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.

Disston School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	6801 Cottage St.	Enrollment	867
	Philadelphia, Pa 19135	Grade Range	'00-08'
Phone/Fax	215-335-5661 / 215-335-5030	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Disston	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	**48.89%**	**$16,918,344**	**$34,604,470**
Building	48.07 %	$16,224,956	$33,749,725
Grounds	81.12 %	$693,388	$854,745

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	86.95 %	$675,116	$776,483
Exterior Walls (Shows condition of the structural condition of the exterior facade)	07.49 %	$187,452	$2,504,048
Windows (Shows functionality of exterior windows)	129.51 %	$1,582,371	$1,221,834
Exterior Doors (Shows condition of exterior doors)	65.34 %	$64,276	$98,371
Interior Doors (Classroom doors)	189.40 %	$451,017	$238,125
Interior Walls (Paint and Finishes)	04.85 %	$52,076	$1,074,617
Plumbing Fixtures	42.08 %	$385,999	$917,224
Boilers	82.02 %	$1,038,883	$1,266,610
Chillers/Cooling Towers	72.52 %	$1,204,455	$1,660,772
Radiators/Unit Ventilators/HVAC	75.16 %	$2,192,118	$2,916,528
Heating/Cooling Controls	175.67 %	$1,608,907	$915,867
Electrical Service and Distribution	140.10 %	$921,977	$658,067
Lighting	69.57 %	$1,636,836	$2,352,761
Communications and Security (Cameras, Pa System and Fire Alarm)	64.62 %	$569,517	$881,268

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

S824001;Disston

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):	67,842
Year Built:	1924
Last Renovation:	
Replacement Value:	$34,604,470
Repair Cost:	$16,918,344.07
Total FCI:	48.89 %
Total RSLI:	75.99 %

Description:

Facility Condition Assessment
August 2015

School District of Philadelphia
Hamilton Disston Elementary School
6801 Cottage Street
Philadelphia, PA 19135

67,842sf / 900 students / LN 08

General

Hamilton Disston Elementary School is located at 6801 Cottage Street. The main entrance faces Gillespie Street. The building was constructed in 1924, has 67,842 square feet, and is 3 stories tall. There is a full basement. The classical entrance with its limestone colonnade and cornice represents the type of design and detail that is typical of the Colonial Revival (or Classical Revival) style, exemplified in many of the Philadelphia schools of this era. The Disston School can be found on the National Historical Register, number 88002262 with the address of 6801 Cottage Street. Rick Williams, the Building Engineer accompanied the team during the

building inspection.

The inspection team met with Principal Kari Hill at the time of inspection. She indicated that there are a number of issues and deficiencies with respect to the physical condition of the building, mechanical, and electrical systems. These include a lack of heating system controls (heat is full-on or off), new exterior doors are needed, exterior stairs are crumbling, there are no ADA ramps into the building, there are broken auditorium seats, there are plumbing drain problems, there is a lack of electrical outlets in classrooms, there is a need for a full service cafeteria, security cameras do not function, clocks do not function, and the school is overcrowded.

Architectural/Structural

Foundations appear to be constructed of concrete and brick. Joints are generally in good condition with one minor horizontal crack across one foundation pilaster observed in the mechanical/boiler room; this crack should be repaired to prevent further cracking. 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 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, although many rooms had ceilings that prevented view of the slab. Floor slabs above each landing in the exterior fire towers show evidence of spalling and reinforcing bar rusting; these need to be repaired to prevent structural damage to the slabs.

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 and gradual pitch to roof drains for drainage. There are overflow pipes, which allow ponded roof water to spill out onto the ground or lower roofs if roof drains are clogged; these appear to have been added in recent past. Roof access is via a door out of a masonry penthouse; a steep, stairway with very low headroom up from a 3rd floor stairway landing provides access to the roof penthouse. The lower roof over the one-story library is constructed of the same concrete flat roof system as the main building. All appeared to be in good condition as partially observed in the attic space.

Exterior walls and are constructed of brick and are generally in good condition on front and side elevations (Knorr, Gillespie, and Cottage Streets). The horizontal limestone band on these sides above the second floor windows needs regrouting of the joints between blocks, as water and dirt stains on the underside of the limestone band coming from between each block staining the brick wall below. The painted lower section of the brick wall has been repainted in spots to cover graffiti – the entire lower section should be repainted to improve the appearance. The lintels above most windows and some doors facing the playground to the rear have cracks extending from the lintels into the adjacent brick wall joints. These joints should be repointed. Brick walls above the roof level are in good condition. There is a very small parapet (with roof drain overflow pipes inserted in a few locations) that is covered in asphalt backed metal flashing and aluminum coping on the top, added something in the 1990's (approximately). The top of the exterior wall has a painted aluminum coping system secured to the old limestone coping. Although paint is fading, it appears to be in good condition and water problems below were not reported. The joint where the aluminum or copper reglet above the roof membrane is inserted into the masonry roof structures needs to be recaulked as part of regular maintenance to maintain the water tight joint. After masonry repairs have been implemented, the building needs to be powerwashed.

Exterior windows were replaced in the 1990's (approximately) with bronze anodized aluminum frame operable single hung units with single thickness clear plexiglass acrylic vision panel glazing. Windows are now in poor condition with oxidized frames and severely scratched single-pane plexiglass vision panels. Operable units are 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. Basement level windows are at grade when viewed from the outside on street sides of building; these windows have galvanized steel security screens attached to the windows, as do some of the upper level windows that could be considered accessible by climbing from the ground or a lower roof. Window gratings are generally in good condition.

Exterior doors (except for front doors on Gillespie and Cottage Streets) are painted steel framed flush hollow metal units with steel frames. Doors around the building are in generally poor condition, have broken or non-functioning panic hardware, rusted dented panels and frames, and are not ADA compliant. Some doors have small glazing vision panels. There are no handicap entrances, no accessible ramps and no elevators. All exterior steel doors, frames, and hardware systems need to be replaced. The main entrance doors on Gillespie and Cottage Streets are pairs of raised wood panel and glass decorative doors with wood and glass arched vision panels above the doors. These wood doors should be stripped and refinished to bring back their style and decorative appearance.

Roof covering on the main building flat roof had been a ceramic granule impregnated, fully adhered rolled asphalt sheet system; ceramic granules are all but worn away leaving only the asphalt membrane exposed to the elements. Brick rooftop structures, brick parapets, and most ventilation fan structures have been recently (10 years ago?) flashed with asphaltic backed metal faced flashing material. The roof membrane is in poor condition with more than half of the surface granules eroded away and dried cracked asphalt seen along membrane joints. There are soft areas and lumpy areas under the membrane. Some areas are stained with dirty and mildew indicating poor or no drainage; water can only evaporate from these areas. The membrane and flashing is weathered and is past its normal service life of 20 years and needs to be replaced. Roof openings include toilet room vents, ventilation ductwork, and roof drains. Flashing of the penetrations appears to be in poor condition and past its normal service life, although no leaks were reported at this time. The original limestone coping has been covered over with painted aluminum coping, possibly 15+ years old and in fair condition with paint fading and beginning to age in sections. Masonry joints in penthouse and chimney structures have been recently repointed and appear to be in good condition, although the chimney appears to still have some joint cracking in need of re-pointing. There are now no leaks into third floor rooms below, reported by engineering.

Partitions in most basement rooms are constructed of brick masonry; basement classrooms have some plaster walls. The upper 3 floors of the building have plaster on wood lath and/or terracotta partitions. There are wood framed clerestory glass panels located in walls above classroom doors in the corridors. These panels are in generally good condition being above the reach of anyone, but the glass is not wired or fire rated and needs to be replaced with fire rated gypsum board infill. Between some classrooms are manually operated full height wood folding partions which are inoperable and offer little sound attenuation between classrooms. These units need to be replaced with insulated, full height gypsum board partitions.

Interior classroom and office doors are either the original wood and plate glass (not fire rated or wired) raised panel doors with original hardware or replacement wood doors with narrow lite wired glass vision panels and replacement hardware at least 10 years of age. Most original wood doors are damaged, have broken glass, and broken, non-ADA compliant security hardware. Some interior basement doors are hollow metal in hollow metal frames, rusted where coming in contact with floors. Stairway enclosures and doors are full height wired glass and steel door vision panel assemblies. This system exceeds the allowable glass size permitted by today's codes and is not a code-compliant fire rated assembly. Additionally, stairway doors do not positively latch as required of fire rated doors. All doors are generally in poor condition throughout the building, are not ADA compliant, do not have ADA or proper locking hardware, and are not fire rated where required. Classroom doors do not have security locking feature from inside classrooms. All interior doors and hardware need to be replaced.

Interior fittings/hardware include black slate chalkboards with oak chalk trays or bulletin boards on walls and integral to the original dark oak folding wall partitions built into the folding panels. The folding partition units present in approximately 6 classrooms 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, offering better sound attenuation than the old, loose folding partitions. Toilet room partitions are solid plastic replacement partitions. Most are in good condition. Toilet room accessories (toilet paper dispensers, soap, paper towel or dryers, grab bars, door latches) have been recently replaced. Most components seem to be in place and operating. There are no fully compliant ADA toilet rooms, although it might be possible to convert an existing single toilet and lavatory space to a minimally accessible space.

Stair construction 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. There are two open stairways leading from the ends of the two first floor wings to the basements and an exit door. These open stairways need to be enclosed with fire rated partitions and doors to be considered exits by today's code; they are required to eliminate dead end conditions in the corridors.

Wall finishes in all classrooms are plaster, which is cracked with surface crazing and damages in a number of locations at doorways and corners. There are also many areas of water damage on upper floor plaster walls due to water penetration from coping or roof leaks or lintel leaks. Folding wood panels are covered with staples, small gouges and many surface damages. Corridors have 48" high marble panel wainscots with plaster above and are generally in good condition with isolated cracks or damages requiring repair. Stained wood trim in all rooms is damaged and worn but with filling and refinishing can be returned to its original appearance. Toilet room walls have been recently refinished with ceramic tile from floor to ceiling and are in good condition. The queuing area outside the auditorium has marble columns and plaster walls with decorative plaster capitals on square columns. These historical marble and plaster decorative elements are in good condition. There are a number of plaster wall areas in the auditorium that have been damaged from water entering the building through the roof or steel lintels. Assuming these leaks have been addressed after roof and lintel repairs, the plaster should be repaired. The wood wainscot in the auditorium has many surface scratches and some damaged panels; repairs can be made and the wood can be refinished to revitalize this space. Damaged plaster walls should be patched and repainted.

Floor finish in the auditorium and classrooms is dark stained oak. Most floors are in good enough condition to be stripped, sanded, and refinished; this was done in a few third floor classrooms with excellent results. Some rooms have either 12"x12" vinyl composition tile (VCT) over the wood or 9"x9" vinyl asbestos tile (VAT) over the original wood floor. The gymnasium which also

serves as the cafeteria is finished in VAT. All 12”x12” VCT floors need to be removed and replaced; 9”x9” floors may have asbestos and need to addressed as possible asbestos containing materials. They should be removed using proper asbestos abatement procedures if they are found to contain asbestos and replaced with 12”x12” VCT. Stair walking surfaces are finished in exposed concrete that have years of dirt ground into the surfaces; these should be stripped, cleaned and resealed. All corridor floors are finished with 4’x4’ (nominal size) concrete tiles which appear to be a monolithic system and highly durable. Edges along the walls are painted gray which doesn’t match floors or walls and is damaged in need of repainting. These corridor floors have ground-in dirt all over and especially at corners, causing their color to be very dark and dingy. Toilet rooms have been recently refinished with new fixtures, plastic partitions and ceramic mosaic tile walls and floors; however a thorough cleaning of these rooms is required. The room in the basement originally designated as the cafeteria is now a food prep area finished with sealed concrete; this surface needs to be stripped and resealed.

Ceiling finishes are mostly exposed plaster throughout the original building with suspended fluorescent lighting fixtures. Recently upgraded classrooms and the Library have suspended 2x4 acoustical tile ceilings.

Furnishings include the original folding wood seating in the auditorium is still in use. Some seats need to be repaired to operate properly and many are scratched. It appears as if these chairs have been refinished at least once, although there are some additional seats that now need repairs and refinishing. Casework and storage cabinets in the classrooms and the office is damaged, worn and should be repainted to maintain useabilty. The Library has wood bookcases and seating which appear to be relatively new and in good condition.

There is no elevator in the building and no ADA ramp up to the building. Both should be installed to provide maximum flexibility of access to everyone.

Mechanical

Plumbing Fixtures – The building is equipped with wall hung urinals (flush valve type), a combination of floor mount and wall hung water closets (flush valve type), and wall hung lavatories with single wheel handle faucets. Some of the original plumbing fixtures remain in service, however, these fixtures have reached the end of their service life and should be replaced. There are new urinals and water closets which have been installed which are equipped with button style flushometers. Replacing the remaining existing fixtures with new fixtures will provide lower water consumption and provide savings on water heating costs. The bathrooms are also equipped with floor drains.

Drinking fountains in the corridors and are wall hung fountains. Drinking fountains are typically located in the hallways at intervals and are not located at the bathroom groups. Most of the drinking fountains appear to be the original installed equipment. The replacement of all drinking fountains is recommended as the equipment is approximately 90 years old and beyond its service life.

Floor basin mop/service sinks do not appear to be original, however they appear to have been heavily used and should be replaced. Service sinks are available throughout the building for use by the janitorial staff and are typically located in the vicinity of the bathroom groups. The food prep/warming kitchen is equipped with one hand sink with a lever handle operated.

Domestic Water Distribution – It appears that the 4” domestic water service piping is mostly soldered copper. Water service enters the building in the basement, with double check backflow preventer (RPZA – reduced pressure zone assembly) and a 4” water meter on the main line upon entering the building. The water meter appears to be new. The piping is copper with soldered joints. The distribution piping appears to be original and is at the end of its service life and is recommended to be inspected and repaired as needed.

There are two instantaneous natural gas fired tankless water heaters, Paloma Model PH24-M-DN, at this facility which are located in the boiler mechanical room. Each heater is rated for a maximum gas input of 178,500 btuh, minimum 37,700 btuh. The hot water system is equipped with a recirculation pump as well. The water heaters appear to be have exceeded their service life and should be replaced. A water softener was located in the boiler room for treating the boiler make up water system. The water softener system appears to have exceeded its service life and should be replaced as well..

