: $20,961.84

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Replace all exterior door hardware with ADA and code compliant exit hardware

System: B3010105 - Built-Up

Location: roof

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Built Up Roof

Qty: 13,116.00

Unit of Measure: S.F.

Estimate: $444,396.46

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Remove and replace existing flat roof and insulation; 4 levels

System: C1010 - Partitions

Location: classrooms

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove folding wood partitions; replace with metal studs and gypsum board painted

Qty: 2,400.00

Unit of Measure: S.F.

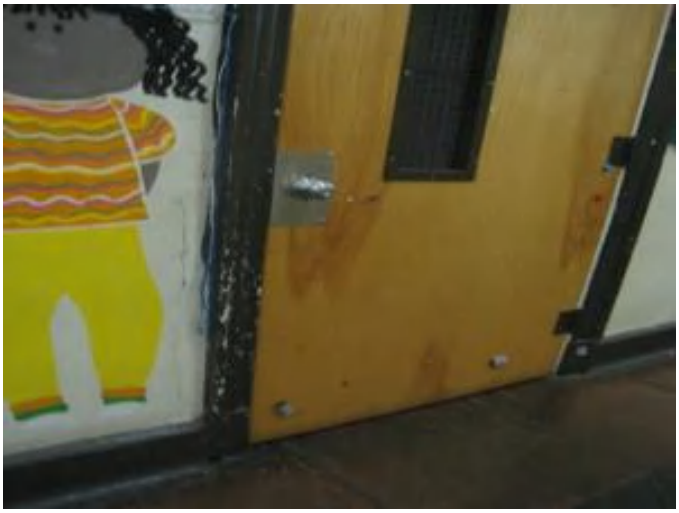
Estimate: $53,470.79

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Remove folding wood partitions; replace with gypsum board and metal stud walls

System: C1020 - Interior Doors



Location: classrooms, offices, closets

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 80.00

Unit of Measure: Ea.

Estimate: $372,347.12

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Remove and replace all wood interior doors, frames and hardware in classrooms, closets, offices, etc.

System: C1020 - Interior Doors

Location: mechanical rooms and stairways

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove and replace hollow metal frames and doors

Qty: 20.00

Unit of Measure: Ea.

Estimate: $74,158.65

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Remove and replace all basement steel doors, frames, and hardware in mechanical rooms and stairways

System: C1020 - Interior Doors

Location: classrooms and offices

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Provide security hardware for classroom and office doors

Qty: 30.00

Unit of Measure: Ea.

Estimate: $6,883.10

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Provide security hardware with lever handles for classrooms and offices, locking from inside classroom

System: C1030 - Fittings

Location: toilet rooms

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace toilet accessories - select accessories and quantity

Qty: 8.00

Unit of Measure: Ea.

Estimate: $11,976.40

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Provide toilet room accessories

System: C2010 - Stair Construction

Location: exterior stairs

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 60.00

Unit of Measure: L.F.

Estimate: $896.72

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Regrout all joints between limestone block tread/risers at exterior stairs

System: C3010230 - Paint & Covering

Location: entire building

Distress: Appearance

Category: 3 - Operations / Maint.

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

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

Qty: 20,000.00

Unit of Measure: S.F.

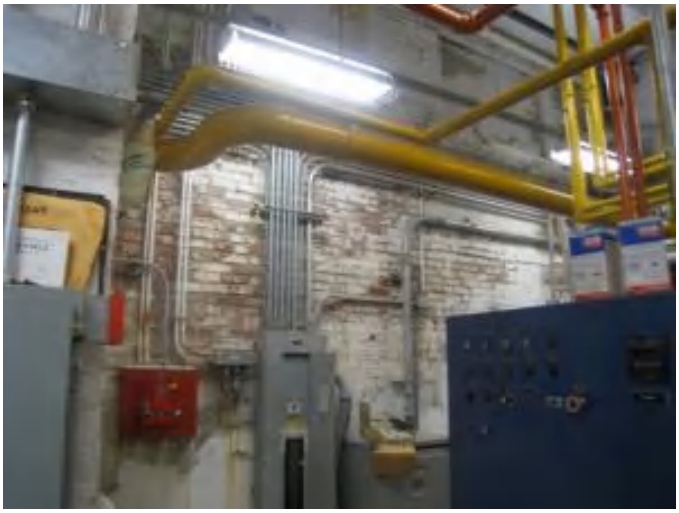
Estimate: $90,783.12

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Repair and repaint interior plaster walls where damaged

System: C3010230 - Paint & Covering



Location: mechanical rooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

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

Qty: 5,000.00

Unit of Measure: S.F.

Estimate: $18,241.83

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Strip and repaint concrete foundation (basement) walls in mechanical rooms

System: C3020413 - Vinyl Flooring

Location: classrooms and offices
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Remove and replace VCT
Qty: 7,950.00
Unit of Measure: S.F.
Estimate: $77,988.88
Assessor Name: Craig Anding
Date Created: 08/03/2015

Notes: Remove and replace all 12”x12” VCT floors

System: C3020414 - Wood Flooring

Location: classrooms and auditorium
Distress: Maintenance Required
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Refinish wood floors
Qty: 24,000.00
Unit of Measure: S.F.
Estimate: $258,406.56
Assessor Name: Craig Anding
Date Created: 08/03/2015

Notes: Strip, sand, repair and refinish all wood floors in classrooms

System: C3020415 - Concrete Floor Finishes

Location: mechanical rooms, basement and corridors

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Clean and reseal concrete floors

Qty: 26,500.00

Unit of Measure: S.F.

