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.

Frankford School

Governance	DISTRICT	Report Type	High
Address	5000 Oxford Ave.	Enrollment	1128
	Philadelphia, Pa 19124	Grade Range	'09-12'
Phone/Fax	215-537-2519 / 215-537-2598	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Frankford	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	**34.50%**	**$57,306,376**	**$166,126,913**
Building	34.46 %	$56,647,976	$164,374,106
Grounds	37.56 %	$658,400	$1,752,807

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	01.07 %	$40,391	$3,790,548
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.24 %	$32,752	$13,554,648
Windows (Shows functionality of exterior windows)	59.15 %	$5,107,862	$8,634,813
Exterior Doors (Shows condition of exterior doors)	72.26 %	$263,020	$363,967
Interior Doors (Classroom doors)	115.92 %	$1,367,608	$1,179,756
Interior Walls (Paint and Finishes)	01.83 %	$76,046	$4,144,836
Plumbing Fixtures	19.59 %	$831,042	$4,242,103
Boilers	40.67 %	$2,382,315	$5,857,993
Chillers/Cooling Towers	77.18 %	$5,927,880	$7,680,967
Radiators/Unit Ventilators/HVAC	151.12 %	$20,384,052	$13,488,757
Heating/Cooling Controls	152.23 %	$6,448,206	$4,235,828
Electrical Service and Distribution	00.00 %	$0	$3,043,521
Lighting	00.16 %	$17,788	$10,881,370
Communications and Security (Cameras, Pa System and Fire Alarm)	01.34 %	$54,596	$4,075,807

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

S701001;Frankford

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):	313,765
Year Built:	1914
Last Renovation:	1999
Replacement Value:	$166,126,913
Repair Cost:	$57,306,376.16
Total FCI:	34.50 %
Total RSLI:	72.74 %

Description:

Facility Condition Assessment
December 2015

School District of Philadelphia
Frankford High School
5000 Oxford Avenue
Philadelphia, PA 19124

313,765 SF / 1150 Students / LN 07

Frankford High School is located at 5000 Oxford Avenue. The front of the building faces Oxford Avenue, but the main student entrance faces Oakland Street. The original four-story building (Element 1) is built of brick in the Gothic Revival architectural style in 1914. A one-story gymnasium addition (Element 2) was constructed in 1953, a three-story classroom addition with a basement (Element 4) was constructed in 1969, and a two story addition (Element 3) was constructed in 1999. The total size of the school today, is 313,765 square feet. There are basements under the most of the building and additions accessible from internal stairways and an external stairways leading up to Oakland Street and Oxford Avenue. Mike Shilton, the Building Engineer accompanied the team during the building inspection.

The inspection team met with Vice Principal Precia at the time of field inspection and spoke to Principal Calderone by phone after the inspection. In particular, they indicated that the there are problems with the heating system tempe+rature controls and piping. Windows and doors are old and do not close tightly. The on-site parking lot is small and availability for the 150 faculty and staff is inadequate; furthermore, residents from the surrounding neighborhood park in the school parking lot using valuable on-site parking. Vice Principal Precia indicated that the 4th floor cannot be used due to the presence of asbestos. Additionally, the Philadelphia building department does not allow the use of the 4th floor because the building is not sprinklered and the 4th floor is might be too high above the street level for a non-sprinlered building. The Auditorium balcony does not have a railing and has therefore been closed to the public as it is not allowed to use without edge protection.

ARCHITECTURAL/STRUCTURAL SYSTEMS

Foundations in the boiler room (basement) appear to be constructed of concrete and brick. Walls have areas of cracked joints and spalling concrete; the 8 concrete column enclosures built around the steel building columns are cracking and spalling; concrete column enclosures protect the steel building columns, which are built into the brick enclosure around the building boiler. Floor decks above the basement are also spalling, exposing reinforcing rods. Footings were not seen and their construction type or condition could not be ascertained.

Floor slabs in the boiler room are dirty but in good condition. Outside the boiler room, basement slabs are in good condition without any major cracks or settlement. Upper floor slabs are also constructed of cast-in-place concrete with cast-in-place concrete beams or possibly steel beams encased in concrete. Columns, beams and floor deck in upper floors appeared to be in good condition.

Roof construction is a complex system of flat, minimum overall slope areas and low-slope pitched areas between walls and adjacent higher flat-roof areas; the multiple roof levels allow for creation of windows from different floors into the open courtyards created by the lower roofs. This type of building design creates many roof pockets, terminating against walls, creating areas with high potential for leaking. None of the lower roofs have overflow or secondary storm drains; when drains become clogged with debris, the area floods. The membranes and flashing in these areas need to be regularly maintained to provide watertight surfaces. The roof superstructure is constructed of reinforced concrete columns, beams, (or steel beams and columns encased in concrete) and cast-in-place concrete floor slabs. Roof drains are located at low areas of roof deck; there are some dished areas around the roof drains; areas without depressions in the deck have enough slope to direct the water towards the drains and away from the parapet walls. Access to the main roof above the 4th floor is from a door in the roof access structure. Access to other lower roofs is from hatches, ladders up or down from the main roof, or by climbing out through windows adjacent to the lower roofs.

Exterior brick walls and lintels on the outside of the building facing the street are generally in good condition. Many of the upper panels on the original building, Element 1, have decorative brick patterns built into the walls, adding interested to otherwise blank brick walls. The top of the furnace flue has cracks and needs to be pointed. It appears as if many walls in Elements 1, 2, and 3 have been repointed. Element 2 facing Oakland Street has graffiti that has been spot painted with a mis-matching paint; walls should be powerwashed. Limestone coping and banding on all building elevations also need to be powerwashed. Element 3 has some joint failure near Element 2 facing Oakland Street. Almost all the limestone panel joints in Element 4 facing Broad Street and Oxford Avenue are cracking and failing. This is a critical issue because water could penetrate inside the open joints and cause further damage inside the walls. One small area bricks on the Element 4 brick wall facing Oxford Ave needs to be repaired. The original coping on top of Elements 1, 2, and 4 seems to have been limestone, but most were replaced years ago with a metal coping element. Some areas on Element 1 walls have newer dark bronze painted coping. All coping appears to be aged but in good condition. Metal fencing attached to low roof edges, designed to keep vandals from climbing onto the roofs is peeling and rusting. These fences should be repainted and their connections into brick walls inspected to ensure good support.

Exterior windows were replaced in the 1990's (approximately) with dark bronze or clear anodized aluminum frame operable single hung units with double pane insulated glazing. Windows are in poor condition are difficult to operate, do not stay open slamming closed, and leak cold air in the winter. Plexiglass vision panels in these windows is getting so cloudy that it is difficult to see out of some windows. Windows in the Element 2 gymnasium are frozen closed and if forced open are difficult to completely close. All windows should be replaced with new insulated glass units.

Exterior doors around the building are painted steel-framed flush hollow metal panel units. The main entrance and secondary entrances around the building are framed in limestone panels and decoration details and recesses around the door openings. The main entrance has a 4-1/2 story turret on each side of the entrance door. Doors are in poor condition, have broken or non-functioning panic hardware, rusted dented panels and door frames, and are not ADA compliant. All doors and hardware should be replaced. There is a wheelchair accessible entrance into the main student entrance door in the rear off Oakland Street, and there are accessible entrances facing Oxford Street into the old building and Element 4. Handicap parking is adjacent to the Oxford Street accessible entrance.

Roof covering on the main building flat roof is a fully adhered rolled asphalt membrane. The membrane and flashing are getting old but are in good condition no leaks have been reported. The roof is estimated to be 15 years old. There were no areas of cracking observed along flashing set into brick or at the base of mechanical equipment. Roof openings include toilet room vents, ventilation ductwork, and roof drains. Brick rooftop structures, brick parapets, and ventilation fan structures are flashed with metal-faced mastic-backed membrane material. Parapets are 2-3feet in height, flashed full height with the metal-asphalt flashing and an aluminum coping cap. Most roofs do not have scuppers which would be required by today's building code. The roof construction is over 100 years old and appears to have been able to adequately carry the dead and live loads imposed on it including any extra weight of water and ice if the drains were clogged and water filled up the roof area. Taller brick structures and building walls with roofing terminations have aluminum counterflashing attached to the brick, counterflashed, and sealed with caulking along the top edge. Counterflashing in some locations has become unattached or requires additional caulking along the brick-flashing insertion joint. Despite the apparent water tightness of roofing and roof structures, there is evidence of water damage on outside and inside of some third and fourth floor walls. Water might be seeping in from under coping or through cracked bricks just under the coping. Water could also be seeping in through the inside of old gravity vents. Large dark dirt/mildew areas can be seen around some roof drains, indicating pooling water that is evaporating instead of draining into roof drains. There were some areas of standing water, due to flattened insulation not allowing the water to flow towards the drains. It is also possible that some roof drains are clogged. Inspection of all penetrations, coping, and flashings should be conducted, especially the roof drains in sections of roof surrounded by walls. All roof drains should be cleaned out to improve drainage and minimize any amount of extra water weight imposed on the roof due to clogged drains.

Partitions in basements are constructed of brick masonry and concrete. The upper 3 floors of the building have a plaster finish which is thought to be applied on wood lath or on terra cotta on masonry partitions. Basement corridors, most basement classrooms, and the inside surfaces of the outside stairway walls have glazed brick wainscots in good condition (stairways have full height glazed brick). Between some above basement classrooms in Element 4 are manually operated full height wood folding partitions. It appears that some of these moveable wall systems are still operational, although their stability before and after opening could not be determined and nobody opens the walls. They are very heavy, rolling mechanisms may not work well and could fail since they have not been used for years. The movable partitions do not provide good sound attenuation between classes. Some 4th floor plaster-finished exterior walls and exterior 3rd floor gymnasium walls over the auditorium are damaged from spalling from past or present wall or roof leaks. Corridor doors in Element 1 have glass transoms over most doors. These vision panels let light into the corridors, but are not fire rated as required by code in a non-sprinklered building. These transoms should be replaced with fire-rated gypsum board and metal stud infill. Most toilet room walls are constructed of block in good condition with no water or physical damage. Auditorium walls have a stained wood wainscot 3 to 4 feet tall with a decorative plaster design on the opening framing the stage. Work is needed to repair some minor damages in the plaster opening.

Interior doors are either the original raised panel oak wood and glass (some have wired glass) doors with non-lever handle replacement hardware or replacement wood doors with narrow lite wired glass vision panels and replacement hardware at least 20 years of age. Many of the original wood doors have damaged panels, broken glass, and broken hardware. Some interior basement doors and all interior stairway doors are hollow metal doors in metal frames with wired glass. Stairway doors are half height or narrow lite wired glass; half height wired glass exceeds today's code allowance for the allowable size of wired glass in a fire rated stairway. Many steel doors and frames are rusted where coming in contact with floors, due to cleaning solutions corroding the frames. Doors are dented, scratched and generally in poor condition throughout the building; they are not ADA compliant, do not have ADA or proper locking hardware. Most corridor doors do not positively latch (they do not have panic or latching hardware) as required of fire rated doors and do not comply with the code required fire rating requirements as stated by today's codes. Existing corridor doors do not have security locking feature that permits locking from inside classrooms in a security lock-down situation. Few of the newer wood doors that have replaced old doors can be refinished and reused where not heavily damaged, but steel stairway doors and all original wood doors need to be replaced with positively latching fire rated doors with approved fire rated glazing. All door hardware also needs to be replaced.