Sanitary Waste - The sanitary waste piping system in the original building is extra heavy cast iron with lead and oakum seals and appears to be the original piping installed in the building. It is therefore recommended to inspect this piping and repair or replace sections as needed. The sanitary system leaves the building by gravity flow.

Rain Water Drainage - The rain water drains from the roof are routed through mechanical chases in the building and connect to the underground site drainage system. There are overflow scupper pipes for the building that appear to have been recently installed in the parapets.

Energy Supply - Duplex fuel oil supply pumps provide the required fuel to the boilers. There are (2) 10,000 gallon fuel storage tank is located underground below the paved surface of the building courtyard area adjacent to the paved school play yard area. The fuel pumps and controls are original vintage, are beyond their serviceable life and therefore should be replaced. Natural gas enters the building in the basement. The natural gas main is welded, black steel piping while the branches are threaded, black steel.

Heat Generating Systems – Low pressure steam is generated at 15 lbs/sq. in. or less by two 4,061 MBH Weil McLain 94 series steam boilers with oil burners. All boilers are equipped with Power Flame number 2 fuel oil burners, model CR4-OB and are new. The boilers appear to have been install in the early 1970's and are at the end of their service life and should be replaced. There is draft control on both boiler flues. Combustion air louvers serve the boiler room to provide combustion air for the boiler operation. Burner controls provide full modulation with electronic ignition, digital flame sensing and pressure atomization for the oil. Burner oil pumps are driven by independent motors. The oil supply to the burner is equipped with dual solenoid valves and strainer/disposable media filter.

Distribution Systems – The building steam distribution piping is black steel with welded fittings. The condensate piping is Schedule 80 black steel with threaded fittings. The piping has been in use beyond its service life and will require more frequent attention from the maintenance staff to address pipe/valve failures as time passes. The District should hire a qualified contractor to examine the distribution piping and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 5 years.

There are two condensate return receivers which return condensate directly back to the boiler. There is no boiler feedwater system. One condensate return system (duplex pumps) is located in the main boiler mechanical room while the other (single pump) is located in the old coal and ash storage area. The condensate return piping is black steel with threaded joints. The building engineer stated that the steam traps are in good condition throughout the building. It is recommended that the District conduct a steam trap survey to determine the quantity and condition of all steam taps. The condensate receivers, pumps and associated components have exceeded their service life and should be replaced.

Ventilation and additional heating for the building was provided by a house fan in the basement which is operational but is not used. The air was pushed into the various rooms of the building through ducts built into the walls. The air was exhausted from other ducts built into the walls, up through the attic space, and out through roof mounted vents. Additional fresh air is admitted into the building through the unit ventilators and by opening windows. Ventilation air is induced into the spaces through the outside air intake grilles located in the building exterior wall which are ducted to the unit ventilators.

The building is heated by cast iron, manifold, steam radiators in the classrooms and in the hallways, and currently is the sole source of heat for these areas. During our survey it was observed that most of the steam radiators had cabinetry to eliminate the ability of students to come into contact the hot surface of the manifold, however there were radiators in service without guards or enclosures. These units should have guards or enclosures added to protect students from exposure to the hot surfaces.

The gymnasium is served by horizontally suspended steam manifold radiators. The radiators are suspended from the ceiling near the exterior windows. Ventilation is accomplished by operable windows. The steam radiators are part of the original building equipment, have exceeded their life expectancy and should be replaced. It is recommended to replace these systems with a roof top mounted unit with an overhead supply air distribution system and return air ductwork and low return intake grilles which would be protected from damage.

The cafeteria is served by vertical cast iron manifold steam radiators. The steam radiators are part of the original building equipment, have exceeded their life expectancy and should be replaced. A roof top mounted unit could be provided with heating and cooling coils as well as ventilation to meet the outside air ventilation requirements for the cafeteria seating area. The kitchen/food warming area is provided with vertical cast iron manifold steam radiators. Ventilation is provided by operable windows. It is recommended that a dedicated heating and cooling system be implemented.

The library is served by a four ton, packaged roof top unit with DX cooling (air cooled condenser) and electric heat. The refrigerant is R22. The unit serves the library through a ducted supply and return system.

The auditorium is served by an eight and one half ton (8-1/2), packaged roof top unit with DX cooling (air cooled condenser) and electric heat. The unit was manufactured by Carrier, Model 50PG-C09HARSNA-C048JK, with R410A as the refrigerant. The unit serves the auditorium through a ducted supply and return system.

Terminal & Package Units - There are a few which have window air conditioning units but predominantly the building does not have cooling systems, with the exception of the auditorium and library. There are roof mounted exhaust fans which serve the restrooms.

Controls & Instrumentation - The original pneumatic systems still provide basic control functions. Wall mounted, pneumatic room thermostats, manufactured by Robertshaw, drive the control valves open and close on the steam radiators. There is one air compressors which generate control air for the temperature control system which are located in the boiler room. A refrigerated air dryer serves the compressor. The building engineer reports temperature control and pneumatic thermostats are generally problematic throughout the facility. Potential problems with oil, moisture or dirt in the pneumatic copper tubing can be one source of problems. The small rubber gaskets and tubing connections at control devices can become brittle over time and fail to compound control problems. The pneumatic systems are beyond their service life and require too much attention from the maintenance staff. The original control valves, dampers and pneumatic actuators are over 65 years old and should be replaced. These controls should be converted to DDC.

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

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

Electrical

Site Electrical Service is from medium voltage overhead lines on wooden poles along Gillespie St. One pit mounted utility transformer with medium voltage primary (voltage level unknown at this time) and 208/120VAC secondary and at an estimated available power of 300 KVA is installed outside the building for supplying power to facility.

The service entrance to the facility consists of a disconnect switch, utility meter and 1200A main switch board located in Room 05 and main distribution panel located in boiler room in the basement. The electrical service entrance does not have enough capacity for future loads.

Power distribution is achieved through corridor located lighting/receptacle panel boards. There are four panel boards on each floor (two for lighting/receptacles and two for window mounted AC units). It appears that lighting/receptacle panel boards and branch circuit breakers have out-lived their useful lives and should be upgraded/replaced.

Receptacles are not provided in adequate numbers in classrooms, computer room, etc. It is recommended to have a minimum of two receptacles on each classroom wall. The computer room requires one receptacle every three feet on center on each wall.

Most lighting fixtures (over 95%) are fluorescent fixtures with outdated T12 lamps. Incandescent lighting fixtures are used in auditorium some other places. Lighting levels do not meet IES (Illuminating Engineering Society) recommended levels.

Fire Alarm System consists of a 120V manual fire alarm system. The system does not meet current fire alarm codes and should be replaced.

Telephone / LAN equipment/devices are located in the school information technology room. This room was not accessible at the time of assessment. The computer room, some classrooms, and some offices are provided with data outlets. The system is new and working properly.

Public address / music- The school uses the telephone systems for public announcements. This system is working adequately. A separate PA system does not exist.

Intercom System and paging - is functional. The paging system consists of one way communications from the office to classrooms. Two way communications are obtained through wall mounted phones in classrooms and other areas. The paging speakers are old and should be replaced.

The existing master clock system is not functioning properly. A new clock system is needed. The present bell system is working adequately.

Television system is not provided in the school.

Security Systems, access control, and video surveillance systems are provided in the school. There are ten cameras installed in the corridors. Cameras are controlled by a Closed Circuit Television system (CCTV). The system is working properly.

Emergency Power System (backup power generator) is provided in the school. A 30KW, 208/120V, 1PH, 3W diesel generator manufactured by "Kohler" is installed in the boiler room for feeding life safety and other critical emergency loads. The generator is new but it does not have enough capacity for future emergency loads.

IT Room was locked at the time of the field investigation, however it is assumed that servers are supported by UPS, based on similar installations at other schools. If this is not the case, it is recommended to provide UPS power to the IT equipment.

Emergency lighting system, including exit lighting is not adequate. There are not enough lighting fixtures on emergency power. Existing exit signs are not battery pack type. Additional exit lighting on backup power or battery packs is required.

Lightning Protection System is adequate. It is 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.

Elevator is not provided in this school.

Theater Lighting and dimming controls are old and are not a proper, code compliant installation. The lights are turned on and off by feeder breakers, which are not designed for frequent on/off use.

Sound System in the Auditorium is old and should be replaced.

Site Lighting System is not adequate. Existing lighting fixtures do not provide enough light to provide good security at night.

Site Video Surveillance system is provided and monitored by the Closed Circuit Television (CCTV) system. It appears to be operating adequately.

Site paging is not adequate – there is a lack of speakers required to provide adequate site coverage.

Grounds

Paving for the play area and parking lot is constructed of 4'x4' (nominal) concrete panels; roughly 75% are in need of replacement and although they are not all contiguous, it may be possible to replace only those that are failing. This expansive paved area serves as the playground and parking area. Parking and play area striping is worn and almost invisible. Clear separation of play area and parking, to provide a safe area for the children to play, is lacking. The number of required parking spaces for school staff is unknown. Restriping of parking areas and better designation of play and parking areas are required. Granite block stairways into the building on all three sides are need of some regrouting. New handrails and guards are required at all stairs.

Wrought iron fencing is generally in fair condition with a coating of rust covering most of the fence. There are some damaged and bent fence panels in need of replacement. The damaged sections should be replaced and the remaining fence sections should be stripped and repainted. The gates providing street and pedestrian access are either missing or inoperative and require replacement.

Half of the brick retaining wall along Cottage Street has serious cracks and is bowed along a crack in the horizontal direction. This wall is failing and needs to be reconstructed. The brick retaining wall along Gillespie Street appears to have been recently rebuilt although there is some grout missing from some joints in need of repointing.

RECOMMENDATIONS

Architectural

- Strip and repaint concrete foundation (basement) walls in mechanical rooms (3000sf)
- Repair crack in foundation and pilaster (50ft)
- Clean and repaint basement floor in mechanical rooms; clean and reseal concrete floors in building hallways and stairways (27,000sf)
- Repair spalling underside of concrete decks in both fire stair towers, all 4 levels (500sf)
- Repoint cracked masonry adjacent to rear window lintels and in rear walls; repoint retaining wall on Gillespie St (1500sf)
- Repaint lower part of exterior brick foundation wall (5000sf)

- Powerwash horizontal limestone band and brick below (10,000sf)
- Replace lintels over rear windows (24) 8ft lintels
- Replace all exterior windows with insulated single hung units, approx. av. size 4'x8' (330 ea)
- Replace all metal exterior doors and frames with ADA and code compliant exit hardware (8)3x7 doors
- Refinish 2 pairs of decorative wood entrance doors (4 wood doors and round top clerestory)
- Remove and replace existing flat roof and insulation; 5 levels (20,000sf)
- Remove non-rated glass panels between classrooms and corridors; fill with one hour rated gyp bd sys. Approx. (20) 3x3 windows (200sf)
- Remove and replace all wood interior doors, frames and hardware in classrooms and offices (80)3x7
- Refinish closet doors in classrooms (70)3x7
- Provide security hardware for classrooms and offices, locking from inside (80).
- Repaint basement steel doors, frames, and provide new hardware in mechanical rooms and fire exit stairways (12+16) 3x7
- Replace stair doors and glass/metal stairway enclosures with fire rated assembly (12 doors; 1000sf wall enclosure)
- Remove folding wood partitions; replace with gypsum board and metal stud walls (8x 300sf=2400sf)
- Repair water damage, cracks, and repaint some interior plaster walls (5000sf)
- Remove and replace stairway handrails and guards with code compliant systems 4 stories 4 stairs (400 lf railing system)
- Enclose 2 stairways connecting first floor with basement with fire rated construction (1500sf; (4)3x7 doors)
- Strip, sand, repair and refinish all wood floors in classrooms and in auditorium (26,482sf)
- Remove and replace all 12"x12" VCT floors in offices (1000sf)
- Replace VAT floors using proper asbestos abatement procedures if determined asbestos is present. (8500sf)
- Repaint plaster ceilings where damaged by water (500sf)
- Repair or replace damaged folding wood auditorium chairs (80)
- Provide elevator to serve four floors and auditorium.
- Regrout some joints between limestone block tread/risers at some exterior stairs (10 risers, 6ft long)

Mechanical

- Replace all lavatories in the building with lower flow fixtures, as the fixtures are original.
- Replace all water closets in the building with lower flow fixtures, as the fixtures are original.
- Replace all urinals in the building with lower flow fixtures, as the fixtures are original.
- Replace the wall hung drinking fountains and integral refrigerated coolers in the corridors and at the restrooms. These units are well beyond their service life and most are NOT accessible type.
- Replace service sinks (janitor sinks) in the building.
- Hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Replace the two, 10,000 gallon underground storage tank (UST) located underground beneath the paved schooyard.
- Replace two instantaneous natural gas fired tankless water heaters.
- Inspect and replace the original domestic water piping in the building; replace as needed.
- Conduct a steam trap survey to identify and replace failed traps passing live steam into the condensate piping system.
- Hire a qualified contractor to examine the steam and condensate piping in service for 90 years and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 10 years.
- Replace duplex fuel oil pumps.
- Remove the two 4,061 MBH Weil McLain 94 series steam boilers estimated to have been in service since the 1970s. Remove existing steam boilers and steam distribution system. Install hot water boilers and hot water distribution system.
- Replace the steam original radiant heating (manifold) terminals fashioned from welded piping still present in the building with finned tube elements to protect students from exposure to the hot surfaces.
- Replace the existing steam radiators throughout the building with new fan coil units designed to provide adequate ventilation per ASHRAE Std 62. The new units shall be equipped with hot water / chilled water coils and integral heat recovery wheels. Install steam converters in the existing boiler room with circulating pumps, distribution piping and controls to provide heating hot water for the new coils.
- Remove the window air conditioning units and install a 250 ton air-cooled chiller on the roof with chilled water distribution piping and pumps located in a mechanical room on the basement level to supply more reliable air conditioning for the building with a much longer service life.
- Provide ventilation, heating and cooling for the gymnasium by installing a packaged roof top unit.
- Provide ventilation for the corridors at two basement and two first floor entryways (4 locations total) by installing fan coil air handling units hung from the structure with outdoor air ducted to the unit from louvers in the window openings
- Provide ventilation, heating and cooling for the Kitchen/Food Prep Area by removing the existing steam radiators and installing fan coil units with heating and cooling with a dedicated outside air ventilation system.
- Replace the pneumatic controls for the HVAC systems with modern DDC modules, valves and actuators to improve reliability

and energy efficiency.
- Provide a new building automation system (BAS) with communication interface to the preferred system in use throughout the District.
- Install a fire protection sprinkler system with quick response type heads to reduce insurance costs by providing protection for the property. A fire pump may be required depending on the available city water pressure.