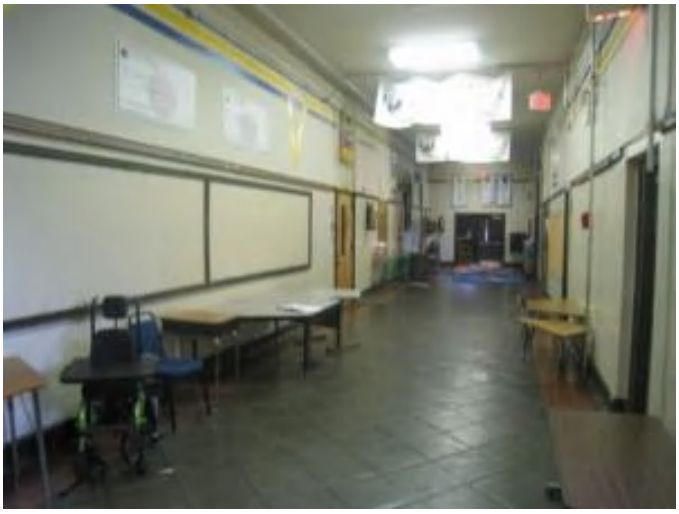
Estimate: $101,880.14

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Strip and refinish concrete

System: C3020415 - Concrete Floor Finishes



Location: corridors and stairways

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Clean and reseal concrete floors

Qty: 8,000.00

Unit of Measure: S.F.

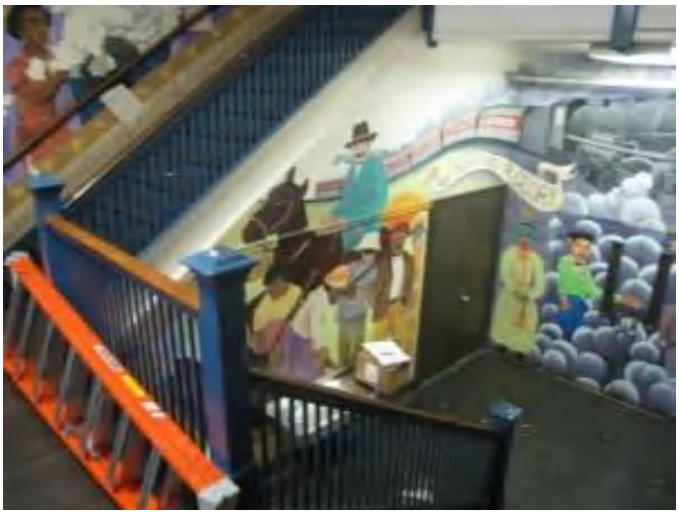
Estimate: $30,756.27

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Clean and reseal concrete floors in hallways and stairways

System: C3020415 - Concrete Floor Finishes



Location: mechanical room floors

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Prepare and repaint concrete floor

Qty: 3,000.00

Unit of Measure: S.F.

Estimate: $17,397.13

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Clean and repaint basement floor in mechanical rooms

System: D1010 - Elevators and Lifts

This deficiency has no image.

Location: location to be determined

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Add interior elevator - 4 floors - adjust the electrical run lengths to hook up the elevator

Qty: 1.00

Unit of Measure: Ea.

Estimate: $670,322.07

Assessor Name: Craig Anding

Date Created: 08/07/2015

Notes: add elevator to serve 4 floors (basement - 3rd floor)

System: D2010 - Plumbing Fixtures

Location: corridors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 12.00

Unit of Measure: Ea.

Estimate: $188,314.75

Assessor Name: Craig Anding

Date Created: 08/05/2015

Notes: Replace all drinking fountains in the building

System: D2010 - Plumbing Fixtures

Location: janitor closets

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 6.00

Unit of Measure: Ea.

Estimate: $32,442.11

Assessor Name: Craig Anding

Date Created: 08/05/2015

Notes: Plumbing in janitors closets should be replaced

System: D2040 - Rain Water Drainage

Location: roof

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Create new overflow scupper through a parapet with up to 100' downspout

Qty: 5.00

Unit of Measure: Ea.

Estimate: $52,339.33

Assessor Name: Craig Anding

Date Created: 10/23/2015

Notes: Add overflow scuppers to roof parapets.

System: D3020 - Heat Generating Systems

Location: boiler room

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 2.00

Unit of Measure: Ea.

Estimate: $1,050,121.66

Assessor Name: Craig Anding

Date Created: 08/05/2015

Notes: The boilers are currently leaking and the burners appear to be at the end of their serviceable life.

System: D3040 - Distribution Systems

This deficiency has no image.

Location: Throughout Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Conduct a steam trap survey and replace failed units.

Qty: 60,000.00

Unit of Measure: S.F.

Estimate: $196,866.60

Assessor Name: Craig Anding

Date Created: 08/05/2015

Notes: Conduct a steam trap survey.

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Provide inline ceiling exhaust fan and wall outlet louver

Qty: 10.00

Unit of Measure: Ea.