Interior fittings/hardware include slate chalkboards (green and black) with oak or metal chalk trays. Some classroom walls have bulletin boards. Most have chalk boards and tack boards mounted onto the panels. The corridor wall on the first floor outside the Art Room has surface mounted wood and glass display cases the length of the wall between the two doors into the art rooms. Some toilet rooms have new solid plastic HDPE (high density polyethylene) replacement partitions and doors. There are a couple toilet rooms with old, rusted metal toilet partitions, in need of replacement. Toilet room accessories (toilet paper dispensers, soap, paper towel or dryers, grab bars, door latches) have been recently replaced in most toilet rooms, however some components are missing and others are not fully functional. Provisions for accessibility have been made in some toilet compartments, but sizes, accessories, faucet handles and mounting heights do not comply with all ADA standards. In most cases, however, accessibility is adequate and full compliance might not be possible without hardship. All toilet facility layouts and accessories should be reviewed for compliance and the possible need for additional renovation. Steel lockers line many corridors on each floor; they have the original factory painted finish and are in fair condition. Girls' and Boys' Cafeterias have folding portable plastic laminate and steel table/chair units.

Stair construction throughout the building consists of concrete treads with steel nosings, steel risers, and steel stringers with aluminum or painted steel handrails. The four stairs in Element 1, Stairs 1, 2, 3, and 4 were recently replaced with wider than the original steel

stairs with center rails; handrails, guards, and mesh balustrade comply with today's building code. Basement tread/riser runs of stairways 7 and 9 in Element 4 are rusting and need to be replaced. Handrails, guards, and balusters in Stairs 7, 8, and 9 are not in compliance with today's codes and need to be replaced for all 4 floors.

Wall finishes in the old building are plaster in upper floors and plaster with glazed block wainscots in basement rooms. There is some minor cracking and chipping in isolated locations and minor damages typically in classrooms at doorways and corridors near corners. The auditorium has a stained wood wainscot which is scratched and needs to be restained. There are decorative plaster details surrounding the stage, in the auditorium lobby, and the open stairway down to the street from the main lobby. Minor damages were seen in the decorative plaster pilasters and decorative wood classical architectural elements should be repaired and repainted. In the auditorium and backstage, there are a number of wall and ceiling areas that have been damaged from water leaks. Assuming these leaks have been addressed, the auditorium plaster should be repaired. The are two partially separated cafeterias served by one common kitchen. The walls of these spaces mostly has glazed brick wainscots, and painted brick upper sections, all in good condition only requiring a good cleaning at the base where coming in contact with floors. The gymnasium walls are painted block with padding on the walls.

Floor finishes in the building consist of dark stained oak floors in classrooms and the auditorium. Wood floors are generally in good enough condition to be stripped, sanded, and refinished; some planks will need to be replaced as they are warped or broken. Some classrooms have VAT (vinyl asbestos tile) or VCT (vinyl composition tile); the cafeterias have VAT. Kitchen floors and support spaces adjacent to the kitchen are quarry tile, in good condition, but in need of a good cleaning. Classrooms, cafeteria, kitchen, and other rooms with either 12"x12" or 9"x9" VAT over wood are worn, have damages and cupping edges; (the 12"x12" tiles could be VCT). The floor tiles should be tested for the presence of asbestos. If present, the tiles should be removed using proper asbestos abatement procedures and replaced with 12"x12" VCT. If the 12x12 tiles are vinyl VCT tiles, they should be removed and replaced with new VCT. Wood flooring is used in the gymnasiums; these floors should be refinished. All corridor floors are finished with 2'x2' (nominal size) sealed concrete tiles which appear to be a monolithic system and highly durable. Edges along the walls are painted; these corridor floors have not recently been stripped and cleaned and have years of dirt sealed into the surface and corners, causing their color to be very dark and dingy. There is an especially large build-up of dirt at all corners. The lobby floors are finished in terrazzo from the street entrance up to the first floor. These floors are in excellent condition, are extremely durable, and have no visible damages. Toilet room floors are all finished with ceramic mosaic tile. These floors are dirty and require a thorough cleaning and resealing.

Ceiling finishes in classrooms are mostly 2x4 suspended acoustical tile ceiling system with recessed 2x4 fluorescent lighting fixtures throughout the building. Most 2x4 ceilings and lighting fixtures are aging, in poor condition, and should be replaced. The cafeterias have 12"x12" concealed spline ceiling tiles. They area old and look like they are beginning to fall down; cafeteria ceilings should be replaced. The auditorium and the auditorium lobby have plaster ceilings with decorative cornice elements and moldings, in good condition. The gym above the auditorium has plaster ceilings that have been damaged by leaks; plaster needs to be patched, repaired and repainted. The boys and girls gymnasium in Element has exposed structural joists and concrete deck ceilings. The paint on the trusses is in good condition.

Furnishings in the building include folding wood seating in the auditorium. Many of the over 1500 seats need to be repaired to operate properly and many are scratched. The broken seating should be repaired and the worn seating should be refinished. The inspection team was told that the balcony in the auditorium is closed due to the lack of a railing protecting the open edge in view of the stage; a railing should be provided to allow the balcony to be reopened. Casework and storage cabinets in the classrooms and the office are damaged, worn and need replacement. Student lockers throughout the building appear to be in good condition, however they need to be repainted.

There are two elevators in this school; a 3000 lb. capacity 5 stop traction elevator in Element 1 and a 4000 lb. capacity hydraulic elevator in Element 4. Both elevators are unreliable and require frequent repairs. The elevator in Element 4 gets stuck between floors because it has been said that the guide rails are out of line. Both elevators should be replaced with new elevators that are equipped with the latest ADA accessibility features such as lower button panels, chimes, floor numbers on jambs, and visual, audio, and tactile call notifications. A small wheelchair lift is provided in the third floor of Element 1 to provide access to the gymnasium; this lift is not often used but was said to be in working condition.

MECHANICAL SYSTEMS

Plumbing Fixtures – The building is equipped with wall hung urinals (flush valve type), a combination of floor set and wall hung water closets (flush valve type), and wall hung lavatories with wheel handle faucets, of which many of the original plumbing fixtures remain in service. The fixtures are part of the original building construction of 1969 and should be replaced with water efficient fixtures. Some bathrooms were equipped with floor drains while others were not.

Most drinking fountains and electric water coolers have not been upgraded from the original fixtures. The fixtures should be upgraded

to high/low ADA compliant electric water coolers in the building. Electric water coolers are of the wall hung type as well as vertical floor standing types. . There are also recessed drinking fountains locate in some areas of the building which are original fixtures as well. At the building exterior there are gang drinking fountains of which some are no longer in use. Most of the fixtures are part of the original building construction of 1969 and should be replaced as they are nearing 47 years old and have surpassed their service life expectancy. The Annex is equipped with high low ADA compliant drinking fountains.

The lockers are equipped with gang showers and floor drains in the locker areas. Lavatories, water closets and urinals in the locker areas are the same types as the rest of the school. These fixtures should all be replaced.

In the science laboratories the lab prep sinks are original and should be replaced. The gas turrets are not active as they have been shutoff at the branch distribution, however the water supply is active. The condition of the compressed air turrets was not confirmed.

Floor set mop/service sinks are original and are available throughout the building for use by the janitorial staff. Service sinks are typically throughout the buildings. The fixtures are part of the original building construction of 1969. The service sinks, shown signs of heavy use and need to be replaced. The Cafeteria's food prep/kitchen is equipped with one, three compartment stainless steel sink, with wheel handle operated faucets and is connected to a grease trap located above the floor which is readily accessible. The kitchen is also equipped with a hand sink. The triple wash sink shows signs of normal usage. The grease interceptors show signs of minor corrosion. Chemicals are injected manually into the sanitizing basin. The triple wash sink in the sink in the culinary arts classroom is equipped with a grease interceptor. There are no signs of corrosion on the unit and it is accessible to be serviced. The units should not be replaced at this time.

In the science laboratories the lab prep sinks are original and should be replaced. The gas turrets are not active as they have been shutoff at the branch distribution, however the water supply is active. The condition of the compressed air turrets was not confirmed. There are also combination emergency eye wash and showers in some lab classrooms. There is a floor drain at the emergency fixture as well.

Domestic Water Distribution – The 4" water service which supply domestic water to the building enters at exit door number 6, stairwell number 3. The service is equipped with a backflow preventer (RPZA – reduced pressure zone assembly) and a by pass assembly. It appears that the 4" domestic water service piping is mostly soldered copper. There is a water meter on the service as well. The second water service is by the engineer's office, is 3", has a new water meter and is equipped with a BFP (RPZA) and a by pass assembly. There are two instantaneous type natural gas fired water heaters, Paloma model PH24MDN (minimum input 37,700 btuh, maximum 178,500 btuh) which serve the facilities restrooms, 1999 addition and kitchen with domestic hot water supply. The water heaters serve a hot water storage system. The water heaters appear to have exceeded their service life expectancy from the perspective of visual inspection. Both heaters should be replaced. Similarly, there are also instantaneous type natural gas fired water heaters, Paloma model PH24MDN (minimum input 37,700 btuh, maximum 178,500 btuh) which serve the gymnasium restrooms and showers with domestic hot water supply. The water heaters serve a hot water storage system. The water heaters appear to have exceeded their service life expectancy from the perspective of visual inspection. The hot water system is equipped with inline recirculation pumps to serve each of the water heaters. The domestic water system is not equipped with expansion tanks. 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 expectancy shows signs of wear and should be replaced. A domestic water booster system also serves the domestic system. The booster pumps consists of a skid mounted, duplex system with 15 HP pump motors. This is located in the main boiler mechanical equipment room. The system appears to have exceeded its service life and should be replaced.

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 a duplex sewage ejector. The 1999 addition is also equipped with a duplex sewage ejector system.

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 no secondary drainage scuppers for the original roof, however there is a parapet present. The roof drainage system for the original building is configured where the high roof gutter and leaders discharge to the lower roof drains. There are scuppers on the 1999 addition roof. Foundation drainage is handled by a sump pump in the main boiler mechanical equipment room.

Energy Supply - Duplex fuel oil supply pumps provide the required fuel to the boilers when operating on fuel oil, however at this time the boilers only operate on natural gas. There is one, 10,000 gallon, fuel storage tank is located below ground at the wing of the school nearest to Oakland and Harrison Streets below the parking surface. The fuel pumps and controls have been damaged by a concrete beam, so the fuel oil system is not used. There is an oil monitoring system for the fuel oil underground storage tank. An 8" natural gas service enters the building into the main mechanical boiler equipment room 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 four 6,680 MBH (400 HP), Weil McLain, sectional cast iron boilers, model 2494 series 94. The four steam boilers serve the heating needs for the building. According to the building engineer three boilers are used to meet the building load due to all of the steam leaks. At the time of our site visit only two boilers operate. Of the other two one burner fan has bad bearings while the other boiler is being serviced. All boilers are equipped with dual fuel manufactured by Webster, Cyclonetic model JB3G-50-RM7840L-M.30-UL/FM//CSD-1/GE GAP, natural gas and number 2 fuel oil Industrial Combustion burner controls, however only gas is utilized due to the damaged fuel oil pumps. Burners provide full modulation with electronic ignition and digital flame sensing. Burner oil pumps are driven by independent motors. The boilers are estimated to be 25 - 30 years old. There is no draft control on any of the boilers. Combustion air louvers serve the boiler room to provide combustion air for the boiler operation. The combustion air dampers/louvers are equipped with electric actuators. Burner oil pumps are driven by independent motors. The gas train serving each boiler appears to have code required venting of the regulators and dual solenoid valves with venting of the chamber between. The oil supply to the burner is equipped with dual solenoid valves and strainer/disposable media filter. A skid mounted, steam to heating water tube and bundle heat exchanger located in the 1999 building addition produces heating water for the equipment which serves the addition. There are seven end suction, based mounted, centrifugal, Bell & Gossett, pumps which serve the unit ventilators, the air handling units in the mechanical equipment room for a dual temperature system and a four pipe system for the addition. There are also inline circulating pumps for freeze protection on AHU-1 which serves the offices and AHU-2 which serves the basement area in the addition

Cooling Generating Systems – There is an air cooled screw chiller equipped with glycol which serves administrative areas of the new building. The chiller is a York, Model YCAS0098EB46XGA, installed in 2003 and has a capacity of 98 tons. In the original building there are a few area which have window air conditioning units, but predominantly the building does not have cooling systems. 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 1999 addition heating water distribution piping is black steel, schedule 40 with welded 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 According to the building engineer there have been significant problems with steam trap failures and steam leaks in the steam and condensate system. Also, the heating water piping for the latest addition has been in service for 17 years and should not need to be replaced for approximately 30 years. The District, however should hire a qualified contractor to examine the steam and condensate 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 beyond the mechanical room over the next 5 years.