Electrical

- Upgrade the existing electrical service with new service. Replace the existing switchboard with a new 2000A, 120/208V, 3PH, 4 wire switchboard to provide more capacity for future AC loads.
- Replace the entire distribution system with new panels and new wiring/conduits. Provide arc flash label on the electrical equipments. Estimated 16 panel boards.
- Install minimum two receptacles in each wall of classrooms and sufficient number of receptacles in other areas as required by NEC. We recommend adding a two-compartment surface mounted raceway, for data and power in the computer lab.
- Replace all lighting fixtures with new fluorescent lighting fixtures with T-5 lamps throughout the building. Provide emergency power to a sufficient number of lighting fixtures in corridors and egress ways.
- Replace existing fire alarm system with an automatic fire alarm system including smoke detectors in corridors and other areas as recommended by NEC. Install horn/strobes in classrooms, corridors, offices, toilets, library and other areas as recommended by codes.
- Replace existing master clock system with a new system.
- Replace existing generator with new 100KW generator
- Provide lightning protection studies to ascertain adequacy of existing systems.
- Provide new stage lighting and lighting controller in the Auditorium.
- Provide new sound system including a freestanding 19” rack backstage area with a mixer, amplifiers, CD player, cassette player, AM-FM radio, graphic or parametric equalizer, and receivers.
- Replace all exit signs with battery pack type exit signs. Estimated 25 each.
- Provide wall mounted flood lights on exterior walls to provide adequate site lighting to help secure the building. Estimated 12 each.
- Provide outdoor speakers for better sound coverage in the school yard. Estimated 4 each.

Grounds

- Repave damaged sections of concrete parking / playground area (25,000sf)
- Provide ADA ramp into building at rear playground stair at first floor level (6ft rise; 90ft long)
- Replace damaged wrought iron fencing (8) 8ft sections; include new gate (24ft)
- Repaint rusted wrought iron fencing (1000 ft)
- Rebuild retaining wall along Cottage St. 6-10ft tall (200ft)

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 2 / Tm 2
Status:	Accepted by SDP	Team:	Tm 2
Site ID:	S824001		

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	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	0.88 %	$11,453.97
B10 - Superstructure	37.00 %	0.35 %	$21,059.44
B20 - Exterior Enclosure	31.00 %	47.96 %	$1,834,099.11
B30 - Roofing	110.00 %	86.95 %	$675,116.19
C10 - Interior Construction	49.97 %	38.44 %	$639,894.56
C20 - Stairs	37.00 %	196.67 %	$188,133.03
C30 - Interior Finishes	105.40 %	16.69 %	$563,115.64
D10 - Conveying	105.71 %	351.52 %	$729,740.92
D20 - Plumbing	115.84 %	72.20 %	$1,000,160.67
D30 - HVAC	119.44 %	80.09 %	$6,044,362.56
D40 - Fire Protection	105.71 %	177.49 %	$970,510.11
D50 - Electrical	110.11 %	85.09 %	$3,393,127.49
E10 - Equipment	14.29 %	8.43 %	$91,066.82
E20 - Furnishings	12.50 %	43.68 %	$63,115.96
G20 - Site Improvements	41.45 %	105.01 %	$693,387.60
G40 - Site Electrical Utilities	106.67 %	0.00 %	$0.00
Totals:	**75.99 %**	**48.89 %**	**$16,918,344.07**

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)
B824001;Disston	67,842	48.07	$4,660,786.38	$5,725,831.69	$1,347,414.65	$38,414.35	$4,452,509.40
G824001;Grounds	44,700	81.12	$0.00	$693,387.60	$0.00	$0.00	$0.00
Total:		**48.89**	**$4,660,786.38**	**$6,419,219.29**	**$1,347,414.65**	**$38,414.35**	**$4,452,509.40**

Deficiencies By Priority

Budget Estimate Total: $16,918,344.07

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):	67,842
Year Built:	1924
Last Renovation:	
Replacement Value:	$33,749,725
Repair Cost:	$16,224,956.47
Total FCI:	48.07 %
Total RSLI:	76.49 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B824001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S824001		

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	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	0.88 %	$11,453.97
B10 - Superstructure	37.00 %	0.35 %	$21,059.44
B20 - Exterior Enclosure	31.00 %	47.96 %	$1,834,099.11
B30 - Roofing	110.00 %	86.95 %	$675,116.19
C10 - Interior Construction	49.97 %	38.44 %	$639,894.56
C20 - Stairs	37.00 %	196.67 %	$188,133.03
C30 - Interior Finishes	105.40 %	16.69 %	$563,115.64
D10 - Conveying	105.71 %	351.52 %	$729,740.92
D20 - Plumbing	115.84 %	72.20 %	$1,000,160.67
D30 - HVAC	119.44 %	80.09 %	$6,044,362.56
D40 - Fire Protection	105.71 %	177.49 %	$970,510.11
D50 - Electrical	110.11 %	85.09 %	$3,393,127.49
E10 - Equipment	14.29 %	8.43 %	$91,066.82
E20 - Furnishings	12.50 %	43.68 %	$63,115.96
Totals:	**76.49 %**	**48.07 %**	**$16,224,956.47**

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.	67,842	100	1924	2024	2052	37.00 %	0.00 %	37			$1,248,293
A1030	Slab on Grade	$7.73	S.F.	67,842	100	1924	2024	2052	37.00 %	0.00 %	37			$524,419
A2010	Basement Excavation	$6.55	S.F.	67,842	100	1924	2024	2052	37.00 %	0.00 %	37			$444,365
A2020	Basement Walls	$12.70	S.F.	67,842	100	1924	2024	2052	37.00 %	1.33 %	37		$11,453.97	$861,593
B1010	Floor Construction	$75.10	S.F.	67,842	100	1924	2024	2052	37.00 %	0.41 %	37		$21,059.44	$5,094,934
B1020	Roof Construction	$13.88	S.F.	67,842	100	1924	2024	2052	37.00 %	0.00 %	37			$941,647
B2010	Exterior Walls	$36.91	S.F.	67,842	100	1924	2024	2052	37.00 %	7.49 %	37		$187,451.68	$2,504,048
B2020	Exterior Windows	$18.01	S.F.	67,842	40	1924	1964	2020	12.50 %	129.51 %	5		$1,582,371.28	$1,221,834
B2030	Exterior Doors	$1.45	S.F.	67,842	25	1924	1949	2042	108.00 %	65.34 %	27		$64,276.15	$98,371
B3010105	Built-Up	$37.76	S.F.	20,531	20	1924	1944	2037	110.00 %	87.08 %	22		$675,116.19	$775,251
B3010120	Single Ply Membrane	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$38.73	S.F.		25				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	20,531	20	1924	1944	2037	110.00 %	0.00 %	22			$1,232
C1010	Partitions	$17.91	S.F.	67,842	100	1924	2024	2052	37.00 %	15.54 %	37		$188,877.55	$1,215,050
C1020	Interior Doors	$3.51	S.F.	67,842	40	1924	1964	2057	105.00 %	189.40 %	42		$451,017.01	$238,125
C1030	Fittings	$3.12	S.F.	67,842	40	2000	2040		62.50 %	0.00 %	25			$211,667
C2010	Stair Construction	$1.41	S.F.	67,842	100	1924	2024	2052	37.00 %	196.67 %	37		$188,133.03	$95,657

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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	$13.21	S.F.	67,842	10	1924	1934	2027	120.00 %	5.81 %	12		$52,076.36	$896,193
C3010231	Vinyl Wall Covering	$0.97	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.	67,842	30	2000	2030		50.00 %	0.00 %	15			$178,424
C3020411	Carpet	$7.30	S.F.	2,500	10	2010	2020		50.00 %	0.00 %	5			$18,250
C3020412	Terrazzo & Tile	$75.52	S.F.	2,000	50	2000	2050		70.00 %	0.00 %	35			$151,040
C3020413	Vinyl Flooring	$9.68	S.F.	9,500	20	1990	2010	2037	110.00 %	153.26 %	22		$140,934.21	$91,960
C3020414	Wood Flooring	$22.27	S.F.	26,482	25	1924	1949	2042	108.00 %	49.00 %	27		$289,006.20	$589,754
C3020415	Concrete Floor Finishes	$0.97	S.F.	27,000	50	1924	1974	2020	10.00 %	300.52 %	5		$78,705.36	$26,190
C3030	Ceiling Finishes	$20.97	S.F.	67,842	25	1924	1949	2042	108.00 %	0.17 %	27		$2,393.51	$1,422,647
D1010	Elevators and Lifts	$3.06	S.F.	67,842	35			2052	105.71 %	351.52 %	37		$729,740.92	$207,597
D2010	Plumbing Fixtures	$13.52	S.F.	67,842	35	1924	1959	2055	114.29 %	42.08 %	40		$385,998.92	$917,224
D2020	Domestic Water Distribution	$1.68	S.F.	67,842	25	1924	1949	2045	120.00 %	246.85 %	30		$281,345.87	$113,975
D2030	Sanitary Waste	$2.90	S.F.	67,842	25	1924	1949	2045	120.00 %	169.16 %	30		$332,815.88	$196,742
D2040	Rain Water Drainage	$2.32	S.F.	67,842	30	1924	1954	2050	116.67 %	0.00 %	35			$157,393
D3020	Heat Generating Systems	$18.67	S.F.	67,842	35	1924	1959	2055	114.29 %	82.02 %	40		$1,038,883.34	$1,266,610
D3030	Cooling Generating Systems	$24.48	S.F.	67,842	30	1924	1954	2050	116.67 %	72.52 %	35		$1,204,454.53	$1,660,772
D3040	Distribution Systems	$42.99	S.F.	67,842	25	1924	1949	2045	120.00 %	75.16 %	30		$2,192,117.84	$2,916,528
D3050	Terminal & Package Units	$11.60	S.F.	67,842	20	1924	1944	2040	125.00 %	0.00 %	25			$786,967
D3060	Controls & Instrumentation	$13.50	S.F.	67,842	20	1924	1944	2040	125.00 %	175.67 %	25		$1,608,906.85	$915,867
D4010	Sprinklers	$7.05	S.F.	67,842	35	1924	1959	2052	105.71 %	202.91 %	37		$970,510.11	$478,286
D4020	Standpipes	$1.01	S.F.	67,842	35	1924	1959	2052	105.71 %	0.00 %	37			$68,520
D5010	Electrical Service/Distribution	$9.70	S.F.	67,842	30	1924	1954	2047	106.67 %	140.10 %	32		$921,977.43	$658,067
D5020	Lighting and Branch Wiring	$34.68	S.F.	67,842	20	1924	1944	2037	110.00 %	69.57 %	22		$1,636,836.01	$2,352,761
D5030	Communications and Security	$12.99	S.F.	67,842	15	1924	1939	2032	113.33 %	64.62 %	17		$569,517.23	$881,268
D5090	Other Electrical Systems	$1.41	S.F.	67,842	30	1924	1954	2047	106.67 %	276.82 %	32		$264,796.82	$95,657
E1020	Institutional Equipment	$4.82	S.F.	67,842	35	1924	1959	2020	14.29 %	27.85 %	5		$91,066.82	$326,998
E1090	Other Equipment	$11.10	S.F.	67,842	35	1924	1959	2020	14.29 %	0.00 %	5			$753,046
E2010	Fixed Furnishings	$2.13	S.F.	67,842	40	1924	1964	2020	12.50 %	43.68 %	5		$63,115.96	$144,503
								Total	**76.49 %**	**48.07 %**			**$16,224,956.47**	**$33,749,725**

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 or concrete 92%
glazed brick/block 4%
ceramic tile 4%

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

Note:
Concrete: 40%
Wood: 39%
VCT: 1.5%
VAT: 12.5%
CT: 3%
Carpet: 4%

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

Note:
painted concreted deck or plaster: 40%
2x4 suspended acoustical tile: 60%

Renewal Schedule

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

Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$16,224,956**	**$0**	**$0**	**$0**	**$0**	**$3,176,301**	**$0**	**$0**	**$0**	**$0**	**$0**	**$19,401,257**
*** 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	$11,454	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$11,454**
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	$21,059	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$21,059**
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	$187,452	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$187,452**
B2020 - Exterior Windows	$1,582,371	$0	$0	$0	$0	$1,558,085	$0	$0	$0	$0	$0	**$3,140,457**
B2030 - Exterior Doors	$64,276	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$64,276**
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	$675,116	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$675,116**
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	$188,878	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$188,878**