Estimate: $97,124.77

Assessor Name: Craig Anding

Date Created: 08/05/2015

Notes: It is required to install exhaust in all of the bathrooms and janitor closets

System: D3060 - Controls & Instrumentation

Location: entire building

Distress: Obsolete

Category: 3 - Operations / Maint.

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

Correction: Replace pneumatic controls with DDC (150KSF)

Qty: 58,450.00

Unit of Measure: S.F.

Estimate: $1,046,921.75

Assessor Name: Craig Anding

Date Created: 08/05/2015

Notes: Install a new DDC system for heat and ventilation control

System: D5030 - Communications and Security

Location: Entire Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace fire alarm system

Qty: 1.00

Unit of Measure: S.F.

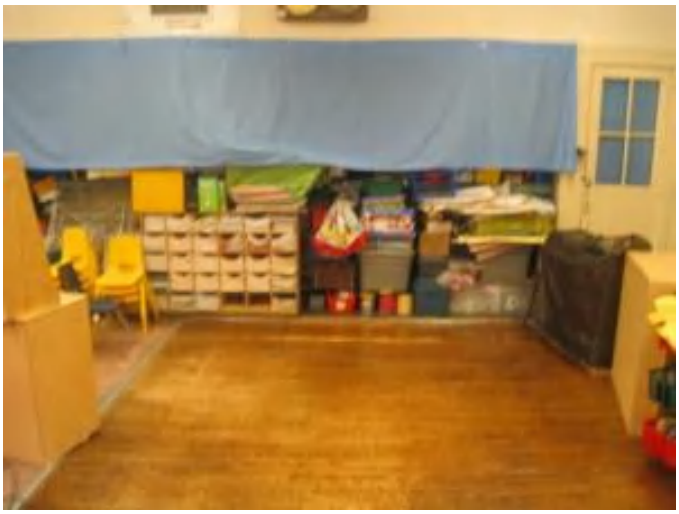
Estimate: $331,961.36

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Replace existing fire alarm system with a new automatic Fire Alarm System including control panel, initiated devices in corridors, air ducts, electrical and LAN rooms, library, and computer rooms. Provide notification devices in class rooms, offices, auditorium, corridors, other area recommended by codes.

System: E2010 - Fixed Furnishings



Location: classrooms

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 15.00

Unit of Measure: Ea.

Estimate: $108,366.06

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: New cubbies and storage units

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

System: C3030 - Ceiling Finishes

Location: entire building

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Re-paint ceilings - SF of ceilings

Qty: 10,000.00

Unit of Measure: S.F.

Estimate: $47,870.28

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Repaint plaster and concrete ceilings in the building where damaged

System: D2030 - Sanitary Waste

Location: entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 58,450.00

Unit of Measure: S.F.

Estimate: $248,214.20

Assessor Name: Craig Anding

Date Created: 08/05/2015

Notes: Inspect sanitary system throughout the main building.

System: D3040 - Distribution Systems

Location: Throughout Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 60,000.00

Unit of Measure: S.F.

Estimate: $567,622.35

Assessor Name: Craig Anding

Date Created: 08/05/2015

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

Priority 5 - Response Time (> 5 yrs):

System: D2020 - Domestic Water Distribution

Location: entire building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 5 - Response Time (> 5 yrs)
Correction: Replace domestic water piping (75 KSF)
Qty: 58,450.00
Unit of Measure: S.F.
Estimate: $296,186.78
Assessor Name: Craig Anding
Date Created: 08/05/2015

Notes: The domestic water distribution piping should be inspected and failing sections repaired.

System: D3020 - Heat Generating Systems

Location: Boiler Room
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 5 - Response Time (> 5 yrs)
Correction: Replace fuel oil pumps
Qty: 1.00
Unit of Measure: Ea.
Estimate: $26,678.08
Assessor Name: Craig Anding
Date Created: 08/05/2015

Notes: Replace duplex fuel oil pumps and skid

System: D3030 - Cooling Generating Systems

This deficiency has no image.

Location: B736001;Marshall, J

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 60,000.00

Unit of Measure: S.F.

Estimate: $1,204,454.53

Assessor Name: Craig Anding

Date Created: 01/18/2017

Notes: Provide a central chilled water air conditioning system.

System: D3040 - Distribution Systems

Location: Classrooms

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Provide classroom FC units and dedicated OA ventilation system. (20 clsrms)

Qty: 40.00

Unit of Measure: Room

Estimate: $3,322,439.53

Assessor Name: Craig Anding

Date Created: 08/05/2015

Notes: Provide new air conditioning systems for the classrooms

System: D3040 - Distribution Systems

Location: cafeteria

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 417.00

Unit of Measure: Pr.

Estimate: $194,966.18

Assessor Name: Craig Anding

Date Created: 08/05/2015

Notes: Install AHU to condition the cafeteria/gym

System: D4010 - Sprinklers

Location: entire building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 5 - Response Time (> 5 yrs)

Correction: Install a fire protection sprinkler system

Qty: 58,450.00

Unit of Measure: S.F.