The boiler feed water is collected by a boiler feedwater pad mounted system and is treated with a combination of chemicals by a water treatment controller. Currently there is a system upgraded which is adding two feedwater pumps systems equipped with five pumps on each system. There are several condensate return receivers for the steam system as well, which pump back to the feedwater system. The condensate return piping is black steel with threaded joints. It is recommended that the District conduct a steam trap survey to determine the quantity and condition of all steam taps. All condensate return systems should be checked for proper operation, although some have been replaced within the past 10 years while other systems such as the system in the mechanical room located below the gym are experiencing significant steam leaks.

The building uses unit ventilators with steam heating, unit ventilators with steam heating and steam radiators in the classrooms, for various locations in the entire facility. In the 1999 addition, the building uses unit ventilators with heating water coils in the classrooms. In general, vertical unit ventilators and steam radiators are located at the building perimeter walls of the classrooms for the classroom with an exterior exposed wall, however there are some unit ventilators which are located in the hallways and corridor which do not have outside air provided to the unit. In the main building, the unit ventilators and steam radiators should be replaced as they are 47 years old. The unit ventilators in the 1999 addition are only 17 years old and should not need to be replaced for another 8 to 13 years. The classrooms in the main building are also provided with relief air transfer ducts which to the corridors where the air is then relieved through foul air relief risers located in the corridors. There relief risers terminate at the roof and provide a means of preventing over pressurization of the space from the outside air intake. The relief system worked in conjunction with the house fan systems which pushed heated air or ventilation air into the spaces and then relieved air through the relief system. The auditorium is served by the old house fan which no longer distributes air thorough the mushroom vents but now distributes air overhead through the concentric round diffusers. Steam convection is provided below the windows for the space. The system is part of the original building construction of 1969, is beyond its service life 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 with heating and cooling.

The main gymnasium is served by steam convection. There are four roof vents and a house fan which allows for air to be drawn through the vents and operable windows for the space. The exhaust fan unit is part of the original building construction of 1969, is beyond its service life and should be replaced. It is recommended to replace these systems with a roof top mounted unit with heating and cooling, an overhead supply air distribution system and return air ductwork and low return intake grilles which would be protected from damage.

The third floor gym above the auditorium is served by a heating and ventilating unit with steam coils and outside air for ventilation located on the fourth floor. Supply air is distributed from overhead supply air grilles. Heat is provided by radiators at the perimeter walls. The unit is part of the original building construction of 1969, is beyond its service life and should be replaced. It is recommended to replace these systems with a roof top mounted unit with heating and cooling, 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 a heating and ventilating unit with steam coils (house fan, which is currently not in use). Radiators are located by the perimeter walls below the windows for heating.. The kitchen is equipped with a kitchen hood which are served by a one gas fired make up air, horizontally suspended and manufactured by Rupp, which distributes air into the kitchen space. Proper air flow pressurization and balancing should be performed for the seating area with respect to the kitchen to maintain the kitchen under negative pressurization. Steam radiators are also provided below the windows in the kitchen prep area. The culinary arts class is also equipped with a roof mounted exhaust fan for the hood and a roof mounted make up air unit.

The boys and girls lockers are served by H&V units with steam coils and exhaust fans and wall mounted steam convection units. The systems are beyond their service life and should be replaced.

Terminal & Package Units - There are roof mounted exhaust fans and localized exhaust fans which serve the restrooms. Entryways and stair landings/stairwells are served by recessed steam convection units or radiators. Hallways are served with unit ventilators with steam heating coils without an outside air ventilation connection as well as old cast iron radiators (manifold) terminals fashioned from welded piping. Most radiators do not have guards. The radiators should be replaced with finned tube elements to protect students from exposure to the hot surfaces.. Some locations in the building are served by recessed cabinet steam convectors. The bathrooms are served by wall mounted steam convectors or steam radiators.

Controls & Instrumentation - The original pneumatic systems still provide basic control functions. Pneumatic room thermostats drive the unit ventilators, the damper actuators and control valves. Wall mounted pneumatic thermostats throughout the school control the steam radiators, convection heaters and unit ventilators. There are three air compressor systems; one is located in the main boiler mechanical equipment room, the mechanical space above the gymnasium and in the addition main mechanical room. Each compressed air system is equipped with a refrigerated air dryer. The maintenance staff reports temperature control is generally lacking throughout the facility and that the controls do not function. The building control temperature control is manual by operating the boilers or shutting them down. 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 47 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 partially covered by an automatic sprinkler system. The sprinkler service is an 8" water line that enters into the main boiler mechanical equipment room. The piping is black steel with mechanical coupling joints. The kitchen storage areas and the mechanical spaces are sprinklered. There are also standpipes in the stairwells in some areas of the school. Installing a sprinkler system to cover the areas which are not currently sprinkled with quick response type heads should reduce insurance costs by providing protection for the property investment. The existing fire pump and jockey pump is located in the main boiler mechanical equipment room and may be required to be upgraded depending on the available city water pressure and any added sprinkler requirements. The current nameplate data list the pump as, 125 HP, but the GPM capacity is illegible. The kitchen hood exhaust system is equipped with an Ansul fire suppression system.

ELECTRICAL SYSTEMS

Site Electrical Service comes from medium voltage overhead lines on wooden poles along Harrison St. The main service switchgear, located in the Main Electrical Room, receives power from an overhead pole via an underground raceway. The main service switchgear is 600A rated and it consists of an incoming section, a section for current and potential transformers, and outgoing branch feeder sections with two 600A medium voltage load interrupters. Utility meter is installed in a separate enclosure adjacent to the switchgear assembly. Within the main service switchgear, one medium voltage load interrupter feeds a unit substation (Substation#1) located in the Main Electrical Room feeding the old Main Building. The substation #1 consists of a dry type transformer rated at 1500 KVA, 13200V to 208/120V, 3 PH, 4 wires; and a 4000A, 208/120V rated distribution switchboard (Switchboard SMB). The other medium voltage load interrupter in the main service switchgear feeds another unit substation (Substation #2) consisting of a dry type transformer located outside of the building and a distribution switchboard (Switchboard MDP) located in the mechanical/pump

room. Substation #2 transformer is rated at 1000KVA, 13200V to 208/120V, 3PH, 4 wires and the associated switchboard rated at 3000A, 208/120V. Substation #2 is for feeding power to the newer building.

Service entrance and the substations have been upgraded recently under SDP contract NO B-49C ® 2009/10 and are in good condition.

Power distribution for the campus is achieved through power and lighting panel boards (64 total) located throughout the building. Approximately 50 percent of these panel boards with their respective feeders have already been retrofitted or replaced under the aforementioned contract. Upgrading of the other panels is in progress and is scheduled to be finished by May 2016.

Installing of additional receptacles in the classrooms and replacing of existing non-ground type receptacles are under construction as part of SDP contract NO B-49C ® 2009/10.

Besides the upgrade and replacement activities that are going on or scheduled at the campus, following deficiencies have been observed:

1- General receptacles are installed at the lab sink. For those installed within six feet of the sink will need to be replaced with GFCI type.

2- In some computer rooms, temporary power cords or non-UL listed floor receptacles are used for computer desks. All receptacles installed are with UL label and receptacles and wiring be of a permanent installation via such as power poles.

Replacing of lighting fixtures is also part of SDP contract NO B-49C ® 2009/10. Lighting fixtures in auditorium, dining room and Kitchen had already been upgraded while lighting replacement works for other areas are still in progress.

The Fire Alarm system is addressable, and in compliance with today's safety codes. The Smoke detection system consists of Area smoke detectors and manual pull stations in corridor and other code recommended areas and for fire notification. There are a sufficient number of horn/strobes installed in the, corridors, laboratory, offices and other critical areas in the school.

The telephone and data systems in the building are new and located in IT room in main office. A main distribution frame (MDF) along with a telephone PBX system (telephone within an enterprise that switches calls between enterprise users on local lines while allowing all users to share a certain number of external phone lines) services the communication system of the school. The School is also equipped with a wifi system.

Separate PA system does not exist. School uses the telephone systems for public announcement. This system is working adequately.

Each classroom has intercom telephone service. The system permits paging and intercom communications from the main office to classrooms, classrooms to the main office, and classroom to classroom. Outside line access from a classroom phone through the PBX is blocked.

Present clock system is not working. School is provided with time system controller consisting of electric round clock installed on the wall in each classrooms and a master time programmer in the main office. The clocks are not controlled properly with the central master controller. System is old and has exceeded its useful service life thus requiring replacement. The present bell system is working adequately.

Television System is not provided in the school. Most classes are equipped with smart boards having the ability to connect with computers and internet.

Building has been provided with access control and video surveillance system. Numbers of security cameras are installed at exit doors, corridors and other critical areas, and controlled by a closed circuit television system (CCTV) located in school Police office. The system is working properly.

Emergency Power System is provided in the school. A 250KW, 208/1207V, three phase, 4W diesel generator manufactured by "Generac Power System" is installed in Boiler room area. Generator is new and in a good condition.

Uninterruptible Power System (UPS) is provided for Local Area Network in the main IT room.

Emergency lighting and exit lighting, is provided in corridors, library, auditorium, and exit ways, fed by the emergency backup generator. Exit signs are also on emergency power are in good conditions.

Lightning Protection System is adequate and is incompliant with NFPA 780 (standard for the installation of lightning protection system).

Two elevators are in operation in the school. One hydraulic type elevator (estimated 40 horsepower) in newer building and one gear type elevator (estimated 20 hp) in the main building. Both elevators are old but appear to be working properly.

Theater Lighting and dimming controls has been upgraded under SDP contract number B-49C ® 2009/10 and are in a good condition. Site Lighting System is adequate; however some lighting fixtures need to be repaired to make the system fully operational. Stage is provided with front, upstage, high side, backlighting, scenery lighting and controllers by automatic dimmer bank controller. In addition to the stage lights, supplemental

Auditorium Sound System has also been upgraded under SDP contract number B-49C ® 2009/10. New system is in compliance with ECE40020 (standard for reinforcement system design).

Site Lighting System is adequate. There are sufficient numbers of flood lights are provided around the building. No major deficiencies observed. Building engineer also indicated that they do not have any issue with the exterior lighting system.

The exterior building is monitored by a video surveillance system.

Site Paging system is provided in the school and working adequately. Existing speakers are providing proper coverage in the playground.

GROUNDS SYSTEMS

Walkway paving in the front and side streets is constructed of 4'x4' (nominal) concrete panels. Some are in need of replacement and although they are not all contiguous, it may be possible to replace only those that are failing. Granite block stairways into the front and left side of the building are cracked and need pointing and regrouting. New handrails and guards are required at all stairs. An ADA accessible ramp is provided at a rear door but signage is needed to allow people to find the entrance. On-site asphalt parking is located in 4 small areas around the building. There are not enough spaces for the 150 person faculty and staff working in the building; faculty, staff, and visiting parents must park on the street when no spaces are available in parking lots.