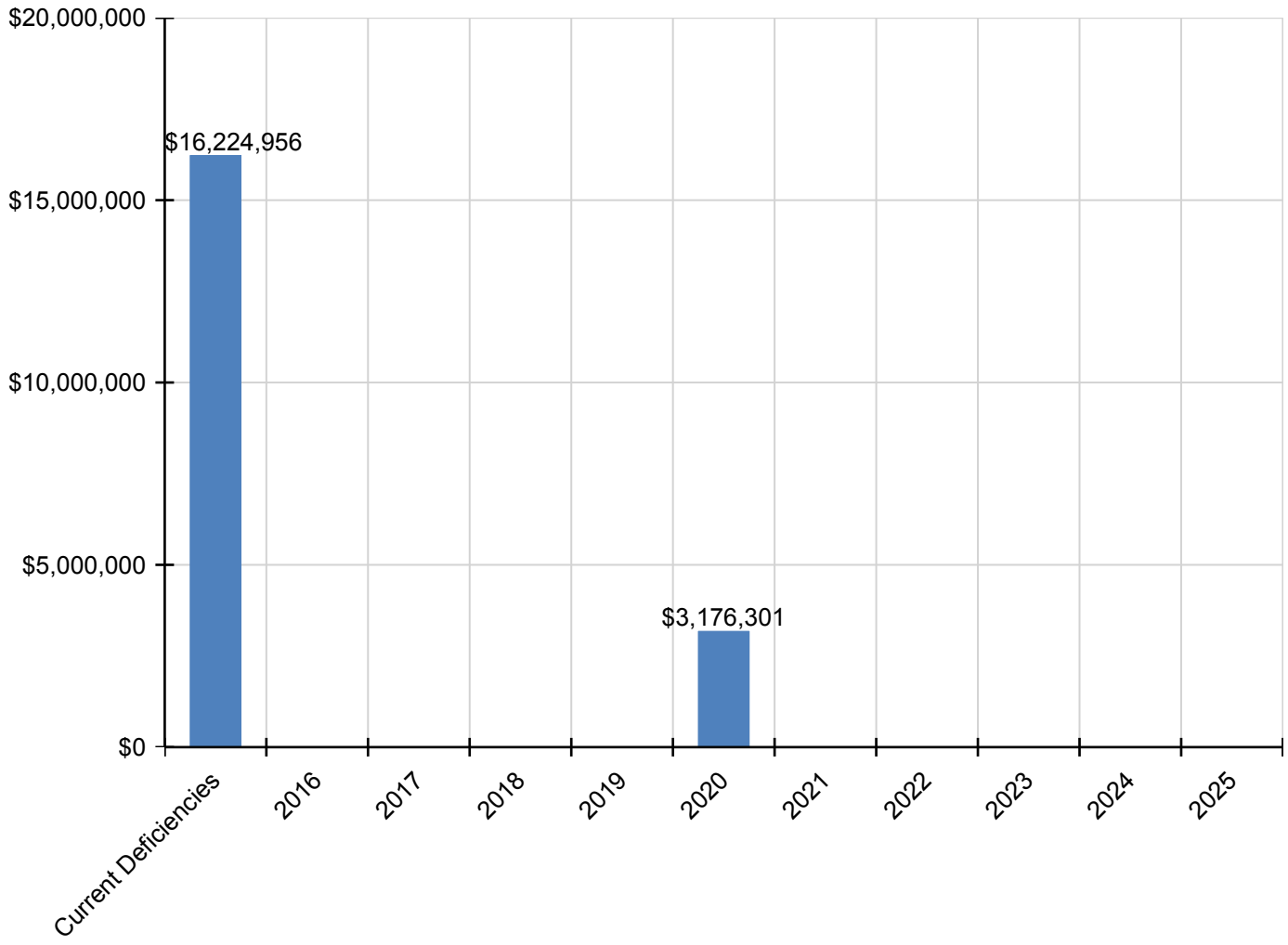
C1020 - Interior Doors	$451,017	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$451,017**
C1030 - Fittings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$188,133	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$188,133**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$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	$52,076	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$52,076**
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	$23,272	$0	$0	$0	$0	$0	**$23,272**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$140,934	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$140,934**
C3020414 - Wood Flooring	$289,006	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$289,006**
C3020415 - Concrete Floor Finishes	$78,705	$0	$0	$0	$0	$33,398	$0	$0	$0	$0	$0	**$112,103**
C3030 - Ceiling Finishes	$2,394	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,394**
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	$729,741	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$729,741**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$385,999	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$385,999**
D2020 - Domestic Water Distribution	$281,346	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$281,346**
D2030 - Sanitary Waste	$332,816	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$332,816**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$1,038,883	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,038,883**
D3030 - Cooling Generating Systems	$1,204,455	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,204,455**
D3040 - Distribution Systems	$2,192,118	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,192,118**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,608,907	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,608,907**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$970,510	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$970,510**
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	$921,977	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$921,977**
D5020 - Lighting and Branch Wiring	$1,636,836	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,636,836**
D5030 - Communications and Security	$569,517	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$569,517**
D5090 - Other Electrical Systems	$264,797	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$264,797**
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	$91,067	$0	$0	$0	$0	$416,989	$0	$0	$0	$0	$0	**$508,055**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$960,286	$0	$0	$0	$0	$0	**$960,286**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$63,116	$0	$0	$0	$0	$184,271	$0	$0	$0	$0	$0	**$247,387**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

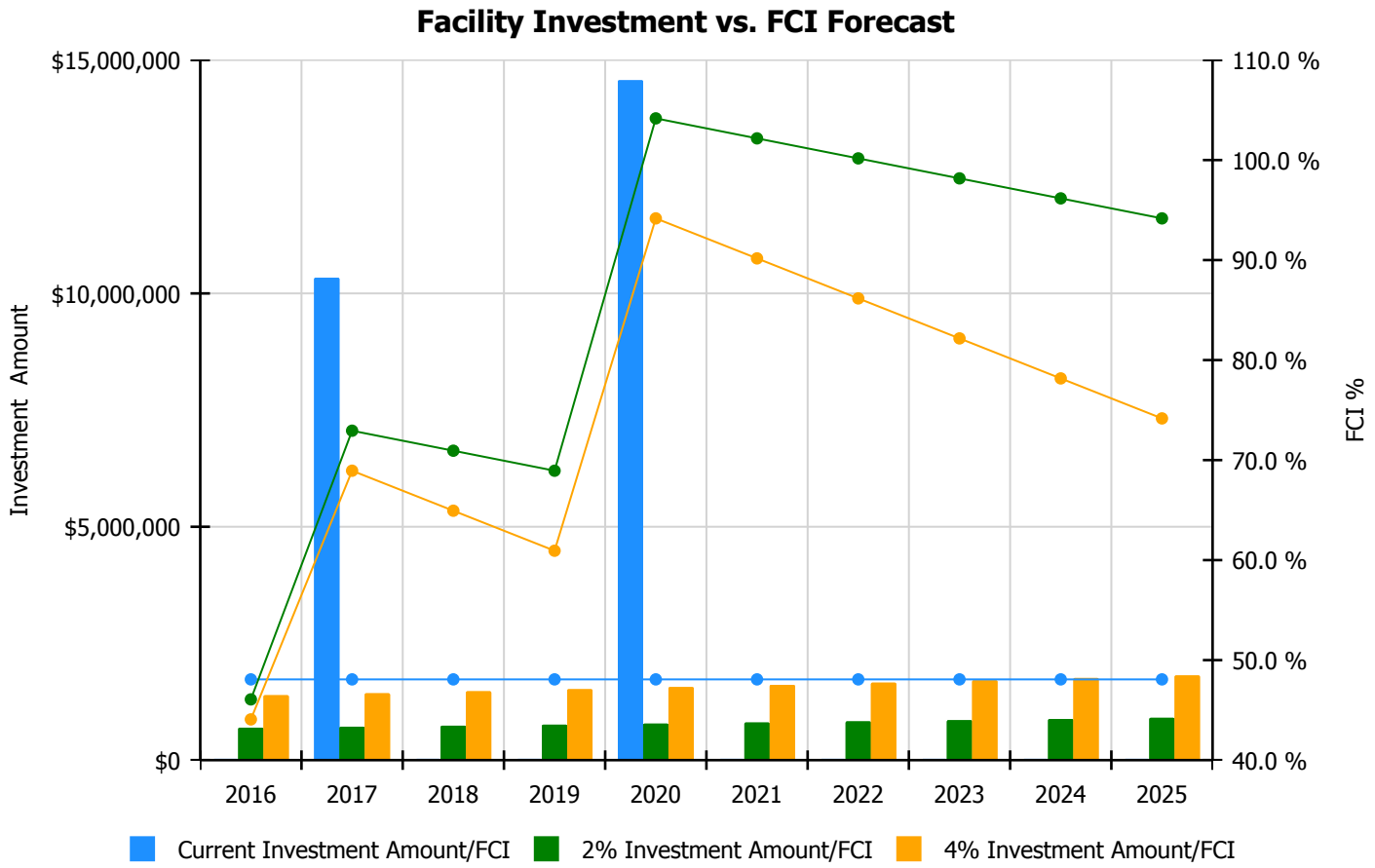
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

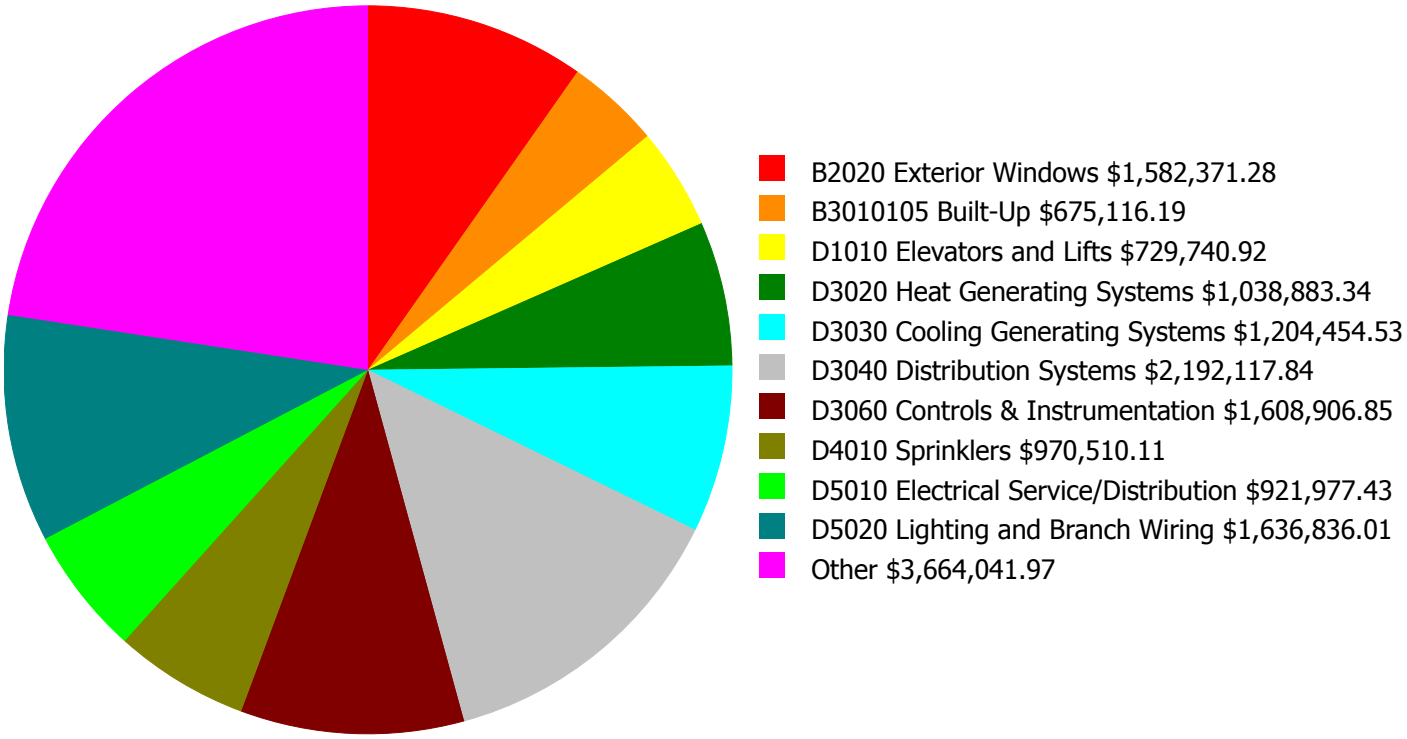
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 48.07%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$695,244.00	46.07 %	$1,390,489.00	44.07 %
2017	$10,334,500	$716,102.00	72.94 %	$1,432,203.00	68.94 %
2018	$0	$737,585.00	70.94 %	$1,475,169.00	64.94 %
2019	$0	$759,712.00	68.94 %	$1,519,425.00	60.94 %
2020	$14,566,499	$782,504.00	104.17 %	$1,565,007.00	94.17 %
2021	$0	$805,979.00	102.17 %	$1,611,957.00	90.17 %
2022	$0	$830,158.00	100.17 %	$1,660,316.00	86.17 %
2023	$0	$855,063.00	98.17 %	$1,710,126.00	82.17 %
2024	$0	$880,715.00	96.17 %	$1,761,429.00	78.17 %
2025	$0	$907,136.00	94.17 %	$1,814,272.00	74.17 %
Total:	**$24,900,999**	**$7,970,198.00**		**$15,940,393.00**	