Estimate: $836,154.77

Assessor Name: Craig Anding

Date Created: 08/05/2015

Notes: Install a new sprinkler system

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, hot water, gross output, 2044 MBH, includes burners, controls and insulated jacket, packaged	1.00	Ea.	boiler room	Weil McLain	Model 94 series 3			35	1970	2005	$62,552.00	$68,807.20
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, hot water, gross output, 2044 MBH, includes burners, controls and insulated jacket, packaged	1.00	Ea.	boiler room	Weil McLain	Model 94 series 3			35	1970	2005	$62,552.00	$68,807.20
D5010 Electrical Service/Distribution	Switchboards, distribution section, aluminum bus bars, subfeed lug-rated, 400 amp, excl breakers	1.00	Ea.	Teacher Lunge room at the basement.					30	1909	2017	$3,167.10	$3,483.81
												Total:	**$141,098.21**

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):	17,600
Year Built:	1909
Last Renovation:	
Replacement Value:	$372,672
Repair Cost:	$331,919.25
Total FCI:	89.06 %
Total RSLI:	28.23 %

Description:

Attributes:

General Attributes:

Bldg ID:	S736001	Site ID:	S736001

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	28.60 %	122.74 %	$331,919.25
G40 - Site Electrical Utilities	27.22 %	0.00 %	$0.00
Totals:	**28.23 %**	**89.06 %**	**$331,919.25**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2010	Roadways	$11.52	S.F.		30	1990	2020		16.67 %	0.00 %	5			$0
G2020	Parking Lots	$8.50	S.F.	6,000	30	1990	2020		16.67 %	247.60 %	5		$126,277.85	$51,000
G2030	Pedestrian Paving	$12.30	S.F.	11,600	40	1990	2030		37.50 %	0.00 %	15			$142,680
G2040	Site Development	$4.36	S.F.	17,600	25	1990	2015	2020	20.00 %	267.99 %	5		$205,641.40	$76,736
G2050	Landscaping & Irrigation	$4.36	S.F.		15	1990	2005	2020	33.33 %	0.00 %	5			$0
G4020	Site Lighting	$4.84	S.F.	17,600	30	1990	2020	2023	26.67 %	0.00 %	8			$85,184
G4030	Site Communications & Security	$0.97	S.F.	17,600	30	1990	2020	2024	30.00 %	0.00 %	9			$17,072
								Total	**28.23 %**	**89.06 %**			**$331,919.25**	**$372,672**

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.

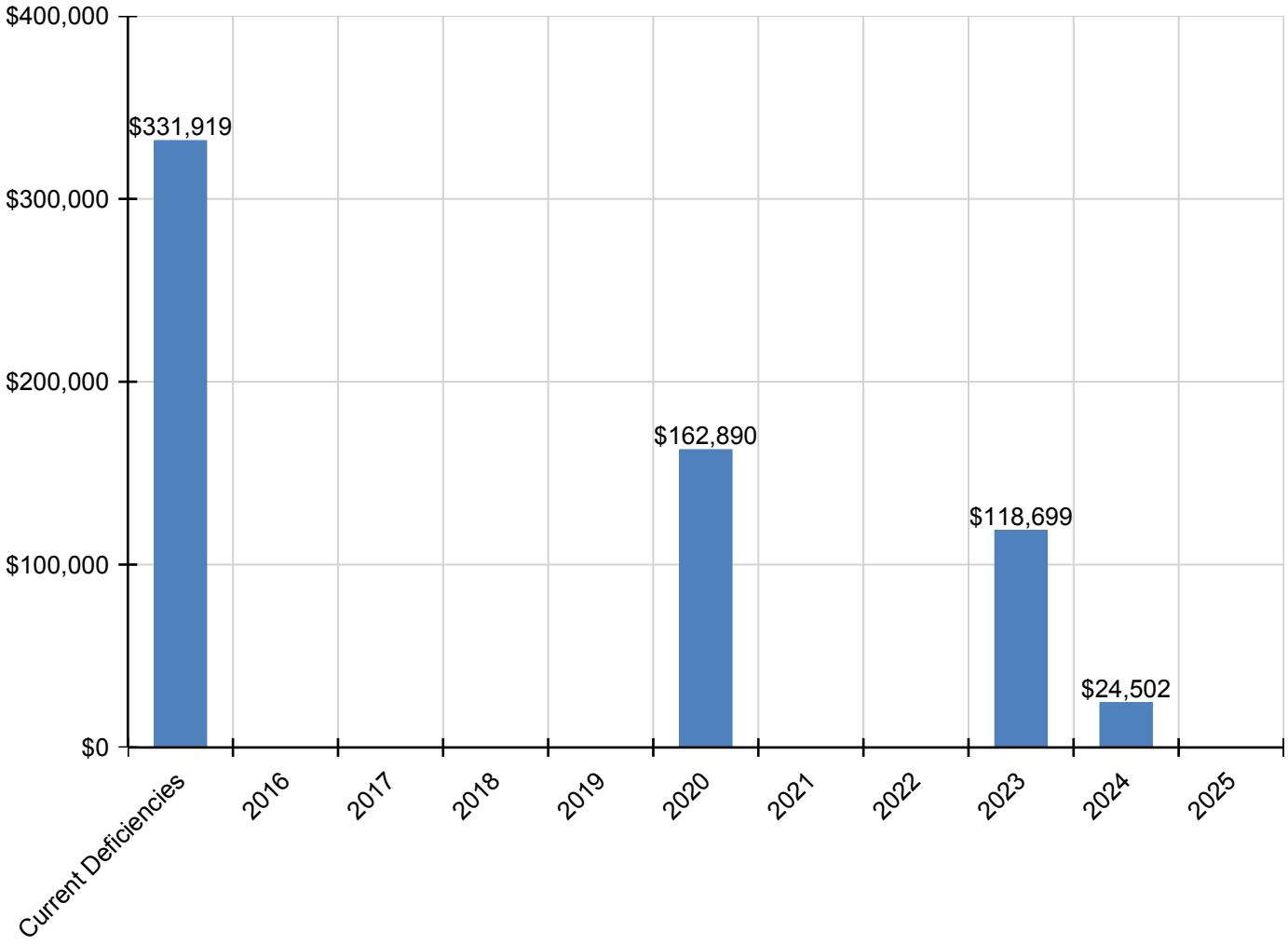
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$331,919**	**$0**	**$0**	**$0**	**$0**	**$162,890**	**$0**	**$0**	**$118,699**	**$24,502**	**$0**	**$638,010**
G - Building Sitework	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G20 - Site Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2010 - Roadways	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2020 - Parking Lots	$126,278	$0	$0	$0	$0	$65,035	$0	$0	$0	$0	$0	**$191,313**
G2030 - Pedestrian Paving	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2040 - Site Development	$205,641	$0	$0	$0	$0	$97,854	$0	$0	$0	$0	$0	**$303,496**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$0	$0	$0	$0	$0	$0	$0	$0	$118,699	$0	$0	**$118,699**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$24,502	$0	**$24,502**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