Chain link fencing is located along Oxford Avenue, with isolated sections of fence protecting the areaway and generator facing Harrison Street. There are some damaged and bent fence panels in need of replacement. Sections of chain link fencing appear to have been recently repainted, but most of the fencing along Oxford Street is in need of repainting. Steel fencing is used in various locations to prevent vandals from climbing onto the roof of the gymnasium facing Oxford Avenue and Oakland Street; where provided it is rusted and needs repainting. The limestone steps leading into the building on Harbison Street need repointing

RECOMMENDATIONS

- Repair cracked concrete encasement around steel columns (8 columns 200 sf)
- Repair spalling concrete floor slab above basement (500 sf)
- Repoint cracks in brick wall on Element 4, facing Oxford Ave and Element 3 facing Oakland St. (200 sf)
- Repair/repoint limestone panel joints on Element 4 exterior walls facing Oxford Ave and Oakland St. (200 ft)
- Repair roof flashing set into masonry (100 ft)
- Rebuild 4 areas of roof with poor drainage (remove membrane, improve slope) (1000 sf)
- Powerwash brick facing Oakland St. and limestone banding, door and window accents (10,000 sf)
- Replace all exterior windows (850 3.5 x 8 average size)
- Replace all exterior doors and frames; also provide new exit hardware. (34)3x7
- Clean and reseal concrete floors in hallways, stairways, and mechanical rooms (121,665 sf)
- Replace rusted steel cover for steam trench in cafeteria (1 ft x 50 ft)
- Refinish all non-fire rated wood interior doors, frames and hardware inside classrooms, closets, offices, etc. (72)
- Refinish fire rated steel stairway doors (70)
- Replace all fire-rated wood doors and hardware in hallways (250)
- Provide security hardware for classrooms and offices, locking from inside classroom. (250)
- Remove non-fire rated glass transoms, replace with fire rated gypsum board (1000 sf)
- Repair peeling and water damaged walls and beams on high walls sill in gyms; repair/repaint water damaged and cracked plaster walls and ceilings throughout the building (5,000 sf)
- Remove and replace handrails and guards with code compliant systems (3 stairways x4 stories; =50x12=600 lf railings)
- Replace rusted stairway runs in Element 4 (2 stairs, 1 story runs)

- Strip, sand, repair and refinish all wood floors in classrooms, gymnasium, and in auditorium (91,300 sf)
- Replace approximately half of all VCT floors (15,000 sf)
- Replace VAT floors using proper asbestos abatement procedures if determined asbestos is present. (54,100 sf)
- Replace (most of) 2x4 acoustical tile ceilings where damaged or where grid is rusted (150,000 sf)
- Replace toilet room accessories where broken or missing (6 sets)
- Repair and restain scratched and damaged wood wainscot in auditorium (1000 sf)
- Provide new guard railing at edge of balcony in auditorium (70 ft)
- Replace damaged steel water closet partitions with HDPE plastic partitions (assume 10)
- Refinish damaged folding wood auditorium chairs (1500)
- Replace two elevators: 3000 lb capacity 5 stop elevator; 4000 lb capacity 5 stop elevator
- Repaint steel lockers throughout the building (10,000 sf)
- Repaint steel handrails in element 1 stairs (1000 ft)

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.
- Replace science lab sinks in the building.
- Add automatic sanitizing chemicals to the stainless steel sink in the cafeteria.
- Replace four instantaneous natural gas fired water heaters.
- Inspect and replace the original as needed the domestic water piping 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.
- Add a two 500 ton air cooled chillers.
- 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 47 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 the steam convection and replace radiators with steam convection.
- Replace the existing unit ventilators throughout the main building with new 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 exchanger.
- Provide ventilation, heating and cooling for the Gymnasium and lockers by replacing the existing heating and ventilating unit.
- Provide ventilation, heating and cooling for the Cafeteria by removing the existing heating and ventilating unit and installing a new modular constant volume air handling unit with heating, cooling, distribution ductwork and registers.
- Provide ventilation, heating and cooling for the Auditorium by removing the existing heating and ventilating and installing a new modular constant volume air handling unit with heating and cooling.
- 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.
- Upgrade existing sprinkler system to serve the entire building.

ELECTRICAL

- Remove existing floor mounted receptacles and provide power to the computer desks by using receptacles on power poles. Estimated 30 receptacles. Replace existing general type receptacles with GFCI receptacles at Lab sinks located in science labs. Estimated 50 receptacles
- Replace existing master clock system with new wireless clock system.

GROUNDS

- Regrout joints between limestone block tread/risers at misc. exterior stairs (6 treads, 12ft long)
- Repave damaged sections of concrete walkway along street (1000 sf)
- Repave dumpster slab and access slab to dumpster area with vehicle-grade concrete (1200 sf)

- Repaint rusted wrought iron fence surrounding site and along edge of one story roof over gymnasium and at Element 2 on Oakland Street (200 ft length)
- Repaint rusted sections of chain link fence along Oxford Avenue (500 ft)
- Repave asphalt parking areas accessed from Oxford Avenue, Oakland Street and Harrison Street (40,000 sf)

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 2
Status:	Accepted by SDP	Team:	Tm 2
Site ID:	S701001		

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 %	0.00 %	$0.00
B10 - Superstructure	37.00 %	0.04 %	$11,512.50
B20 - Exterior Enclosure	64.18 %	23.96 %	$5,403,634.48
B30 - Roofing	25.04 %	1.07 %	$40,390.59
C10 - Interior Construction	44.97 %	16.45 %	$1,430,460.48
C20 - Stairs	74.73 %	67.93 %	$334,652.91
C30 - Interior Finishes	85.72 %	32.32 %	$4,800,724.33
D10 - Conveying	105.71 %	175.99 %	$706,794.23
D20 - Plumbing	115.30 %	61.33 %	$3,736,856.12
D30 - HVAC	119.44 %	100.69 %	$35,142,452.58
D40 - Fire Protection	114.29 %	177.05 %	$4,477,606.15
D50 - Electrical	93.70 %	0.39 %	$72,383.65
E10 - Equipment	29.70 %	0.00 %	$0.00
E20 - Furnishings	25.00 %	73.39 %	$490,507.70
G20 - Site Improvements	28.90 %	51.21 %	$658,400.44
G40 - Site Electrical Utilities	16.67 %	0.00 %	$0.00
Totals:	**72.74 %**	**34.50 %**	**$57,306,376.16**

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)
B701001;Frankford	313,765	34.46	$16,478,645.95	$19,020,209.62	$6,269,348.10	$2,970,717.18	$11,909,054.87
G701001;Grounds	107,400	37.56	$0.00	$92,764.20	$565,636.24	$0.00	$0.00
Total:		**34.50**	**$16,478,645.95**	**$19,112,973.82**	**$6,834,984.34**	**$2,970,717.18**	**$11,909,054.87**

Deficiencies By Priority

- 1 - Response Time (< 2 yr) - $16,478,645.95
- 2 - Response Time (2-3 yrs) - $19,112,973.82
- 3 - Response Time (3-4 yrs) - $6,834,984.34
- 4 - Response Time (4-5 yrs) - $2,970,717.18
- 5 - Response Time (> 5 yrs) - $11,909,054.87

Budget Estimate Total: $57,306,376.16

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:	High School
Gross Area (SF):	313,765
Year Built:	1914
Last Renovation:	1999
Replacement Value:	$164,374,106
Repair Cost:	$56,647,975.72
Total FCI:	34.46 %
Total RSLI:	73.24 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B701001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S701001		

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 %	0.00 %	$0.00
B10 - Superstructure	37.00 %	0.04 %	$11,512.50
B20 - Exterior Enclosure	64.18 %	23.96 %	$5,403,634.48
B30 - Roofing	25.04 %	1.07 %	$40,390.59
C10 - Interior Construction	44.97 %	16.45 %	$1,430,460.48
C20 - Stairs	74.73 %	67.93 %	$334,652.91
C30 - Interior Finishes	85.72 %	32.32 %	$4,800,724.33
D10 - Conveying	105.71 %	175.99 %	$706,794.23
D20 - Plumbing	115.30 %	61.33 %	$3,736,856.12
D30 - HVAC	119.44 %	100.69 %	$35,142,452.58
D40 - Fire Protection	114.29 %	177.05 %	$4,477,606.15
D50 - Electrical	93.70 %	0.39 %	$72,383.65
E10 - Equipment	29.70 %	0.00 %	$0.00
E20 - Furnishings	25.00 %	73.39 %	$490,507.70
Totals:	**73.24 %**	**34.46 %**	**$56,647,975.72**

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	$27.30	S.F.	313,765	100	1914	2014	2052	37.00 %	0.00 %	37			$8,565,785
A1030	Slab on Grade	$5.17	S.F.	313,765	100	1914	2014	2052	37.00 %	0.00 %	37			$1,622,165
A2010	Basement Excavation	$4.36	S.F.	313,765	100	1914	2014	2052	37.00 %	0.00 %	37			$1,368,015
A2020	Basement Walls	$9.91	S.F.	313,765	100	1914	2014	2052	37.00 %	0.00 %	37			$3,109,411
B1010	Floor Construction	$85.34	S.F.	313,765	100	1914	2014	2052	37.00 %	0.04 %	37		$11,512.50	$26,776,705
B1020	Roof Construction	$14.39	S.F.	313,765	100	1914	2014	2052	37.00 %	0.00 %	37			$4,515,078
B2010	Exterior Walls	$43.20	S.F.	313,765	100	1914	2014	2052	37.00 %	0.24 %	37		$32,751.69	$13,554,648
B2020	Exterior Windows	$27.52	S.F.	313,765	40	1914	1954	2057	105.00 %	59.15 %	42		$5,107,862.48	$8,634,813
B2030	Exterior Doors	$1.16	S.F.	313,765	25	1914	1939	2042	108.00 %	72.26 %	27		$263,020.31	$363,967
B3010105	Built-Up	$37.76	S.F.	100,226	20	1999	2019	2020	25.00 %	1.07 %	5		$40,390.59	$3,784,534
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.		20				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	100,226	30	2000	2030		50.00 %	0.00 %	15			$6,014
C1010	Partitions	$21.05	S.F.	313,765	100	1914	2014	2052	37.00 %	0.35 %	37		$23,083.08	$6,604,753
C1020	Interior Doors	$3.76	S.F.	313,765	40	1914	1954	2057	105.00 %	115.92 %	42		$1,367,607.89	$1,179,756
C1030	Fittings	$2.90	S.F.	313,765	40	1914	1954	2025	25.00 %	4.37 %	10		$39,769.51	$909,919
C2010	Stair Construction	$1.18	S.F.	313,765	100	1999	2099		84.00 %	90.39 %	84		$334,652.91	$370,243