Deficiency Summary by System

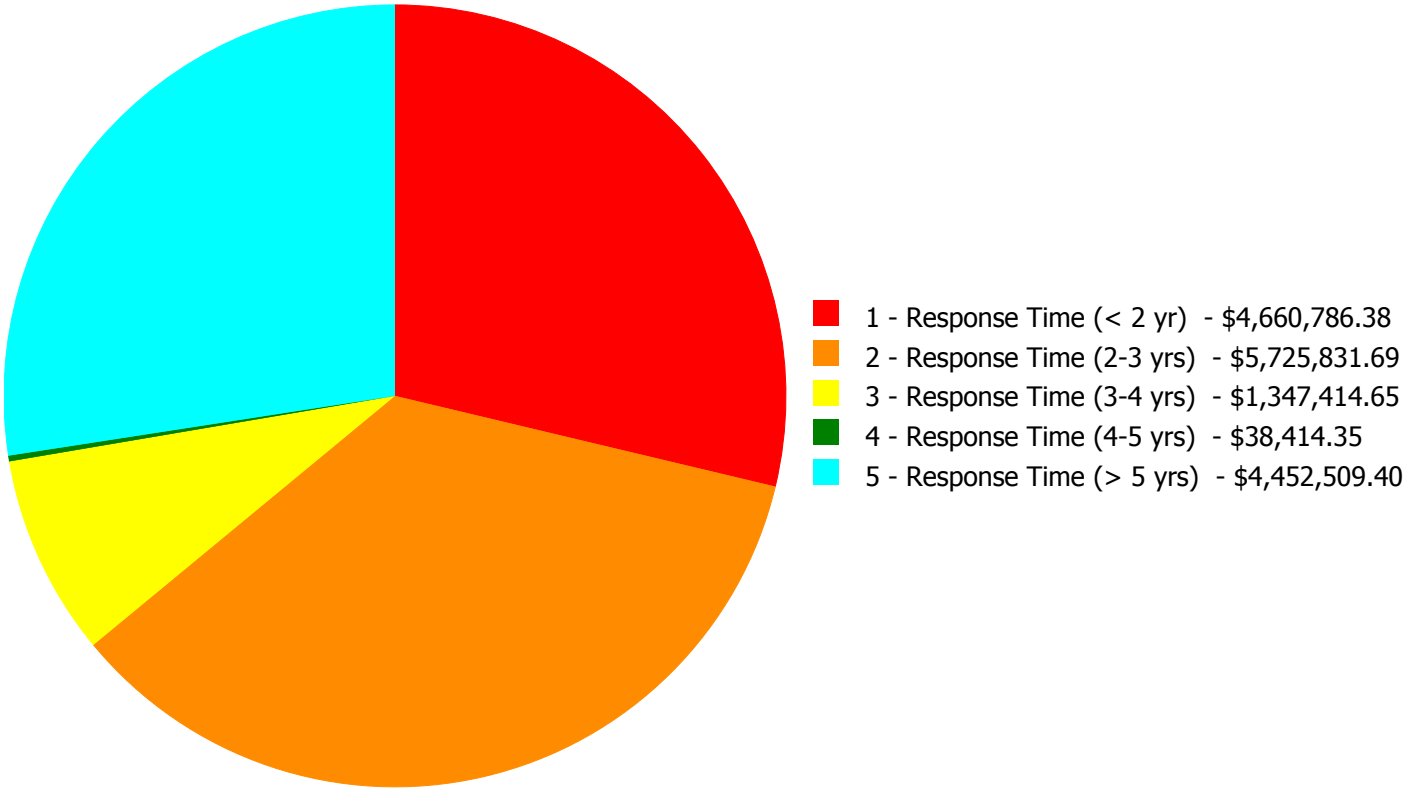
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $16,224,956.47

Deficiency Summary by Priority

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



Budget Estimate Total: $16,224,956.47

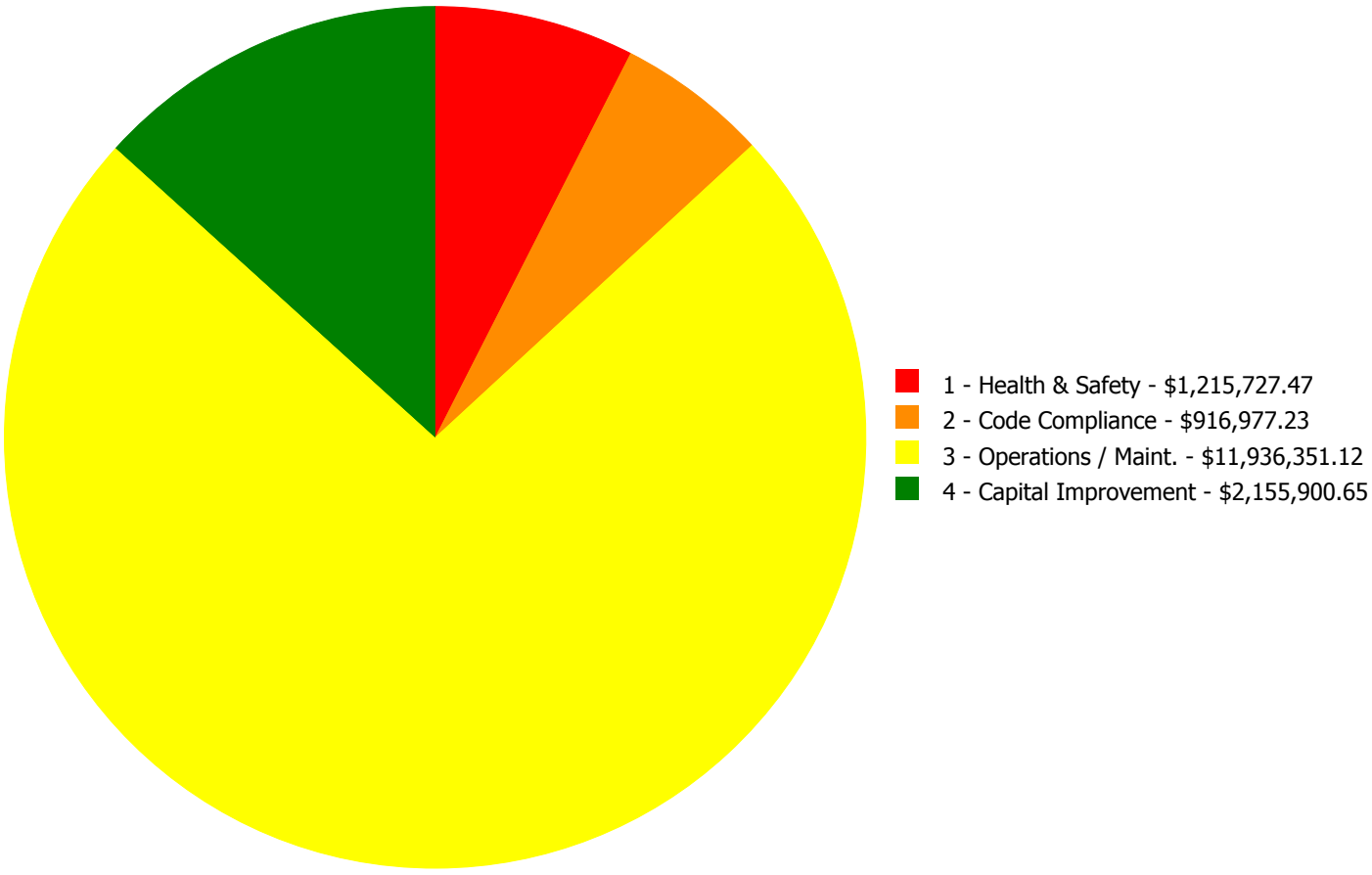
Deficiency By Priority Investment Table

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
A2020	Basement Walls	$0.00	$11,453.97	$0.00	$0.00	$0.00	$11,453.97
B1010	Floor Construction	$0.00	$21,059.44	$0.00	$0.00	$0.00	$21,059.44
B2010	Exterior Walls	$0.00	$187,451.68	$0.00	$0.00	$0.00	$187,451.68
B2020	Exterior Windows	$0.00	$1,582,371.28	$0.00	$0.00	$0.00	$1,582,371.28
B2030	Exterior Doors	$0.00	$64,276.15	$0.00	$0.00	$0.00	$64,276.15
B3010105	Built-Up	$675,116.19	$0.00	$0.00	$0.00	$0.00	$675,116.19
C1010	Partitions	$130,056.89	$58,820.66	$0.00	$0.00	$0.00	$188,877.55
C1020	Interior Doors	$0.00	$451,017.01	$0.00	$0.00	$0.00	$451,017.01
C2010	Stair Construction	$187,236.31	$896.72	$0.00	$0.00	$0.00	$188,133.03
C3010230	Paint & Covering	$0.00	$52,076.36	$0.00	$0.00	$0.00	$52,076.36
C3020413	Vinyl Flooring	$0.00	$140,934.21	$0.00	$0.00	$0.00	$140,934.21
C3020414	Wood Flooring	$0.00	$289,006.20	$0.00	$0.00	$0.00	$289,006.20
C3020415	Concrete Floor Finishes	$0.00	$78,705.36	$0.00	$0.00	$0.00	$78,705.36
C3030	Ceiling Finishes	$0.00	$0.00	$2,393.51	$0.00	$0.00	$2,393.51
D1010	Elevators and Lifts	$0.00	$729,740.92	$0.00	$0.00	$0.00	$729,740.92
D2010	Plumbing Fixtures	$0.00	$385,998.92	$0.00	$0.00	$0.00	$385,998.92
D2020	Domestic Water Distribution	$0.00	$0.00	$0.00	$0.00	$281,345.87	$281,345.87
D2030	Sanitary Waste	$0.00	$0.00	$332,815.88	$0.00	$0.00	$332,815.88
D3020	Heat Generating Systems	$0.00	$0.00	$1,012,205.26	$0.00	$26,678.08	$1,038,883.34
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$1,204,454.53	$1,204,454.53
D3040	Distribution Systems	$222,597.03	$0.00	$0.00	$0.00	$1,969,520.81	$2,192,117.84
D3060	Controls & Instrumentation	$0.00	$1,608,906.85	$0.00	$0.00	$0.00	$1,608,906.85
D4010	Sprinklers	$0.00	$0.00	$0.00	$0.00	$970,510.11	$970,510.11
D5010	Electrical Service/Distribution	$921,977.43	$0.00	$0.00	$0.00	$0.00	$921,977.43
D5020	Lighting and Branch Wiring	$1,636,836.01	$0.00	$0.00	$0.00	$0.00	$1,636,836.01
D5030	Communications and Security	$531,102.88	$0.00	$0.00	$38,414.35	$0.00	$569,517.23
D5090	Other Electrical Systems	$264,796.82	$0.00	$0.00	$0.00	$0.00	$264,796.82
E1020	Institutional Equipment	$91,066.82	$0.00	$0.00	$0.00	$0.00	$91,066.82
E2010	Fixed Furnishings	$0.00	$63,115.96	$0.00	$0.00	$0.00	$63,115.96
	Total:	$4,660,786.38	$5,725,831.69	$1,347,414.65	$38,414.35	$4,452,509.40	$16,224,956.47

Deficiency Summary by Category

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



Budget Estimate Total: $16,224,956.47

Deficiency Details by Priority

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

Priority 1 - Response Time (< 2 yr):

System: B3010105 - Built-Up

Location: roof
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Remove and Replace Built Up Roof
Qty: 20,000.00
Unit of Measure: S.F.
Estimate: $675,116.19
Assessor Name: System
Date Created: 10/15/2015

Notes: Remove and replace existing flat roof and insulation; 5 levels (20,000sf)

System: C1010 - Partitions

Location: stairway walls
Distress: Life Safety / NFPA / PFD
Category: 1 - Health & Safety
Priority: 1 - Response Time (< 2 yr)
Correction: Install fire rated walls and door where required - insert number of doors
Qty: 1,000.00
Unit of Measure: S.F.
Estimate: $77,344.97
Assessor Name: System
Date Created: 10/15/2015

Notes: Replace stair doors and glass/metal stairway enclosures with fire rated assembly (12 doors; 1000sf wall enclosure)

System: C1010 - Partitions

Location: open stairways

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Install fire rated walls and door where required - insert number of doors

Qty: 1,500.00

Unit of Measure: S.F.

Estimate: $52,711.92

Assessor Name: System

Date Created: 10/15/2015

Notes: Enclose 2 stairways connecting first floor with basement with fire rated construction (1500sf; (4)3x7 doors)

System: C2010 - Stair Construction

Location: 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: 400.00

Unit of Measure: L.F.

Estimate: $187,236.31

Assessor Name: System

Date Created: 10/15/2015

Notes: Remove and replace stairway handrails and guards with code compliant systems 4 stories 4 stairs (400 lf railing system)

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

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

Qty: 67,842.00

Unit of Measure: S.F.

Estimate: $222,597.03

Assessor Name: System

Date Created: 11/16/2015

Notes: Conduct a steam trap survey to identify and replace failed traps passing live steam into the condensate piping system.

System: D5010 - Electrical Service/Distribution

Location: Boiler Room

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: $516,577.89

Assessor Name: System

Date Created: 08/23/2015

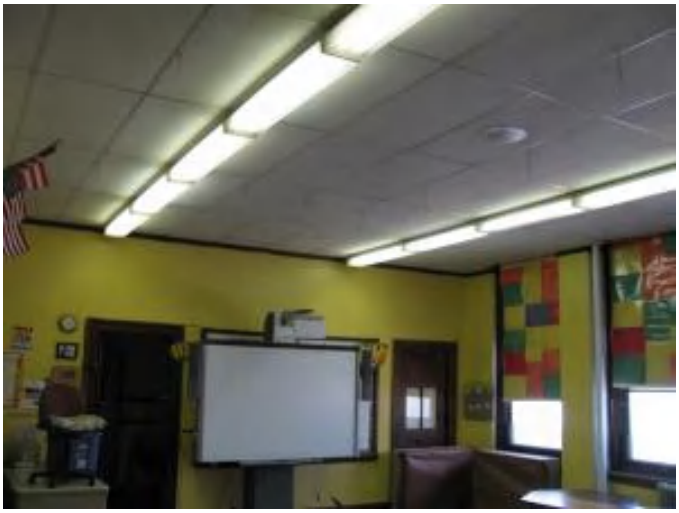
Notes: Upgrade the existing electrical service with a new service. Replace the existing switchboard with a new 2000A, 120/208V, 3PH, 4 wire switchboard for providing more capacity for future AC loads. and other 208volts loads throughout the building.

System: D5010 - Electrical Service/Distribution

Location: Entier 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: $405,399.54
Assessor Name: System
Date Created: 09/10/2015

Notes: Replace the entire distribution system with new panels and new wiring/conduits. Provide arc flush label on the electrical equipment. Estimated 16 panel boards.

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: $1,083,155.02
Assessor Name: System
Date Created: 09/10/2015

Notes: Replace all lighting fixtures with new fluorescent lighting fixtures with T-5 lamp throughout all buildings. Provide emergency power to sufficient number of lights in corridors and egress ways.

System: D5020 - Lighting and Branch Wiring

Location: Entier 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: $485,790.39

Assessor Name: System

Date Created: 09/10/2015

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: Exterior walls

Distress: Security Issue

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Add Exterior Lighting

Qty: 1.00

Unit of Measure: Ea.

Estimate: $42,636.70

Assessor Name: System

Date Created: 09/10/2015

Notes: Provide wall mounted flood lights on exterior walls to secure the building. Estimated 12 each.

System: D5020 - Lighting and Branch Wiring

Location: B824001;Disston
Distress: Health Hazard / Risk
Category: 1 - Health & Safety
Priority: 1 - Response Time (< 2 yr)
Correction: Add Lighting Fixtures
Qty: 25.00
Unit of Measure: Ea.
Estimate: $25,253.90
Assessor Name: System
Date Created: 09/10/2015

Notes: Replace all exit signs with battery pack type exit signs. Estimated 25 each.