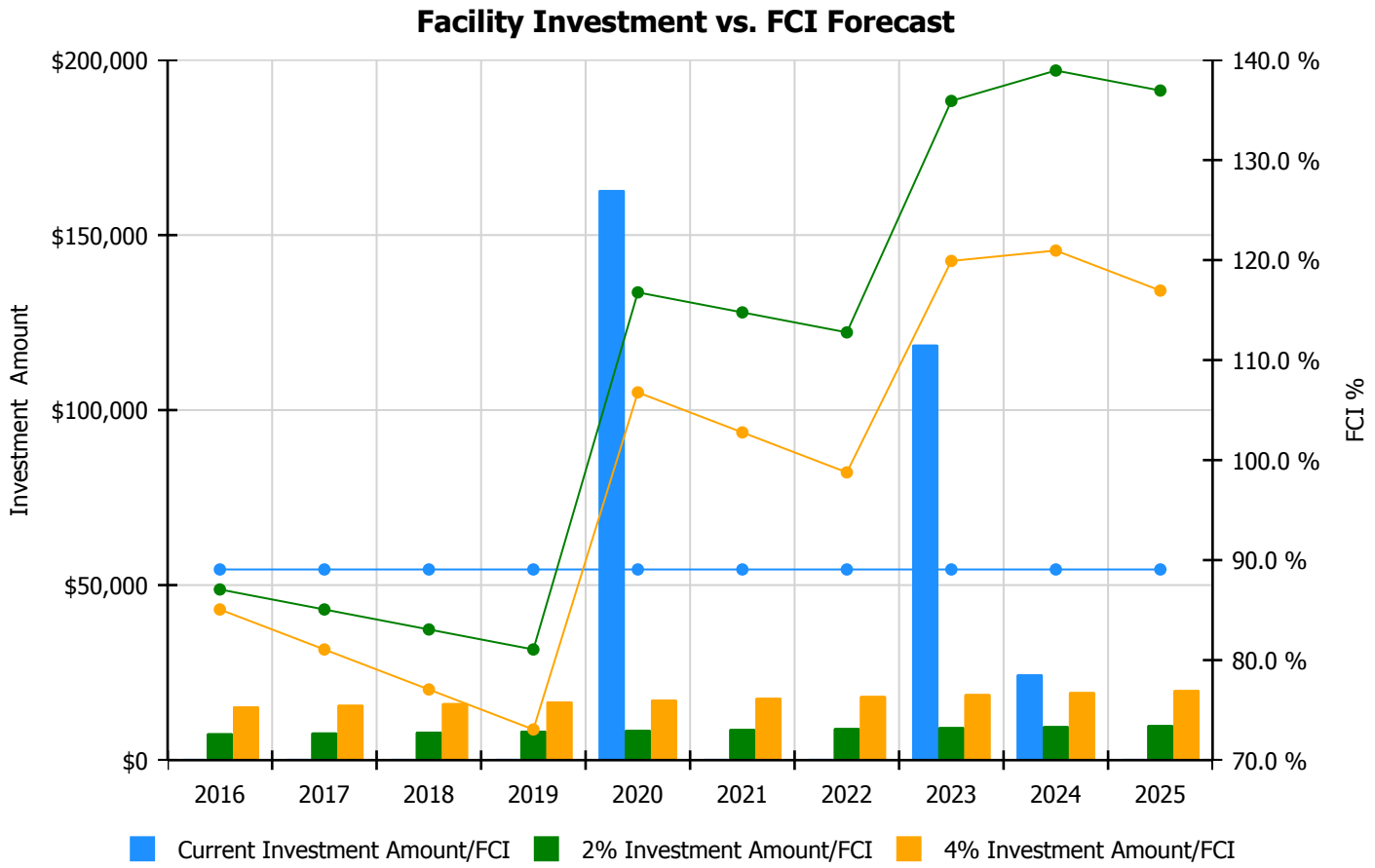
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