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 $
C2020	Stair Finishes	$0.39	S.F.	313,765	30	1999	2029		46.67 %	0.00 %	14			$122,368
C3010230	Paint & Covering	$13.21	S.F.	313,765	10	1914	1924	2024	90.00 %	1.83 %	9		$76,046.36	$4,144,836
C3010231	Vinyl Wall Covering	$0.97	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.		30				0.00 %	0.00 %				$0
C3020411	Carpet	$7.30	S.F.		10				0.00 %	0.00 %				$0
C3020412	Terrazzo & Tile	$75.52	S.F.	15,200	50	1914	1964	2025	20.00 %	0.00 %	10			$1,147,904
C3020413	Vinyl Flooring	$9.68	S.F.	85,600	20	1914	1934	2037	110.00 %	120.78 %	22		$1,000,779.72	$828,608
C3020414	Wood Flooring	$22.27	S.F.	91,300	25	1914	1939	2024	36.00 %	48.88 %	9		$993,788.56	$2,033,251
C3020415	Concrete Floor Finishes	$0.97	S.F.	121,665	50	1914	1964	2024	18.00 %	396.34 %	9		$467,745.15	$118,015
C3030	Ceiling Finishes	$20.97	S.F.	313,765	25	1914	1939	2042	108.00 %	34.38 %	27		$2,262,364.54	$6,579,652
D1010	Elevators and Lifts	$1.28	S.F.	313,765	35	1914	1949	2052	105.71 %	175.99 %	37		$706,794.23	$401,619
D2010	Plumbing Fixtures	$13.52	S.F.	313,765	35	1914	1949	2055	114.29 %	19.59 %	40		$831,042.13	$4,242,103
D2020	Domestic Water Distribution	$1.68	S.F.	313,765	25	1914	1939	2045	120.00 %	265.53 %	30		$1,399,692.63	$527,125
D2030	Sanitary Waste	$2.32	S.F.	313,765	30	1914	1944	2050	116.67 %	206.90 %	35		$1,506,121.36	$727,935
D2040	Rain Water Drainage	$1.90	S.F.	313,765	30	1914	1944	2050	116.67 %	0.00 %	35			$596,154
D3020	Heat Generating Systems	$18.67	S.F.	313,765	35	1914	1949	2055	114.29 %	40.67 %	40		$2,382,315.30	$5,857,993
D3030	Cooling Generating Systems	$24.48	S.F.	313,765	30	1914	1944	2050	116.67 %	77.18 %	35		$5,927,879.56	$7,680,967
D3040	Distribution Systems	$42.99	S.F.	313,765	25	1914	1939	2045	120.00 %	151.12 %	30		$20,384,051.57	$13,488,757
D3050	Terminal & Package Units	$11.60	S.F.	313,765	20	1914	1934	2040	125.00 %	0.00 %	25			$3,639,674
D3060	Controls & Instrumentation	$13.50	S.F.	313,765	20	1914	1934	2040	125.00 %	152.23 %	25		$6,448,206.15	$4,235,828
D4010	Sprinklers	$7.05	S.F.	313,765	35	1914	1949	2055	114.29 %	202.42 %	40		$4,477,606.15	$2,212,043
D4020	Standpipes	$1.01	S.F.	313,765	35	1914	1949	2055	114.29 %	0.00 %	40			$316,903
D5010	Electrical Service/Distribution	$9.70	S.F.	313,765	30	1914	1944	2035	66.67 %	0.00 %	20			$3,043,521
D5020	Lighting and Branch Wiring	$34.68	S.F.	313,765	20	1914	1934	2035	100.00 %	0.16 %	20		$17,787.91	$10,881,370
D5030	Communications and Security	$12.99	S.F.	313,765	15	1914	1929	2030	100.00 %	1.34 %	15		$54,595.74	$4,075,807
D5090	Other Electrical Systems	$1.41	S.F.	313,765	30	1914	1944	2035	66.67 %	0.00 %	20			$442,409
E1020	Institutional Equipment	$4.82	S.F.	313,765	35	1914	1949	2024	25.71 %	0.00 %	9			$1,512,347
E1090	Other Equipment	$11.10	S.F.	313,765	35	1914	1949	2026	31.43 %	0.00 %	11			$3,482,792
E2010	Fixed Furnishings	$2.13	S.F.	313,765	40	1914	1954	2025	25.00 %	73.39 %	10		$490,507.70	$668,319
								Total	**73.24 %**	**34.46 %**			**$56,647,975.72**	**$164,374,106**

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: B3010 - Roof Coverings — This system contains no images

Note: last re-roofing estimated to have been in 1999

System: C20 - Stairs — This system contains no images

Note: Element 1 stairs were replaced. Date not known for sure. Estimated to be with last renovation, 1999.

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

Note: painted block or plaster 95% - not all walls need to be repainted
glazed brick 5%

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

Note: Concrete 121,665 39%
Wood - 91,30029%
VCT - 31,50010%
VAT - 54,10017%
(All vinyl floors = 85,600sf = 27%)
Terrazzo/QT 15,2005%

System: D1010 - Elevators and Lifts — This system contains no images

Note: 3000lb traction elevator, 5 stop
4000lb hydraulic elevator 5 stop

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:	**$56,647,976**	**$0**	**$0**	**$0**	**$0**	**$4,826,043**	**$0**	**$0**	**$0**	**$11,207,080**	**$4,030,076**	**$76,711,175**
*** A - Substructure**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
*** A10 - Foundations**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1010 - Standard Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1030 - Slab on Grade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
*** A20 - Basement Construction**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2010 - Basement Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2020 - Basement Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$11,513	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$11,513**
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	$32,752	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$32,752**
B2020 - Exterior Windows	$5,107,862	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$5,107,862**
B2030 - Exterior Doors	$263,020	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$263,020**
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	$40,391	$0	$0	$0	$0	$4,826,043	$0	$0	$0	$0	$0	**$4,866,433**
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	$23,083	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$23,083**

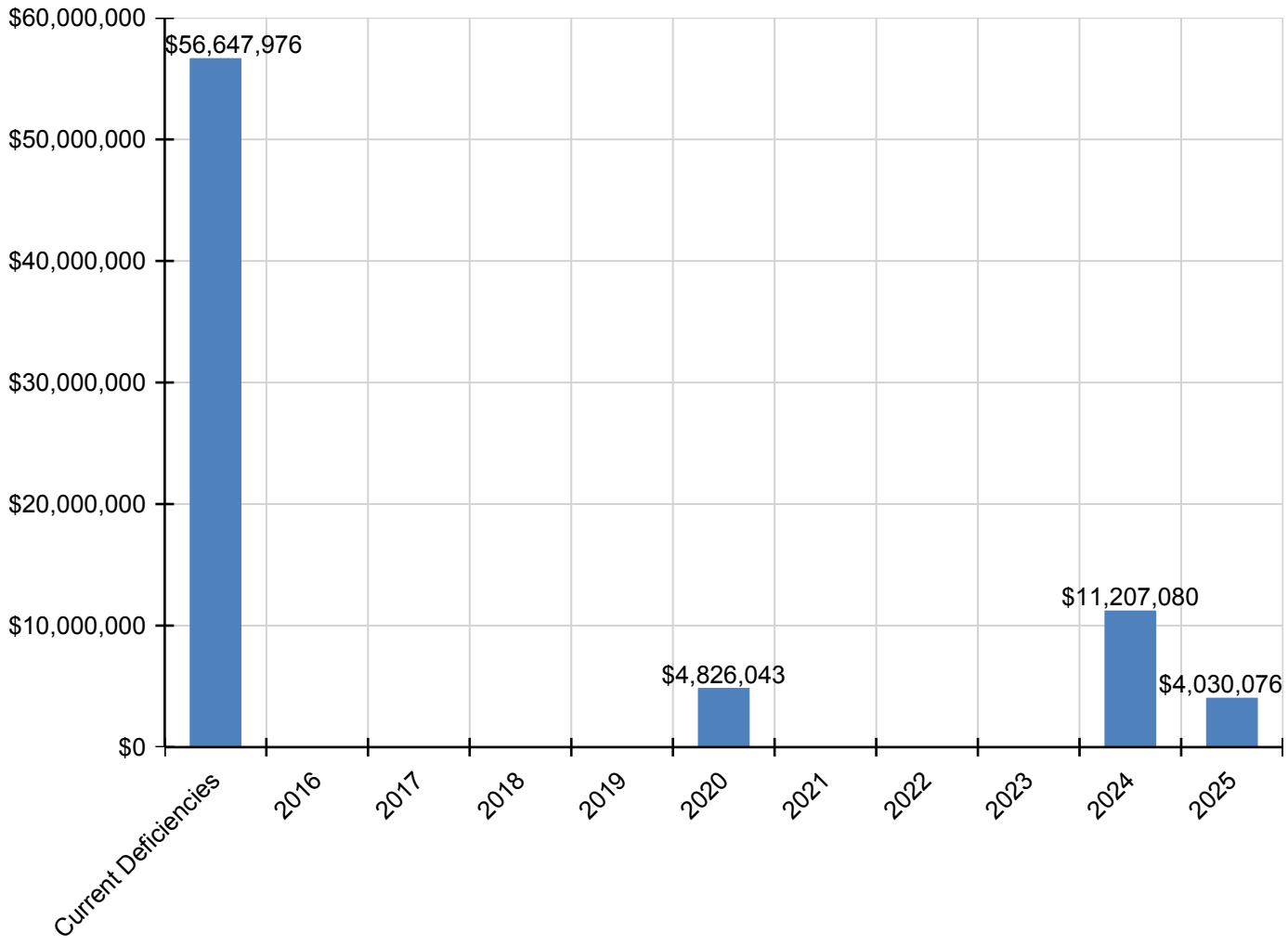
C1020 - Interior Doors	$1,367,608	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,367,608**
C1030 - Fittings	$39,770	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,345,139	**$1,384,909**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$334,653	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$334,653**
C2020 - Stair Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$76,046	$0	$0	$0	$0	$0	$0	$0	$0	$5,948,877	$0	**$6,024,924**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,696,955	**$1,696,955**
C3020413 - Vinyl Flooring	$1,000,780	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,000,780**
C3020414 - Wood Flooring	$993,789	$0	$0	$0	$0	$0	$0	$0	$0	$2,918,224	$0	**$3,912,013**
C3020415 - Concrete Floor Finishes	$467,745	$0	$0	$0	$0	$0	$0	$0	$0	$169,382	$0	**$637,127**
C3030 - Ceiling Finishes	$2,262,365	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,262,365**
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	$706,794	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$706,794**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$831,042	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$831,042**
D2020 - Domestic Water Distribution	$1,399,693	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,399,693**
D2030 - Sanitary Waste	$1,506,121	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,506,121**
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	$2,382,315	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,382,315**
D3030 - Cooling Generating Systems	$5,927,880	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$5,927,880**
D3040 - Distribution Systems	$20,384,052	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$20,384,052**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$6,448,206	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$6,448,206**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$4,477,606	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,477,606**

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	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5020 - Lighting and Branch Wiring	$17,788	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$17,788**
D5030 - Communications and Security	$54,596	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$54,596**
D5090 - Other Electrical Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,170,597	$0	**$2,170,597**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$490,508	$0	$0	$0	$0	$0	$0	$0	$0	$0	$987,981	**$1,478,489**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