System: D5030 - Communications and Security

Location: Entier Building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Replace fire alarm system
Qty: 1.00
Unit of Measure: S.F.
Estimate: $314,330.20
Assessor Name: System
Date Created: 09/10/2015

Notes: Replace existing fire alarm system with an automatic fire alarm system including smoke detectors in corridors and other recommended areas per NEC. Install horn/strobes in class rooms, corridors, offices, toilets, library and other recommended areas per codes.

System: D5030 - Communications and Security

Location: Entire Building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Add/Replace Clock System or Components
Qty: 1.00
Unit of Measure: Ea.
Estimate: $119,535.50
Assessor Name: System
Date Created: 09/10/2015

Notes: Replace existing master clock system.

System: D5030 - Communications and Security

Location: Auditorium
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 1 - Response Time (< 2 yr)
Correction: Add/Replace Sound System
Qty: 1.00
Unit of Measure: LS
Estimate: $97,237.18
Assessor Name: System
Date Created: 09/10/2015

Notes: Provide new sound system including a freestanding 19” rack backstage area with a mixer, amplifiers, CD player, cassette player, AM-FM radio, graphic or parametric equalizer, and receivers.

System: D5090 - Other Electrical Systems

Location: Basement

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 1 - Response Time (< 2 yr)

Correction: Replace standby generator system

Qty: 1.00

Unit of Measure: Ea.

Estimate: $238,937.38

Assessor Name: System

Date Created: 09/10/2015

Notes: Replace existing generator with new 100KW generator

System: D5090 - Other Electrical Systems

Location: Roof

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Repair Lightning Protection System

Qty: 1.00

Unit of Measure: Job

Estimate: $25,859.44

Assessor Name: System

Date Created: 09/10/2015

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

System: E1020 - Institutional Equipment

This deficiency has no image.

Location: Auditorium

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 1 - Response Time (< 2 yr)

Correction: Add/Replace Stage Theatrical Lighting System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $91,066.82

Assessor Name: System

Date Created: 09/10/2015

Notes: Provide new stage lighting and lighting controller in the Auditorium.

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

System: A2020 - Basement Walls

Location: mechanical room

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair concrete wall in poor condition including rebar dowelling - insert the SF of wall area

Qty: 50.00

Unit of Measure: S.F.

Estimate: $11,453.97

Assessor Name: System

Date Created: 10/15/2015

Notes: Repair crack in foundation and pilaster (50 lf)

System: B1010 - Floor Construction

Location: fire stair towers

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair spalled concrete floor - pick the correct repair and insert the SF of floor area

Qty: 500.00

Unit of Measure: S.F.

Estimate: $21,059.44

Assessor Name: System

Date Created: 10/15/2015

Notes: Repair spalling underside of concrete decks in both fire stair towers, all 4 levels (500sf)

System: B2010 - Exterior Walls

Location: rear walls / lintels

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove and replacing failing steel lintels in brick wall construction

Qty: 200.00

Unit of Measure: L.F.

Estimate: $95,605.01

Assessor Name: System

Date Created: 10/15/2015

Notes: Replace lintels over rear windows (24) 8ft lintels

System: B2010 - Exterior Walls

Location: exterior walls (rear)

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: 1,500.00

Unit of Measure: S.F.

Estimate: $44,599.94

Assessor Name: System

Date Created: 10/15/2015

Notes: Repoint cracked masonry adjacent to rear window lintels and in rear walls; repoint retaining wall on Gillespie St (1500sf)

System: B2010 - Exterior Walls

Location: painted lower part of exterior walls
Distress: Appearance
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Repaint exterior walls - CMU
Qty: 5,000.00
Unit of Measure: S.F.
Estimate: $36,309.38
Assessor Name: System
Date Created: 10/15/2015

Notes: Repaint lower part of exterior brick foundation wall (5000sf)

System: B2010 - Exterior Walls

Location: limestone band exterior walls
Distress: Appearance
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Sooty and dirty walls - powerwash
Qty: 10,000.00
Unit of Measure: S.F.
Estimate: $10,937.35
Assessor Name: System
Date Created: 10/15/2015

Notes: Powerwash limestone entrance, horizontal band, and brick below (10,000sf)

System: B2020 - Exterior Windows

Location: exterior windows

Distress: Failing

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: 330.00

Unit of Measure: Ea.

Estimate: $1,582,371.28

Assessor Name: System

Date Created: 10/15/2015

Notes: Replace all exterior windows with insulated single hung units, approx. av. size 4'x8' (330 ea)

System: B2030 - Exterior Doors

Location: exterior doors

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 8.00

Unit of Measure: Ea.

Estimate: $61,887.13

Assessor Name: System

Date Created: 10/15/2015

Notes: Replace all metal exterior doors and frames with ADA and code compliant exit hardware (8)3x7 doors

System: B2030 - Exterior Doors

Location: front doors

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Refinish and repaint exterior doors - per leaf

Qty: 4.00

Unit of Measure: Ea.

Estimate: $2,389.02

Assessor Name: System

Date Created: 10/15/2015

Notes: Refinish 2 pairs of decorative wood entrance doors (4 wood doors and round top clerestory)

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: System

Date Created: 10/15/2015

Notes: Remove folding wood partitions; replace with gypsum board and metal stud walls (8x 300sf=2400sf)

System: C1010 - Partitions

Location: corridors

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Remove non-rated interior glass panels and replace with studs, gypsum board, paint (E) wall

Qty: 200.00

Unit of Measure: S.F.

Estimate: $5,349.87

Assessor Name: System

Date Created: 10/15/2015

Notes: Remove non-rated glass panels between classrooms and corridors; fill with one hour rated gyp bd sys. Approx. (20) 3x3 windows (200sf)

System: C1020 - Interior Doors

Location: classroom and office doors

Distress: Appearance

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: System

Date Created: 10/15/2015

Notes: Remove and replace all wood interior doors, frames and hardware in classrooms and offices (80)3x7

System: C1020 - Interior Doors

Location: classrooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Refinish interior doors

Qty: 70.00

Unit of Measure: Ea.

Estimate: $57,972.81

Assessor Name: System

Date Created: 10/15/2015

Notes: Refinish closet doors in classrooms (70)3x7

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: 70.00

Unit of Measure: Ea.

Estimate: $16,060.56

Assessor Name: System

Date Created: 10/15/2015

Notes: Provide security hardware for classrooms and offices, locking from inside (80).

System: C1020 - Interior Doors

Location: basement

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Repair and repaint HM door frames - per frame

Qty: 28.00

Unit of Measure: Ea.

Estimate: $4,636.52

Assessor Name: System

Date Created: 10/15/2015

Notes: Repaint basement steel doors, frames, and provide new hardware in mechanical rooms and fire exit stairways (12+16) 3x7

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: System

Date Created: 10/15/2015

Notes: Regrout some joints between limestone block tread/risers at some exterior stairs (10 risers, 6ft long)

System: C3010230 - Paint & Covering

Location: interior walls

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: 5,000.00

Unit of Measure: S.F.

Estimate: $33,637.01

Assessor Name: System

Date Created: 10/15/2015

Notes: Repair water damage, cracks, and repaint some interior plaster walls (5000sf)

System: C3010230 - Paint & Covering

Location: mechanical room

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: 3,000.00

Unit of Measure: S.F.

Estimate: $18,439.35

Assessor Name: System

Date Created: 10/15/2015

Notes: Strip and repaint concrete foundation (basement) walls in mechanical rooms (3000sf)

System: C3020413 - Vinyl Flooring

Location: gym and other rooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 8,500.00

Unit of Measure: S.F.

Estimate: $128,916.68

Assessor Name: System

Date Created: 10/15/2015

Notes: Replace VAT floors using proper asbestos abatement procedures if determined asbestos is present. (8500sf)

System: C3020413 - Vinyl Flooring

Location: classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace VCT

Qty: 1,000.00

Unit of Measure: S.F.

Estimate: $12,017.53

Assessor Name: System

Date Created: 10/15/2015

Notes: Remove and replace all 12”x12” VCT floors in classrooms (1000sf)

System: C3020414 - Wood Flooring

Location: classrooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Refinish wood floors

Qty: 26,842.00

Unit of Measure: S.F.

Estimate: $289,006.20

Assessor Name: System

Date Created: 10/15/2015

Notes: Strip, sand, repair and refinish all wood floors in classrooms and in auditorium, excluding recently refinished floors (23,482sf)

System: C3020415 - Concrete Floor Finishes

Location: basement, corridors, stairs

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Clean and reseal concrete floors

Qty: 27,000.00

Unit of Measure: S.F.

Estimate: $78,705.36

Assessor Name: System

Date Created: 10/15/2015

Notes: Clean and repaint basement floor in mechanical rooms; clean and reseal concrete floors in building hallways and stairways (27,000sf)

System: D1010 - Elevators and Lifts

This deficiency has no image.

Location: to be determined

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Add interior elevator - 5 floors - adjust the electrical run lengths to hook up the elevator

Qty: 1.00

Unit of Measure: Ea.

Estimate: $729,740.92

Assessor Name: System

Date Created: 10/15/2015

Notes: Provide elevator to serve four floors and auditorium.

System: D2010 - Plumbing Fixtures

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 32.00

Unit of Measure: Ea.

Estimate: $238,788.73

Assessor Name: System

Date Created: 11/16/2015

Notes: Replace all water closets in the building with lower flow fixtures, as the fixtures are original.

System: D2010 - Plumbing Fixtures

Location: Throughout the building

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: 6.00

Unit of Measure: Ea.

Estimate: $94,157.37

Assessor Name: System

Date Created: 11/16/2015

Notes: Replace the wall hung drinking fountains and integral refrigerated coolers in the corridors and at the restrooms. These units are well beyond their service life and most are NOT accessible type.

System: D2010 - Plumbing Fixtures

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace wall hung urinals

Qty: 9.00

Unit of Measure: Ea.

Estimate: $29,871.75

Assessor Name: System

Date Created: 11/16/2015

Notes: Replace all urinals in the building with lower flow fixtures, as the fixtures are original.

System: D2010 - Plumbing Fixtures

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 3.00

Unit of Measure: Ea.

Estimate: $20,448.28

Assessor Name: System

Date Created: 11/16/2015

Notes: Replace service sinks (janitor sinks) in the building.

System: D2010 - Plumbing Fixtures

Location: Throughout the building

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: 16.00

Unit of Measure: Ea.

Estimate: $2,732.79

Assessor Name: System

Date Created: 11/16/2015

Notes: Replace all lavatories in the building with lower flow fixtures, as the fixtures are original.

System: D3060 - Controls & Instrumentation

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 75,000.00

Unit of Measure: S.F.

Estimate: $1,608,906.85

Assessor Name: System

Date Created: 11/17/2015

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

System: E2010 - Fixed Furnishings

Location: auditorium

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 80.00

Unit of Measure: Ea.

Estimate: $63,115.96

Assessor Name: System

Date Created: 10/15/2015

Notes: Repair or replace damaged folding wood auditorium chairs (80)

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

System: C3030 - Ceiling Finishes

Location: ceilings

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Re-paint ceilings - SF of ceilings

Qty: 500.00

Unit of Measure: S.F.

Estimate: $2,393.51

Assessor Name: System

Date Created: 10/15/2015

Notes: Repaint plaster ceilings where damaged by water (500sf)

System: D2030 - Sanitary Waste

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 67,842.00

Unit of Measure: S.F.

Estimate: $332,815.88

Assessor Name: System

Date Created: 11/16/2015

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

System: D3020 - Heat Generating Systems

Location: Boiler Mechanical Equipment Room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 2.00

Unit of Measure: Ea.

Estimate: $1,012,205.26

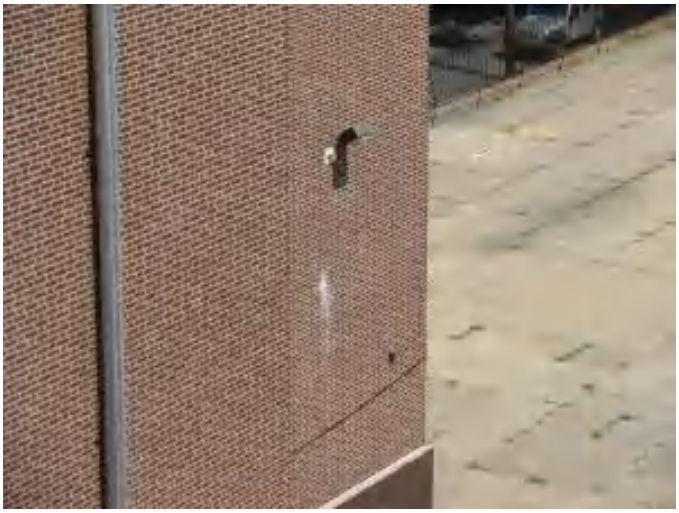
Assessor Name: System

Date Created: 11/17/2015

Notes: Remove the two 4,061 MBH Weil McLain 94 series steam boilers estimated to have been in service since the 1970s. Remove existing steam boilers and steam distribution system. Install hot water boilers and hot water distribution system.

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

System: D5030 - Communications and Security



Location: Exterior Walls

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add/Replace Paging System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $38,414.35

Assessor Name: System

Date Created: 09/10/2015

Notes: Provide outdoor speakers for cover the school yard. Estimated 4each.

Priority 5 - Response Time (> 5 yrs):

System: D2020 - Domestic Water Distribution

Location: Throughout the building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 5 - Response Time (> 5 yrs)
Correction: Replace domestic water piping (150 KSF)
Qty: 67,842.00
Unit of Measure: S.F.
Estimate: $281,345.87
Assessor Name: System
Date Created: 11/16/2015

Notes: Inspect and replace the original as needed the domestic water piping in the building

System: D3020 - Heat Generating Systems

Location: Boiler Mechanical Equiupment 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: System
Date Created: 11/17/2015

Notes: Replace duplex fuel oil pumps.

System: D3030 - Cooling Generating Systems

Location: Adjacent to building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 75,000.00

Unit of Measure: S.F.

Estimate: $1,204,454.53

Assessor Name: System

Date Created: 11/17/2015

Notes: Remove the window air conditioning units and install a 250 ton air-cooled chiller on the roof with chilled water distribution piping and pumps located in a mechanical room on the basement level to supply more reliable air conditioning for the building with a much longer service life.