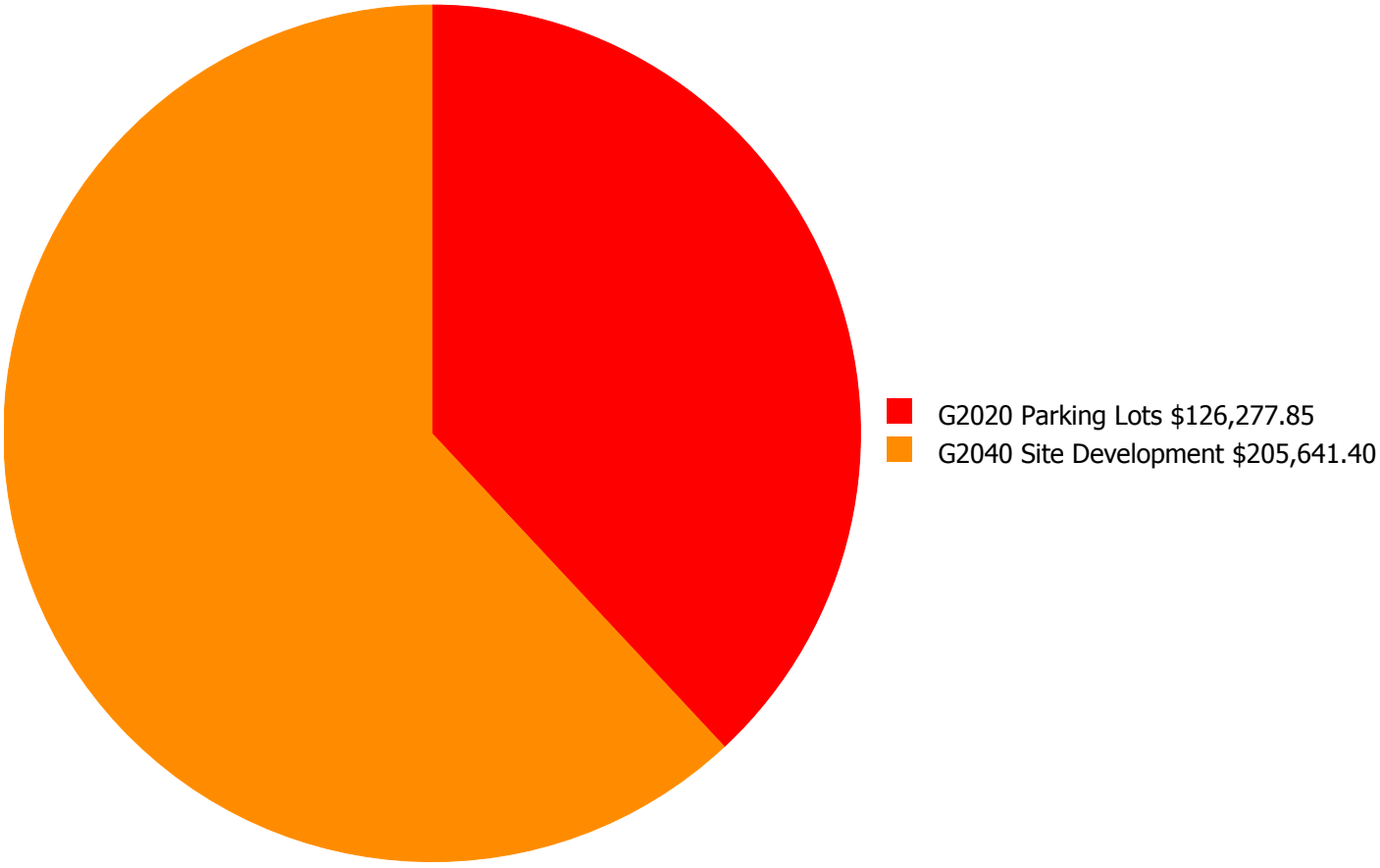
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 89.06%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$7,677.00	87.06 %	$15,354.00	85.06 %
2017	$0	$7,907.00	85.06 %	$15,815.00	81.06 %
2018	$0	$8,145.00	83.06 %	$16,289.00	77.06 %
2019	$0	$8,389.00	81.06 %	$16,778.00	73.06 %
2020	$162,890	$8,641.00	116.77 %	$17,281.00	106.77 %
2021	$0	$8,900.00	114.77 %	$17,800.00	102.77 %
2022	$0	$9,167.00	112.77 %	$18,334.00	98.77 %
2023	$118,699	$9,442.00	135.91 %	$18,884.00	119.91 %
2024	$24,502	$9,725.00	138.95 %	$19,450.00	120.95 %
2025	$0	$10,017.00	136.95 %	$20,034.00	116.95 %
Total:	**$306,091**	**$88,010.00**		**$176,019.00**	