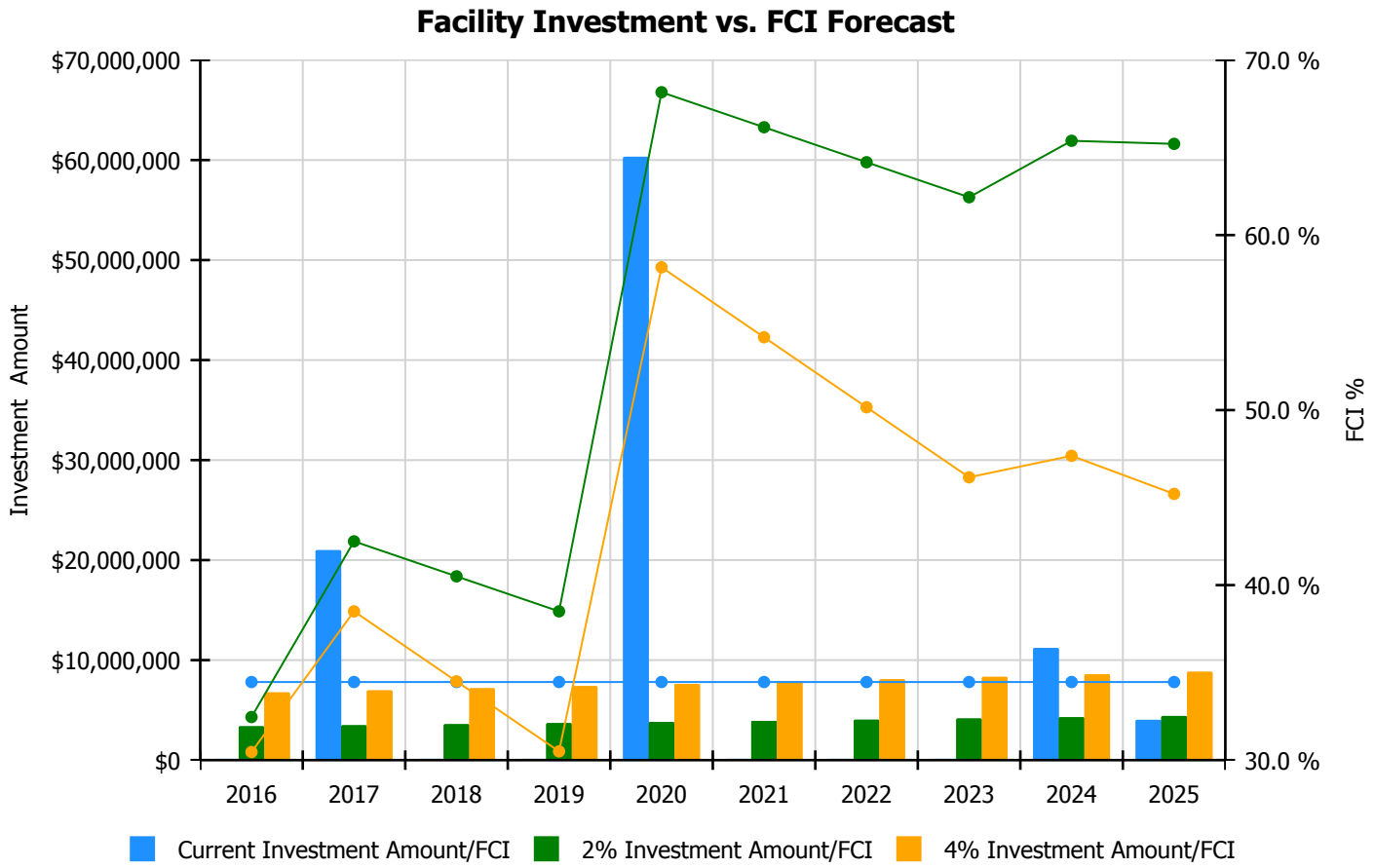
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

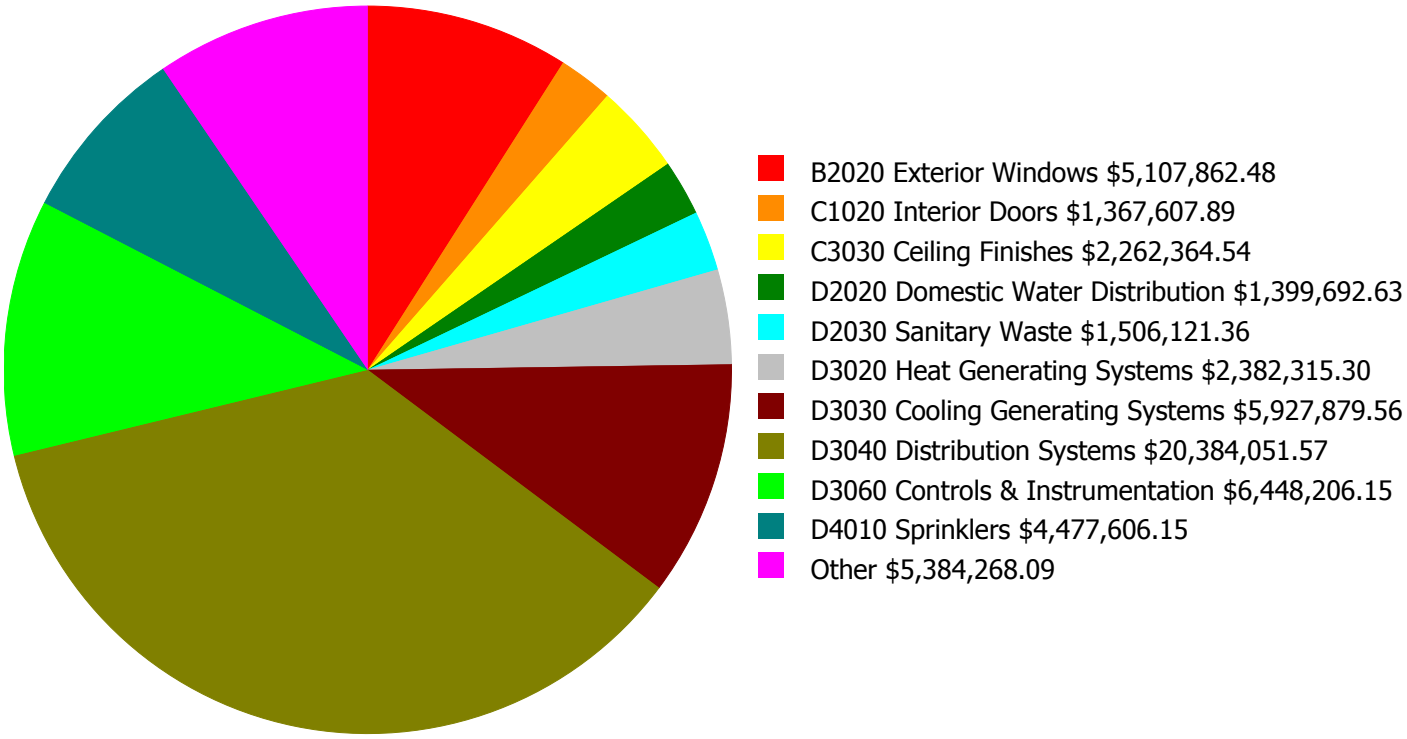
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 34.46%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$3,386,107.00	32.46 %	$6,772,213.00	30.46 %
2017	$20,992,301	$3,487,690.00	42.50 %	$6,975,380.00	38.50 %
2018	$0	$3,592,320.00	40.50 %	$7,184,641.00	34.50 %
2019	$0	$3,700,090.00	38.50 %	$7,400,180.00	30.50 %
2020	$60,329,801	$3,811,093.00	68.16 %	$7,622,186.00	58.16 %
2021	$0	$3,925,426.00	66.16 %	$7,850,851.00	54.16 %
2022	$0	$4,043,188.00	64.16 %	$8,086,377.00	50.16 %
2023	$0	$4,164,484.00	62.16 %	$8,328,968.00	46.16 %
2024	$11,207,080	$4,289,419.00	65.39 %	$8,578,837.00	47.39 %
2025	$4,030,076	$4,418,101.00	65.21 %	$8,836,202.00	45.21 %
Total:	**$96,559,258**	**$38,817,918.00**		**$77,635,835.00**	

Deficiency Summary by System

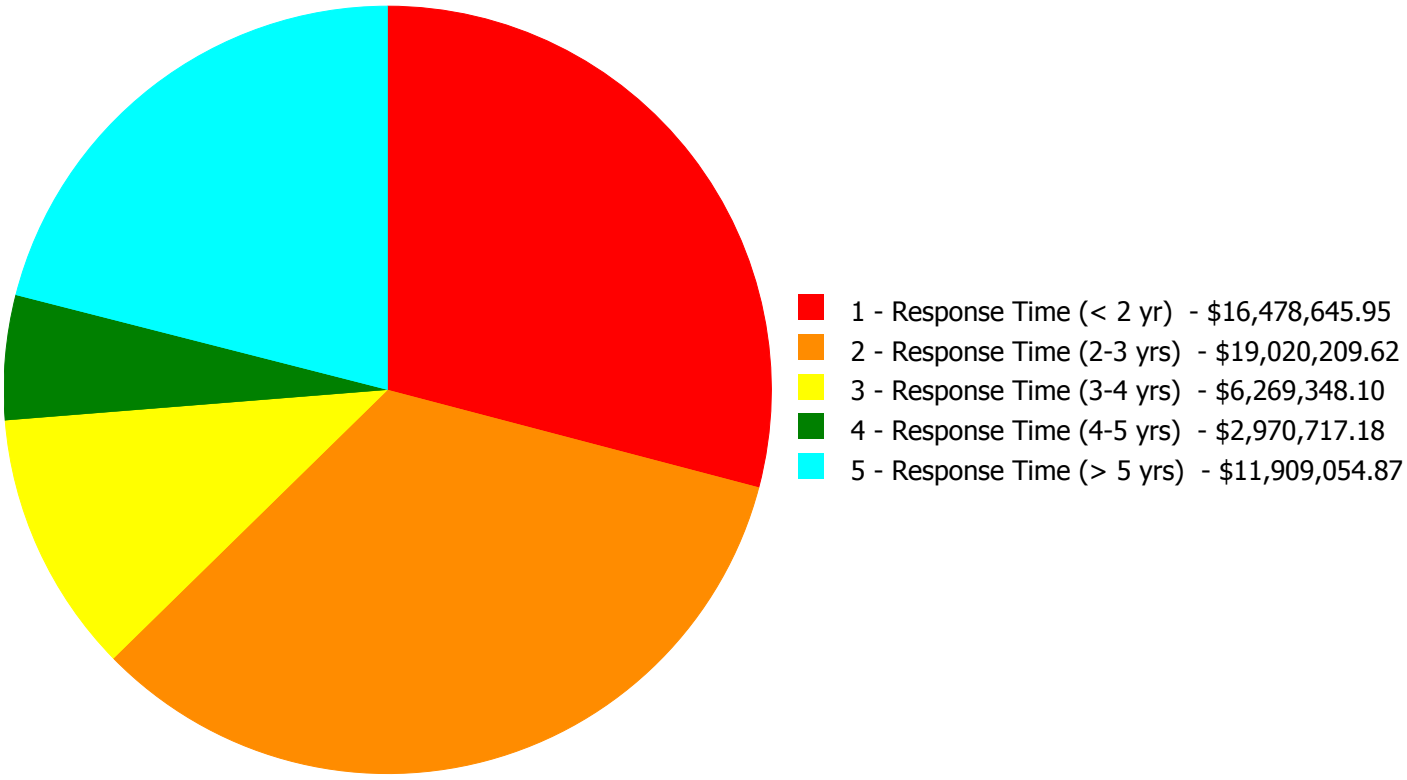
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $56,647,975.72