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 20.00

Unit of Measure: C

Estimate: $1,661,219.77

Assessor Name: System

Date Created: 11/17/2015

Notes: Replace the existing steam radiators throughout the building with new fan coil units designed to provide adequate ventilation per ASHRAE Std 62. The new units shall be equipped with hot water / chilled water coils and integral heat recovery wheels. Install steam converters in the existing boiler room with circulating pumps, distribution piping and controls to provide heating hot water for the new coils.

System: D3040 - Distribution Systems

Location: Gym

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 6,000.00

Unit of Measure: Ea.

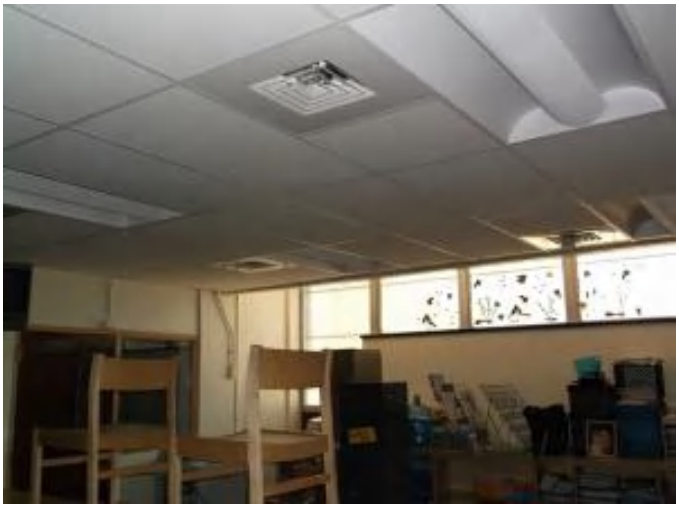
Estimate: $308,301.04

Assessor Name: System

Date Created: 11/17/2015

Notes: Provide ventilation, heating and cooling for the gymnasium by installing a packaged roof top unit.

System: D4010 - Sprinklers



Location: Throughout the building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 5 - Response Time (> 5 yrs)

Correction: Install a fire protection sprinkler system

Qty: 67,842.00

Unit of Measure: S.F.

Estimate: $970,510.11

Assessor Name: System

Date Created: 11/17/2015

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

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, 4088 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Boiler Mechanical Equipment Room	Weil McLain	1994			35			$94,386.50	$207,650.30
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, hot water, gross output, 4088 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Boiler Mechanical Equipment Room	Weil McLain	1994			35			$94,386.50	$207,650.30
D5010 Electrical Service/Distribution	Panelboards, 3 pole 4 wire, main circuit breaker, 120/208 V, 400 amp	1.00	Ea.	Boiler Room in the basement					30	1924	2025	$4,626.45	$5,089.10
D5010 Electrical Service/Distribution	Switchboards, pressure switch, 4 wire, with ground fault, 120/208 V, 1200 amp, incl CT compartment, excl CT's or PT's	1.00	Ea.	Room # 05 in basement					30	1924	2017	$32,416.20	$35,657.82
												Total:	**$456,047.52**

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):	44,700
Year Built:	1924
Last Renovation:	
Replacement Value:	$854,745
Repair Cost:	$693,387.60
Total FCI:	81.12 %
Total RSLI:	56.29 %

Description:

Attributes:

General Attributes:

Bldg ID:	S824001	Site ID:	S824001

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	41.45 %	105.01 %	$693,387.60
G40 - Site Electrical Utilities	106.67 %	0.00 %	$0.00
Totals:	**56.29 %**	**81.12 %**	**$693,387.60**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2010	Roadways	$11.52	S.F.		30				0.00 %	0.00 %				$0
G2020	Parking Lots	$7.65	S.F.		30				0.00 %	0.00 %				$0
G2030	Pedestrian Paving	$11.52	S.F.	38,300	40	1950	1990	2020	12.50 %	115.66 %	5		$510,308.63	$441,216
G2040	Site Development	$4.36	S.F.	44,700	25	1924	1949	2042	108.00 %	93.94 %	27		$183,078.97	$194,892
G2050	Landscaping & Irrigation	$3.78	S.F.	6,400	15	1924	1939	2020	33.33 %	0.00 %	5			$24,192
G4020	Site Lighting	$3.58	S.F.	44,700	30	1924	1954	2047	106.67 %	0.00 %	32			$160,026
G4030	Site Communications & Security	$0.77	S.F.	44,700	30	1924	1954	2047	106.67 %	0.00 %	32			$34,419
								Total	**56.29 %**	**81.12 %**			**$693,387.60**	**$854,745**

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.

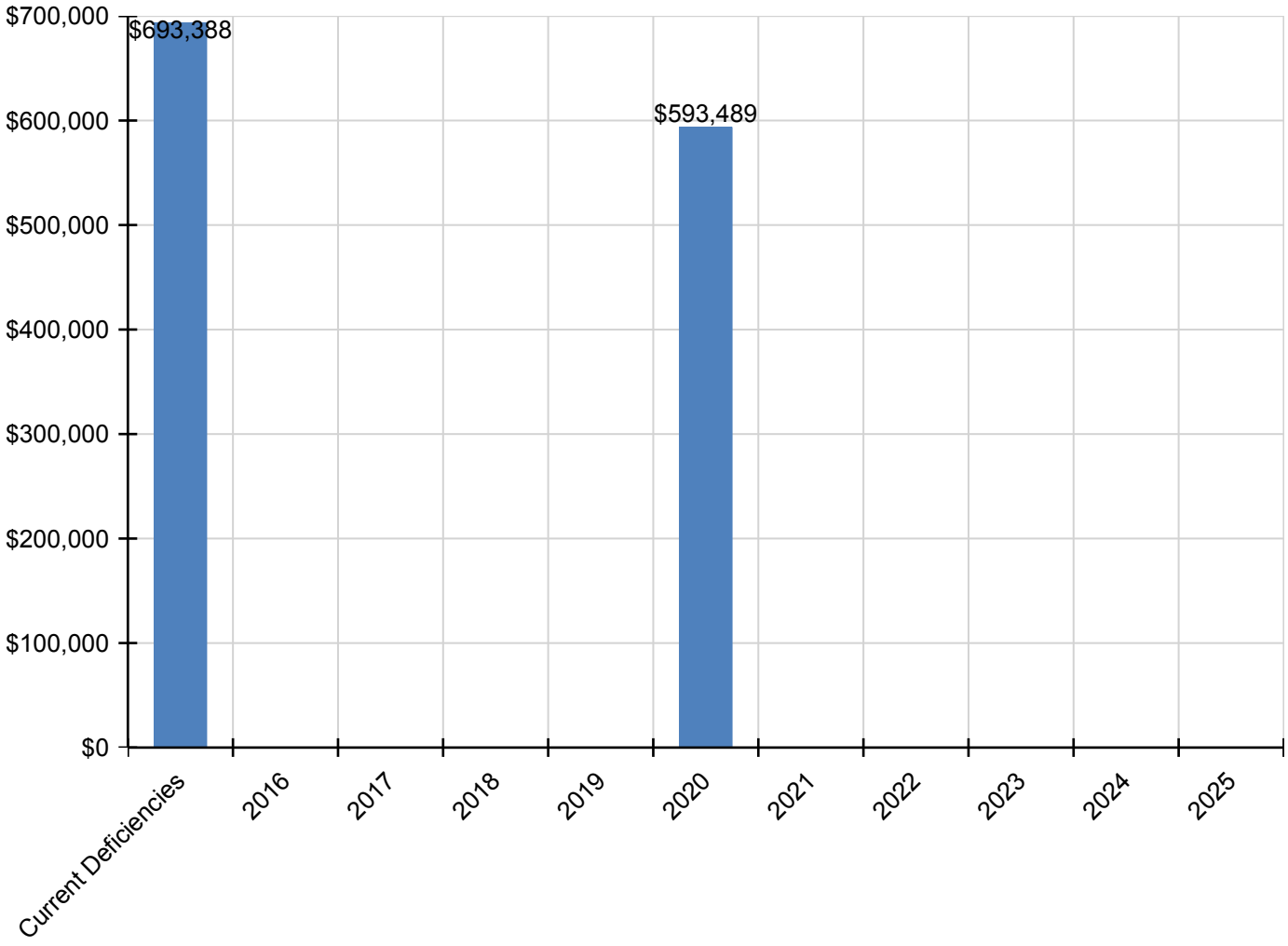
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$693,388**	**$0**	**$0**	**$0**	**$0**	**$593,489**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,286,877**
G - Building Sitework	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G20 - Site Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2010 - Roadways	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2020 - Parking Lots	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2030 - Pedestrian Paving	$510,309	$0	$0	$0	$0	$562,640	$0	$0	$0	$0	$0	**$1,072,948**
G2040 - Site Development	$183,079	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$183,079**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$30,849	$0	$0	$0	$0	$0	**$30,849**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

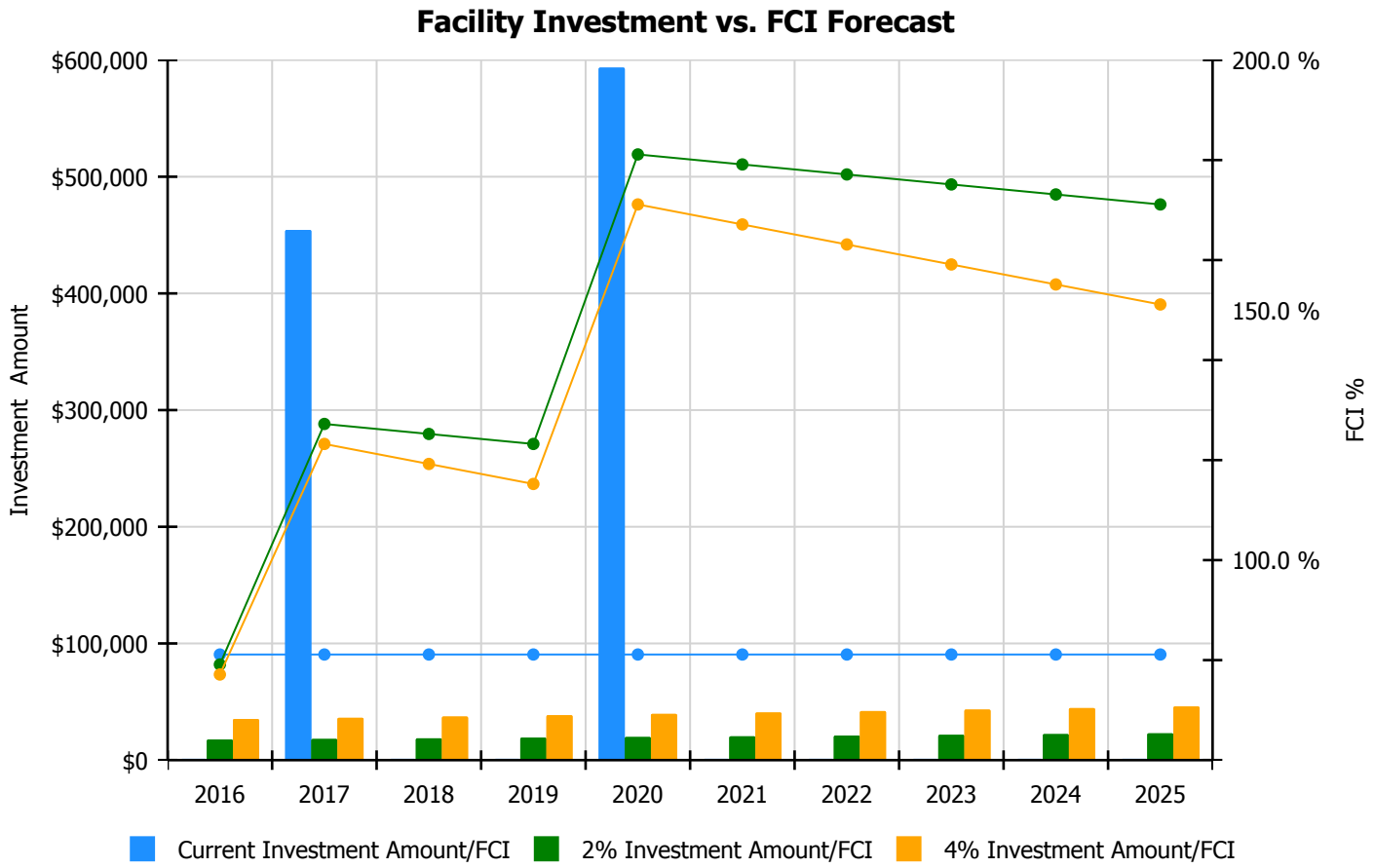
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