Deficiency Summary by System

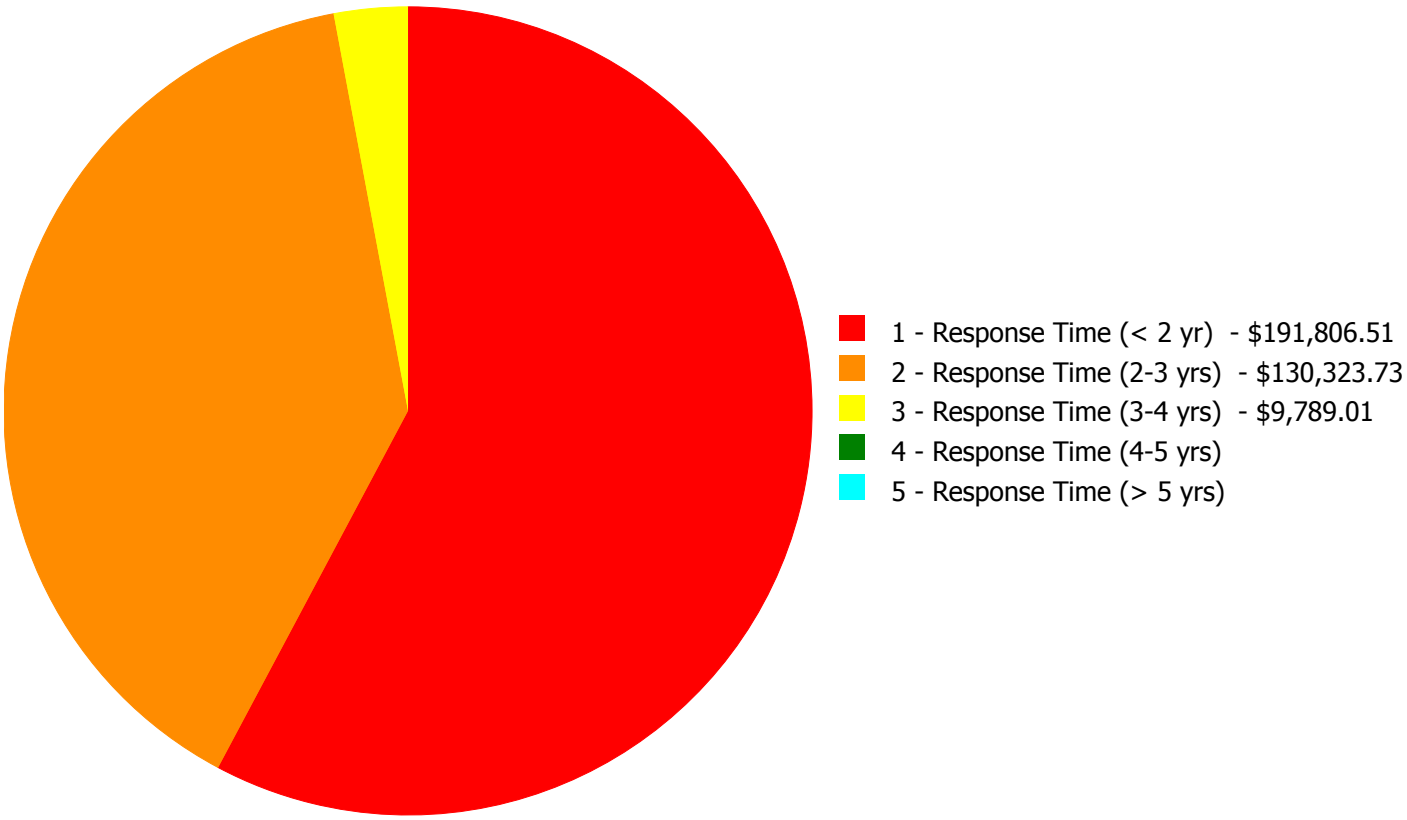
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $331,919.25