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: $56,647,975.72

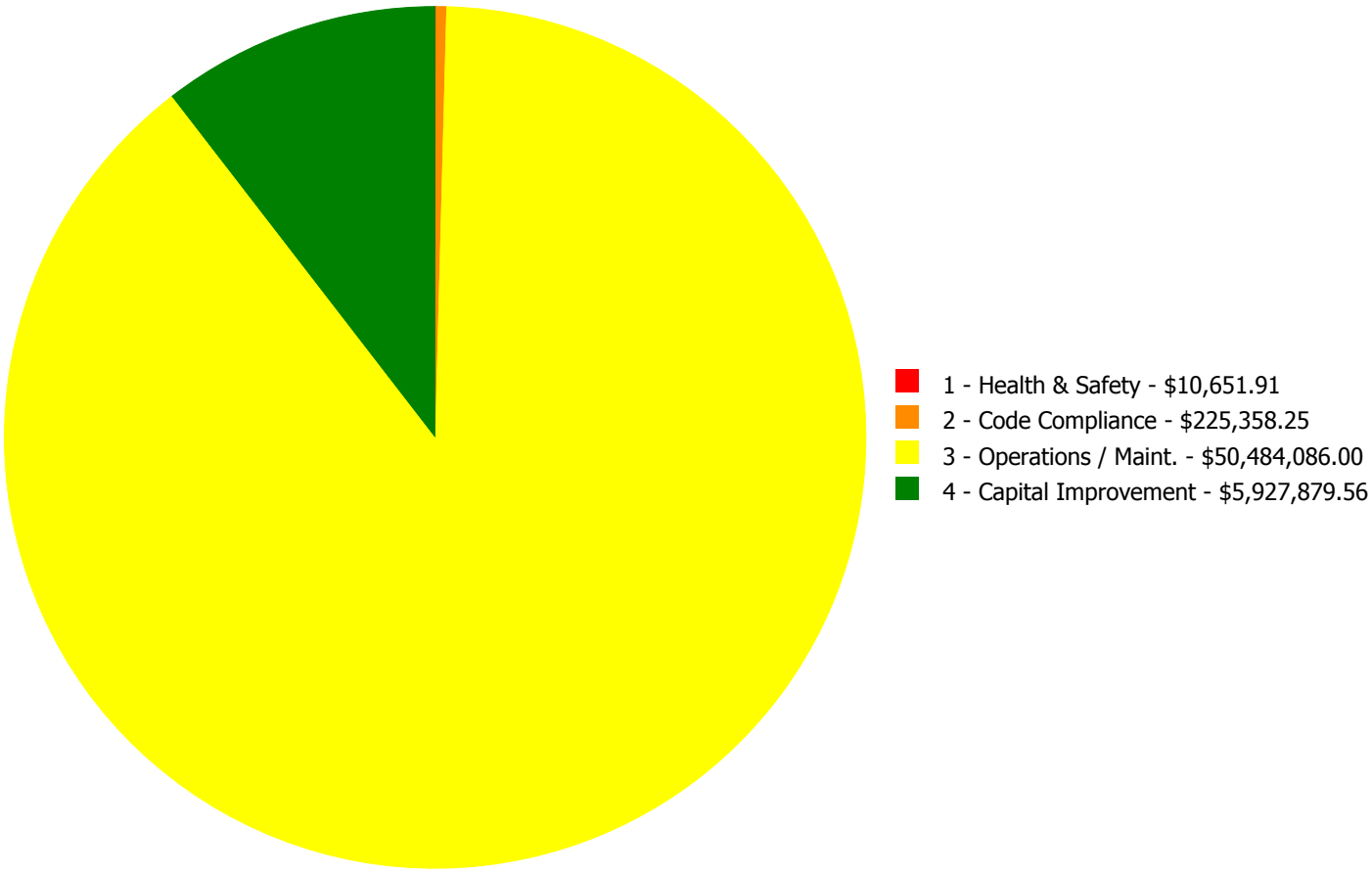
Deficiency By Priority Investment Table

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
B1010	Floor Construction	$0.00	$11,512.50	$0.00	$0.00	$0.00	$11,512.50
B2010	Exterior Walls	$4,013.20	$28,738.49	$0.00	$0.00	$0.00	$32,751.69
B2020	Exterior Windows	$0.00	$5,107,862.48	$0.00	$0.00	$0.00	$5,107,862.48
B2030	Exterior Doors	$0.00	$263,020.31	$0.00	$0.00	$0.00	$263,020.31
B3010105	Built-Up	$40,390.59	$0.00	$0.00	$0.00	$0.00	$40,390.59
C1010	Partitions	$23,083.08	$0.00	$0.00	$0.00	$0.00	$23,083.08
C1020	Interior Doors	$0.00	$1,367,607.89	$0.00	$0.00	$0.00	$1,367,607.89
C1030	Fittings	$0.00	$39,769.51	$0.00	$0.00	$0.00	$39,769.51
C2010	Stair Construction	$212,927.08	$121,725.83	$0.00	$0.00	$0.00	$334,652.91
C3010230	Paint & Covering	$0.00	$76,046.36	$0.00	$0.00	$0.00	$76,046.36
C3020413	Vinyl Flooring	$0.00	$1,000,779.72	$0.00	$0.00	$0.00	$1,000,779.72
C3020414	Wood Flooring	$0.00	$993,788.56	$0.00	$0.00	$0.00	$993,788.56
C3020415	Concrete Floor Finishes	$0.00	$467,745.15	$0.00	$0.00	$0.00	$467,745.15
C3030	Ceiling Finishes	$0.00	$2,262,364.54	$0.00	$0.00	$0.00	$2,262,364.54
D1010	Elevators and Lifts	$0.00	$0.00	$706,794.23	$0.00	$0.00	$706,794.23
D2010	Plumbing Fixtures	$0.00	$831,042.13	$0.00	$0.00	$0.00	$831,042.13
D2020	Domestic Water Distribution	$0.00	$0.00	$0.00	$97,894.18	$1,301,798.45	$1,399,692.63
D2030	Sanitary Waste	$0.00	$0.00	$1,506,121.36	$0.00	$0.00	$1,506,121.36
D3020	Heat Generating Systems	$0.00	$0.00	$0.00	$2,382,315.30	$0.00	$2,382,315.30
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$5,927,879.56	$5,927,879.56
D3040	Distribution Systems	$16,125,848.35	$0.00	$4,056,432.51	$0.00	$201,770.71	$20,384,051.57
D3060	Controls & Instrumentation	$0.00	$6,448,206.15	$0.00	$0.00	$0.00	$6,448,206.15
D4010	Sprinklers	$0.00	$0.00	$0.00	$0.00	$4,477,606.15	$4,477,606.15
D5020	Lighting and Branch Wiring	$17,787.91	$0.00	$0.00	$0.00	$0.00	$17,787.91
D5030	Communications and Security	$54,595.74	$0.00	$0.00	$0.00	$0.00	$54,595.74
E2010	Fixed Furnishings	$0.00	$0.00	$0.00	$490,507.70	$0.00	$490,507.70
	Total:	$16,478,645.95	$19,020,209.62	$6,269,348.10	$2,970,717.18	$11,909,054.87	$56,647,975.72

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: $56,647,975.72

Deficiency Details by Priority

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

Priority 1 - Response Time (< 2 yr):

System: B2010 - Exterior Walls

Location: exterior wall - element 4
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Re-caulk exterior control joints and other caulk joints
Qty: 200.00
Unit of Measure: L.F.
Estimate: $4,013.20
Assessor Name: System
Date Created: 02/24/2016

Notes: Repair/repoint limestone panel joints on Element 4 exterior walls facing Oxford Ave and Oakland St. (200ft)

System: B3010105 - Built-Up

Location: roof
Distress: Inadequate
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Remove and Replace Built Up Roof
Qty: 1,000.00
Unit of Measure: S.F.
Estimate: $33,882.01
Assessor Name: System
Date Created: 02/24/2016

Notes: Rebuild 4 areas of roof with poor drainage (remove membrane, improve slope) (1000sf)

System: B3010105 - Built-Up

Location: roof - brick wall flashing

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

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

Qty: 100.00

Unit of Measure: L.F.

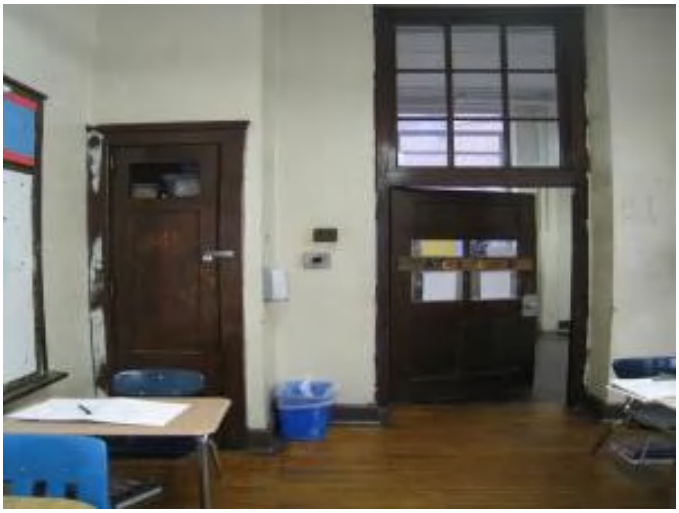
Estimate: $6,508.58

Assessor Name: System

Date Created: 02/24/2016

Notes: Repair roof flashing set into masonry (100ft)

System: C1010 - Partitions



Location: corridor walls

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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.

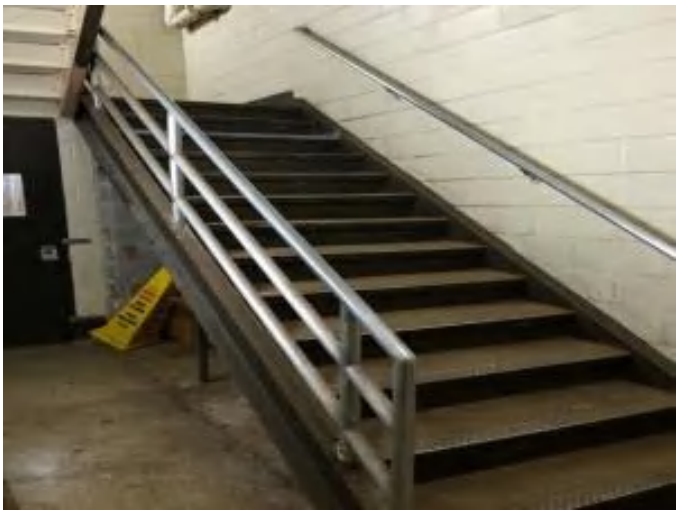
Estimate: $23,083.08

Assessor Name: System

Date Created: 02/25/2016

Notes: Remove non-fire rated glass transoms, replace with fire rated gypsum board (1000sf)

System: C2010 - Stair Construction



Location: stairways - element 4

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: 600.00

Unit of Measure: L.F.

Estimate: $202,275.17

Assessor Name: System

Date Created: 02/25/2016

Notes: Remove and replace handrails and guards with code compliant systems (3 stairways x4 stories; =50x12=600lf railings)

System: C2010 - Stair Construction

Location: balcony in auditorium

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

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

Qty: 70.00

Unit of Measure: L.F.

Estimate: $10,651.91

Assessor Name: System

Date Created: 02/25/2016

Notes: Provide new guard railing at edge of balcony in auditorium (70ft)
Balcony is closed to the public and closed off from view until repaired.

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace the existing unit ventilators with new units designed to provide adequate ventilation per ASHRAE Std 62 - insert the SF of bldg. in the qty.

Qty: 313,000.00

Unit of Measure: S.F.

Estimate: $15,098,860.99

Assessor Name: System

Date Created: 03/02/2016

Notes: Replace the existing unit ventilators throughout the main building with new 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 exchanger.

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: 313,000.00

Unit of Measure: S.F.

Estimate: $1,026,987.36

Assessor Name: System

Date Created: 03/02/2016

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

System: D5020 - Lighting and Branch Wiring

Location: Computer and Science Rooms

Distress: Inadequate

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace Wiring Device

Qty: 1.00

Unit of Measure: Ea.

Estimate: $17,787.91

Assessor Name: System

Date Created: 01/06/2016

Notes: Remove existing floor mounted receptacles and provide power to the computer desks by using receptacles on power poles. Estimated 30 receptacles.

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: $54,595.74

Assessor Name: System

Date Created: 01/06/2016

Notes: Replace existing master clock system with new wireless clock system.

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

System: B1010 - Floor Construction

Location: basement - bottom of 1st floor

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: $6,719.66

Assessor Name: System

Date Created: 02/24/2016

Notes: Repair spalling concrete floor slab above basement (500sf)

System: B1010 - Floor Construction

Location: cafeteria

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace metal floor grate or traffic mat

Qty: 50.00

Unit of Measure: S.F.