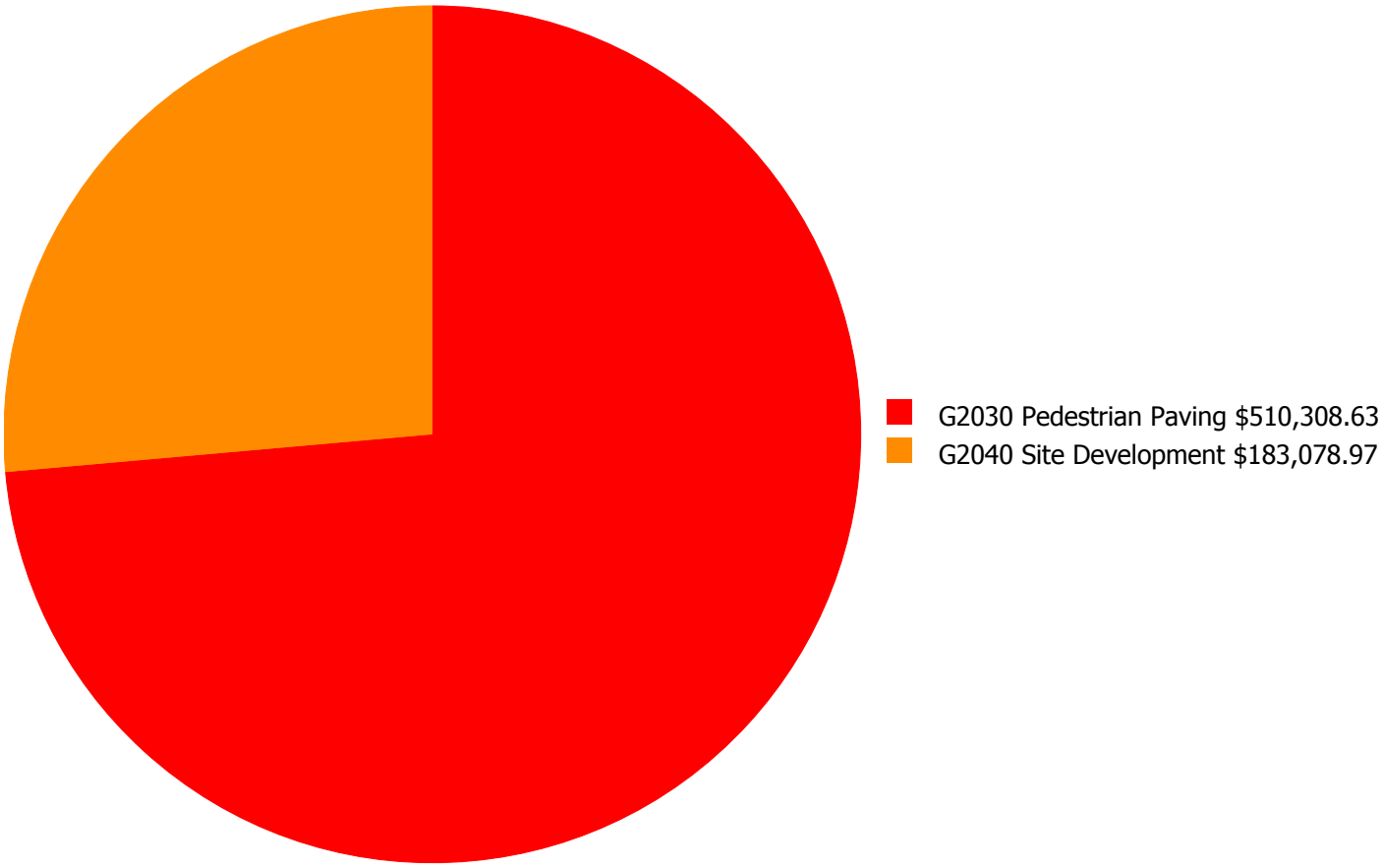
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 81.12%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$17,608.00	79.12 %	$35,215.00	77.12 %
2017	$454,353	$18,136.00	127.23 %	$36,272.00	123.23 %
2018	$0	$18,680.00	125.23 %	$37,360.00	119.23 %
2019	$0	$19,240.00	123.23 %	$38,481.00	115.23 %
2020	$593,489	$19,818.00	181.12 %	$39,635.00	171.12 %
2021	$0	$20,412.00	179.12 %	$40,824.00	167.12 %
2022	$0	$21,025.00	177.12 %	$42,049.00	163.12 %
2023	$0	$21,655.00	175.12 %	$43,311.00	159.12 %
2024	$0	$22,305.00	173.12 %	$44,610.00	155.12 %
2025	$0	$22,974.00	171.12 %	$45,948.00	151.12 %
Total:	**$1,047,842**	**$201,853.00**		**$403,705.00**	

Deficiency Summary by System

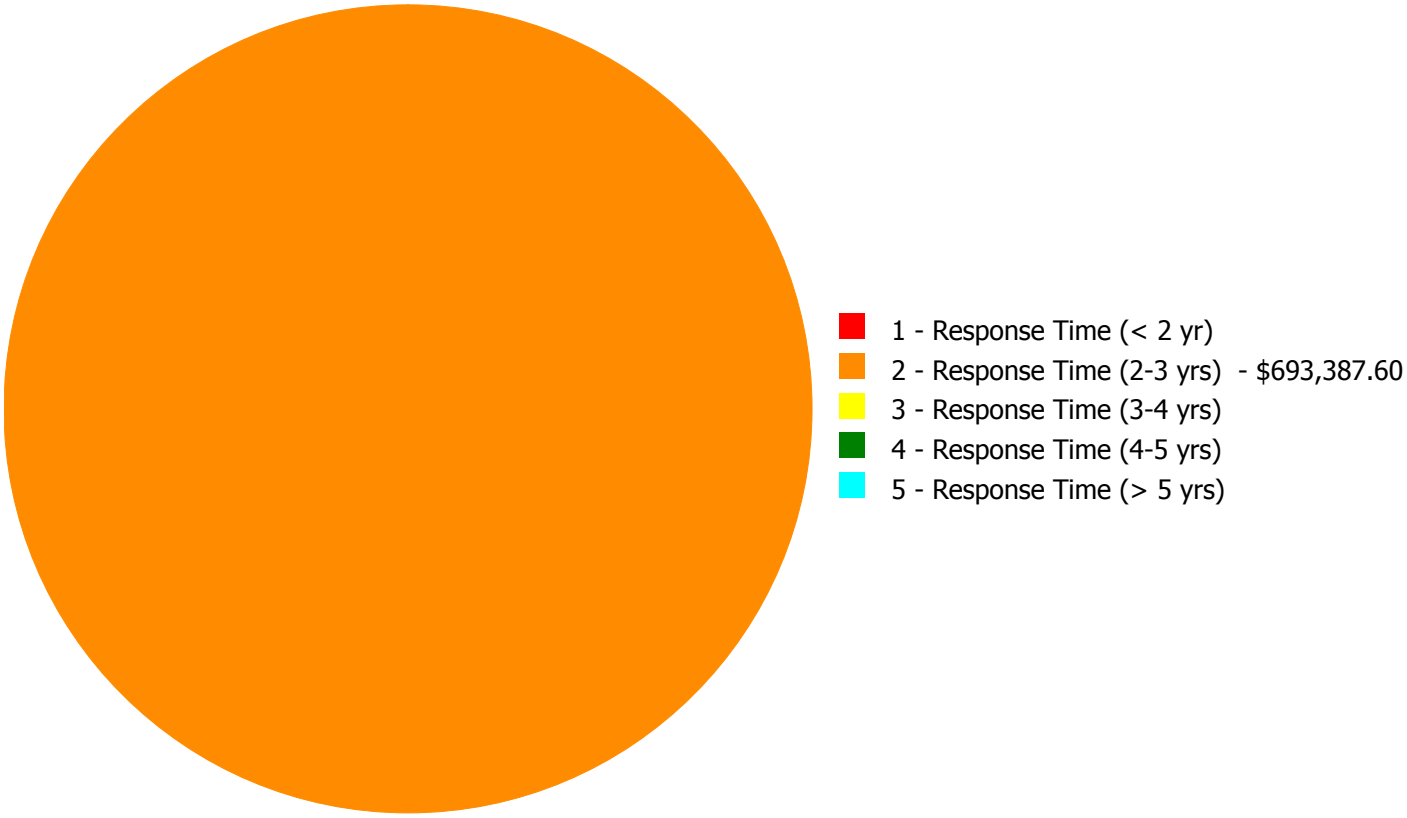
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $693,387.60

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: $693,387.60

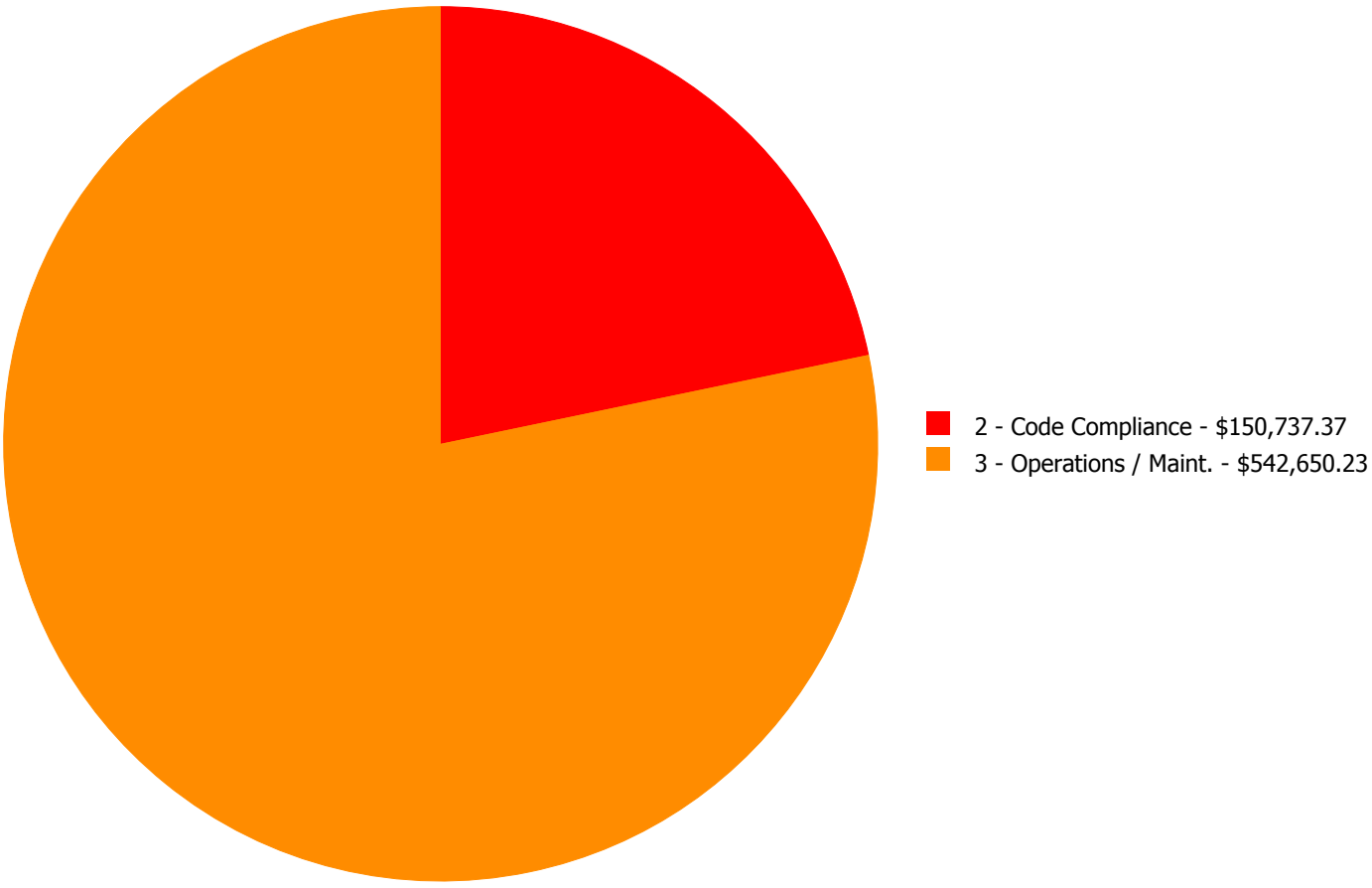
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2030	Pedestrian Paving	$0.00	$510,308.63	$0.00	$0.00	$0.00	$510,308.63
G2040	Site Development	$0.00	$183,078.97	$0.00	$0.00	$0.00	$183,078.97
	Total:	$0.00	$693,387.60	$0.00	$0.00	$0.00	$693,387.60

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: $693,387.60

Deficiency Details by Priority

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

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

System: G2030 - Pedestrian Paving

Location: rear play area

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 25,000.00

Unit of Measure: S.F.

Estimate: $359,571.26

Assessor Name: Steven Litman

Date Created: 10/15/2015

Notes: Repave damaged sections of concrete parking / playground area (25,000sf)

System: G2030 - Pedestrian Paving

Location: rear/side of building

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Install an exterior ADA ramp - based on 5' wide by the linear foot - up to 84" rise - per LF of ramp - figure 1 LF of ramp per inch of rise

Qty: 90.00

Unit of Measure: L.F.

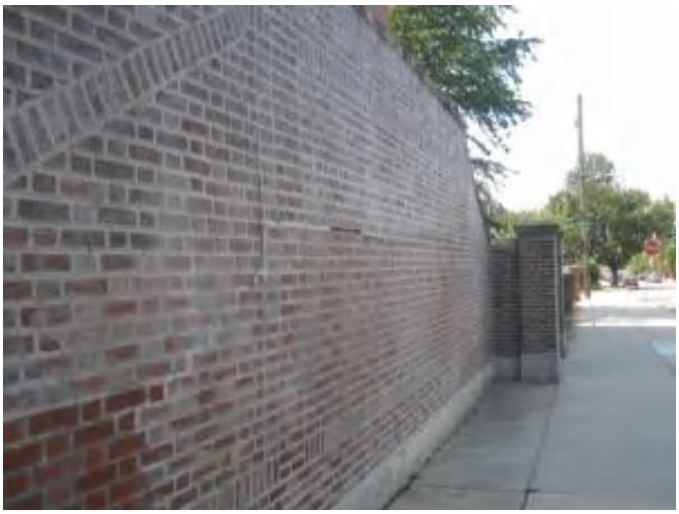
Estimate: $150,737.37

Assessor Name: Steven Litman

Date Created: 10/15/2015

Notes: Provide ADA ramp into building at rear playground stair at first floor level (6ft rise; 90ft long)

System: G2040 - Site Development



Location: brick retaining wall along Cottage St and Gillespie St

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair exterior brick retaining wall - per LF of wall - up to 4' tall

Qty: 200.00

Unit of Measure: L.F.

Estimate: $103,125.03

Assessor Name: Steven Litman

Date Created: 10/15/2015

Notes: Rebuild retaining wall along Cottage St. 6-10ft tall (200ft)

System: G2040 - Site Development

Location: site fence

Distress: Appearance

Category: 3 - Operations / Maint.

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

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

Qty: 1,000.00

Unit of Measure: L.F.

Estimate: $65,260.05

Assessor Name: Steven Litman

Date Created: 10/15/2015

Notes: Repaint rusted wrought iron fencing (1000 ft)

System: G2040 - Site Development

Location: site fence

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: 60.00

Unit of Measure: L.F.

Estimate: $14,693.89

Assessor Name: Steven Litman

Date Created: 10/15/2015

Notes: Replace damaged wrought iron fencing (4) 8ft sections; include new gate (24ft)

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