Deficiency Summary by Priority

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



Budget Estimate Total: $331,919.25

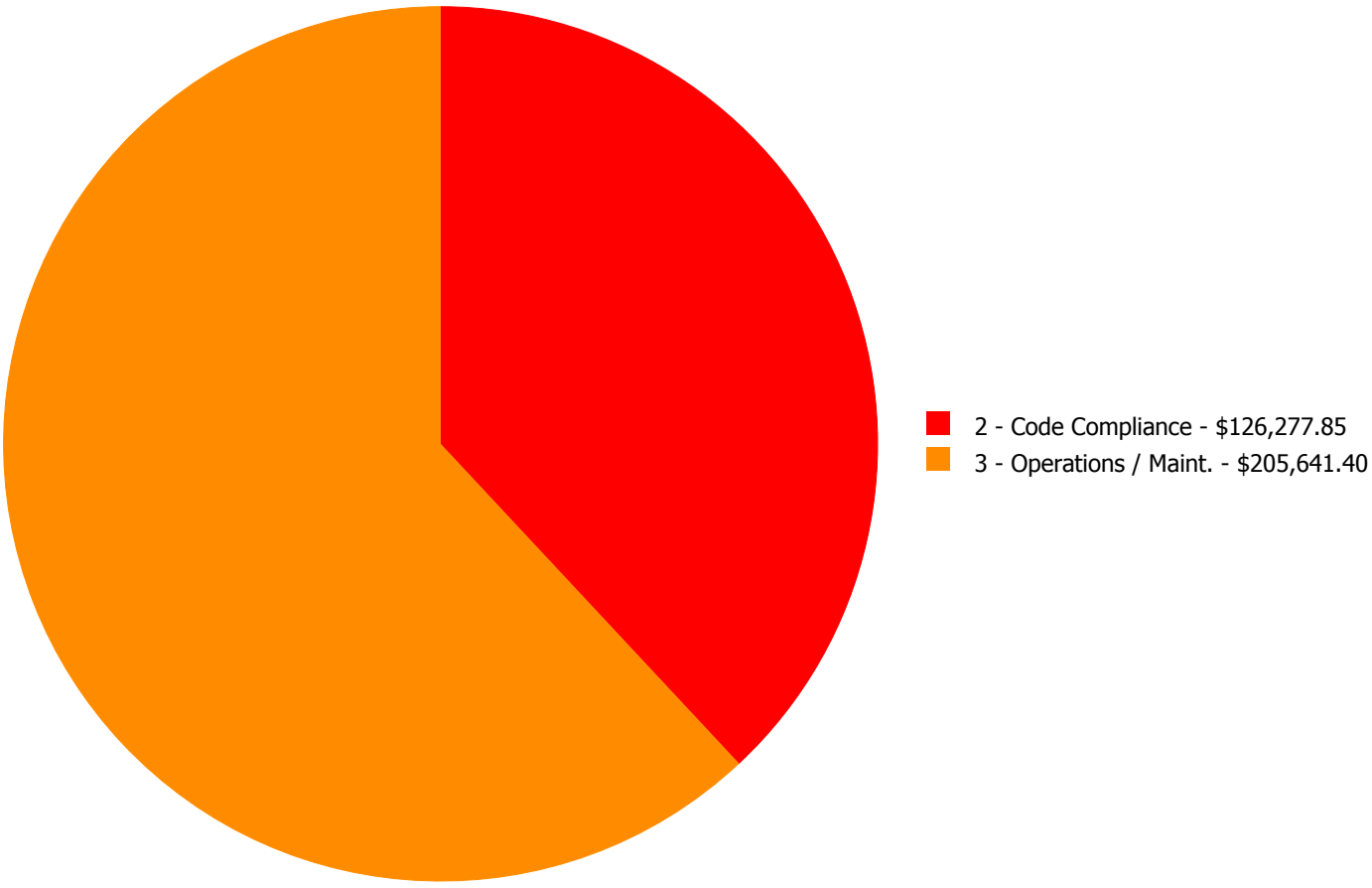
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2020	Parking Lots	$126,277.85	$0.00	$0.00	$0.00	$0.00	$126,277.85
G2040	Site Development	$65,528.66	$130,323.73	$9,789.01	$0.00	$0.00	$205,641.40
	Total:	$191,806.51	$130,323.73	$9,789.01	$0.00	$0.00	$331,919.25

Deficiency Summary by Category

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



Budget Estimate Total: $331,919.25

Deficiency Details by Priority

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

Priority 1 - Response Time (< 2 yr):

System: G2020 - Parking Lots

Location: play area
Distress: Accessibility
Category: 2 - Code Compliance
Priority: 1 - Response Time (< 2 yr)
Correction: Remove and replace concrete paving
Qty: 6,000.00
Unit of Measure: S.F.
Estimate: $126,277.85
Assessor Name: Craig Anding
Date Created: 08/03/2015

Notes: Remove existing concrete and repave concrete parking / playground area

System: G2040 - Site Development

Location: site
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Repair and regrout stone retaining wall - LF of wall - up to 4' tall
Qty: 150.00
Unit of Measure: L.F.
Estimate: $65,528.66
Assessor Name: Craig Anding
Date Created: 08/03/2015

Notes: Repair concrete retaining walls along Gillingham St and HC ramp

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

System: G2040 - Site Development

Location: site

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace metal picket fence - input number of gates

Qty: 500.00

Unit of Measure: L.F.

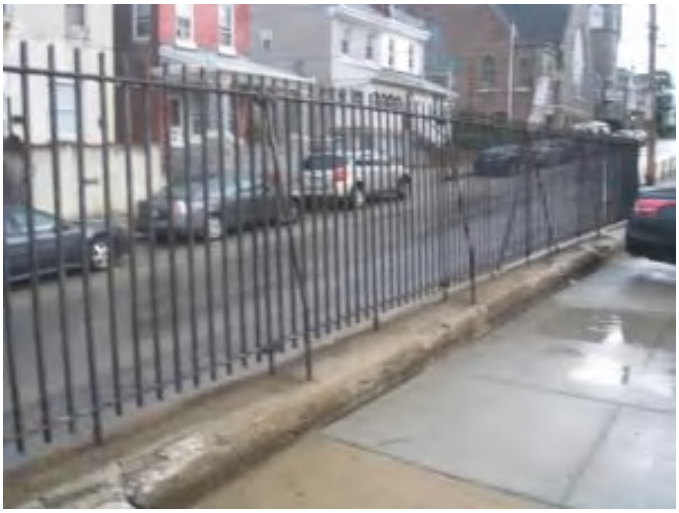
Estimate: $86,637.96

Assessor Name: Steven Litman

Date Created: 08/03/2015

Notes: Replace bent iron fence

System: G2040 - Site Development



Location: site

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair and regrout stone retaining wall - LF of wall - up to 4' tall

Qty: 100.00

Unit of Measure: L.F.

Estimate: $43,685.77

Assessor Name: Steven Litman

Date Created: 08/03/2015

Notes: Replace concrete coping stones, reset fence posts

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

System: G2040 - Site Development

Location: outside play area

Distress: Appearance

Category: 3 - Operations / Maint.

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

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

Qty: 150.00

Unit of Measure: L.F.

Estimate: $9,789.01

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Repaint HC railing on ramp

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