Estimate: $4,792.84

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace rusted steel cover for steam trench in cafeteria (1ft x 50ft)

System: B2010 - Exterior Walls

Location: basement
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Repair spalled concrete wall structure
Qty: 200.00
Unit of Measure: S.F.
Estimate: $11,343.24
Assessor Name: System
Date Created: 02/24/2016

Notes: Repair cracked concrete encasement around steel columns (8 columns 200sf)

System: B2010 - Exterior Walls

Location: exterior limestone
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: 02/24/2016

Notes: Powerwash brick facing Oakland St. and limestone banding, door and window accents (10,000sf)

System: B2010 - Exterior Walls

Location: exterior walls - chimney, element 2, element 4

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: 200.00

Unit of Measure: S.F.

Estimate: $6,457.90

Assessor Name: System

Date Created: 02/24/2016

Notes: Repoint cracks in brick wall on Element 4, facing Oxford Ave and Element 3 facing Oakland St. (200sf)

System: B2020 - Exterior Windows

Location: 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: 850.00

Unit of Measure: Ea.

Estimate: $5,107,862.48

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace all exterior windows (850 3.5 x 8 average size)

System: B2030 - Exterior Doors

Location: exterior doors

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 34.00

Unit of Measure: Ea.

Estimate: $263,020.31

Assessor Name: System

Date Created: 02/24/2016

Notes: Replace all exterior doors and frames; also provide new exit hardware. (34)3x7

System: C1020 - Interior Doors

Location: corridor doors

Distress: Building / MEP Codes

Category: 3 - Operations / Maint.

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

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

Qty: 250.00

Unit of Measure: Ea.

Estimate: $1,192,646.78

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace all fire-rated wood doors and hardware in hallways (250)

System: C1020 - Interior Doors

Location: interior non-rated doors
Distress: Appearance
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Refinish interior doors
Qty: 72.00
Unit of Measure: Ea.
Estimate: $59,629.17
Assessor Name: System
Date Created: 02/25/2016

Notes: Refinish all non-fire rated wood interior doors, frames and hardware inside classrooms, closets, offices, etc. (72)

System: C1020 - Interior Doors

Location: stairway doors
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: 02/25/2016

Notes: Refinish fire rated steel stairway doors (70)

System: C1020 - Interior Doors

Location: corridor doors

Distress: Security Issue

Category: 3 - Operations / Maint.

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

Correction: Provide security hardware for classroom and office doors

Qty: 250.00

Unit of Measure: Ea.

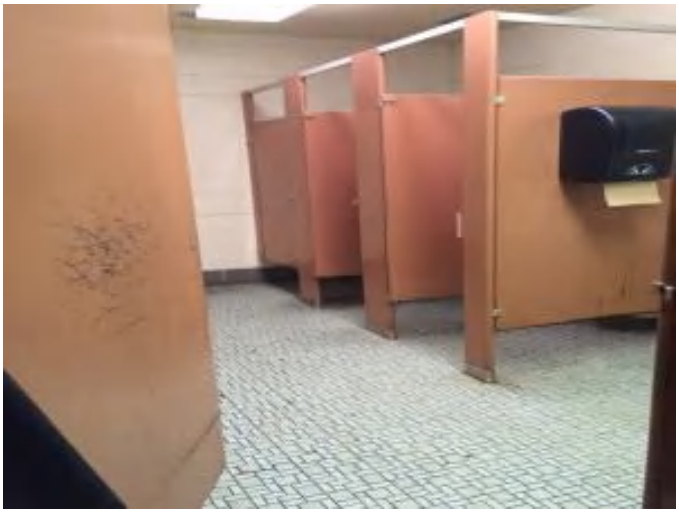
Estimate: $57,359.13

Assessor Name: System

Date Created: 02/25/2016

Notes: Provide security hardware for classrooms and offices, locking from inside classroom. (250)

System: C1030 - Fittings



Location: toilet rooms - element 4

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace damaged toilet paritions - handicap units

Qty: 10.00

Unit of Measure: Ea.

Estimate: $32,479.17

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace damaged steel water closet partitions with HDPE plastic partitions (assume 10)

System: C1030 - Fittings

Location: toilet rooms

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace toilet accessories - select accessories and quantity

Qty: 6.00

Unit of Measure: Ea.

Estimate: $7,290.34

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace toilet room accessories where broken or missing (6 sets)

System: C2010 - Stair Construction

Location: stairways - element 4

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace exterior enclosed stair tower egress stairs - per flight of stairs - stairs only

Qty: 2.00

Unit of Measure: Flight

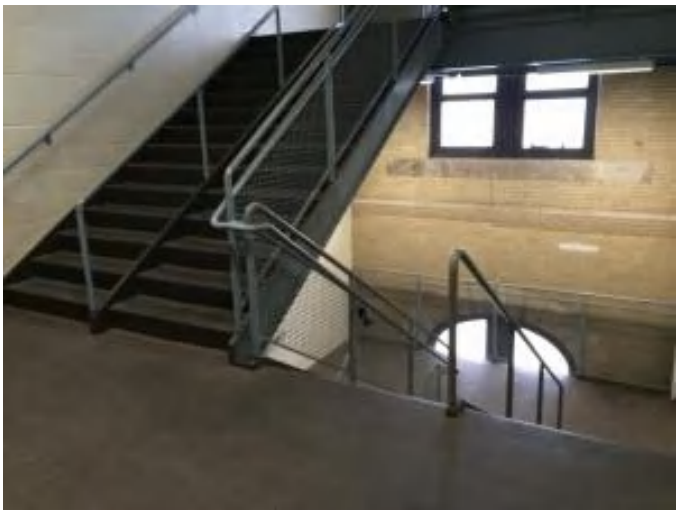
Estimate: $107,550.65

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace rusted stairway runs in Element 4 (2 stairs, 1 story runs)

System: C2010 - Stair Construction



Location: stairways - element 1

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Re-paint stairway metal balustrade - based on SF of balustrades - paint both sides

Qty: 1,000.00

Unit of Measure: S.F.

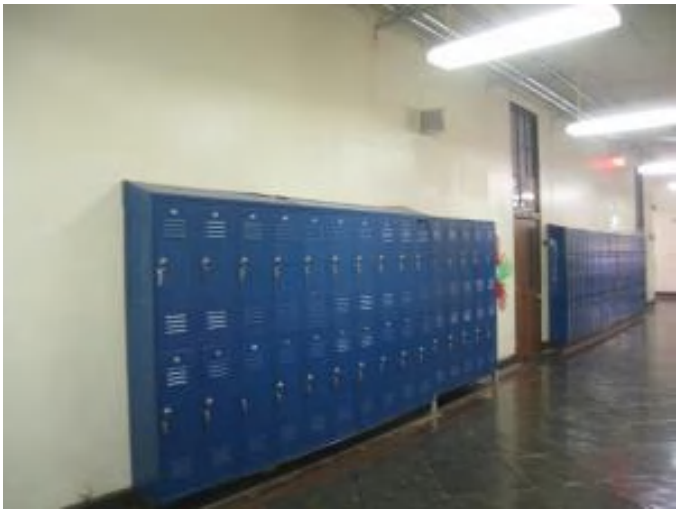
Estimate: $14,175.18

Assessor Name: System

Date Created: 02/25/2016

Notes: Repaint steel handrails in element 1 stairs (1000ft)

System: C3010230 - Paint & Covering



Location: corridors - lockers

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: 10,000.00

Unit of Measure: S.F.

Estimate: $38,536.35

Assessor Name: System

Date Created: 02/25/2016

Notes: Repaint steel lockers throughout the building (10,000sf)

System: C3010230 - Paint & Covering

Location: interior walls - spalling plaster

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 5,000.00

Unit of Measure: S.F.

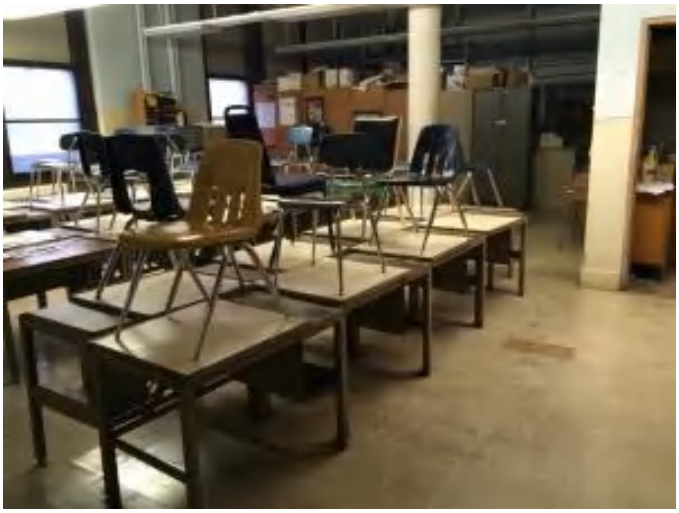
Estimate: $37,510.01

Assessor Name: System

Date Created: 02/25/2016

Notes: Repair peeling and water damaged walls and beams on high walls sill in gyms; repair/repaint water damaged and cracked plaster walls and ceilings throughout the building (5,000sf)

System: C3020413 - Vinyl Flooring



Location: corridors, cafeteria, classrooms

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 54,100.00

Unit of Measure: S.F.

Estimate: $820,516.74

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace VAT floors using proper asbestos abatement procedures if determined asbestos is present. (54,100sf)

System: C3020413 - Vinyl Flooring

Location: classrooms, offices, cafeteria

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove and replace VCT

Qty: 15,000.00

Unit of Measure: S.F.

Estimate: $180,262.98

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace approximately half of all VCT floors (15,000sf)

System: C3020414 - Wood Flooring

Location: classrooms, gym, auditorium wood floors

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Refinish wood floors

Qty: 91,300.00

Unit of Measure: S.F.

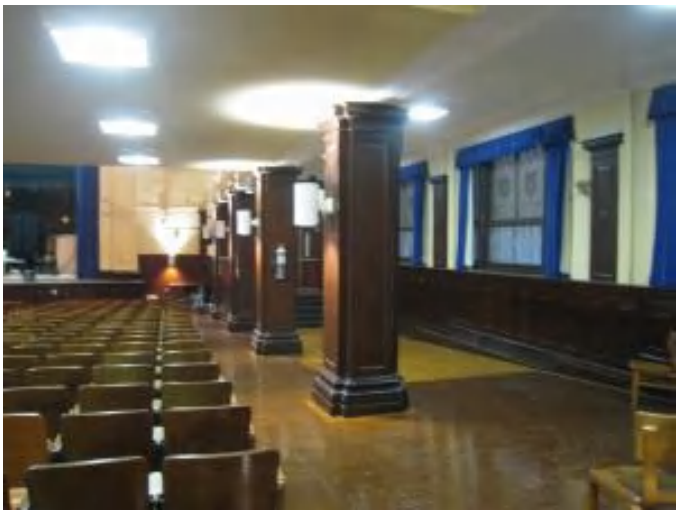
Estimate: $983,021.62

Assessor Name: System

Date Created: 02/25/2016

Notes: Strip, sand, repair and refinish all wood floors in classrooms, gymnasium, and in auditorium (91,300sf)

System: C3020414 - Wood Flooring



Location: wood wainscot on wall in auditorium

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Refinish wood floors

Qty: 1,000.00

Unit of Measure: S.F.

Estimate: $10,766.94

Assessor Name: System

Date Created: 02/25/2016

Notes: Repair and re-stain scratched and damaged wood wainscot on wall in auditorium (1000sf)

System: C3020415 - Concrete Floor Finishes

Location: corridors and mech rooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Clean and reseal concrete floors

Qty: 121,665.00

Unit of Measure: S.F.

Estimate: $467,745.15

Assessor Name: System

Date Created: 02/25/2016

Notes: Clean and reseal concrete floors in hallways, stairways, and mechanical rooms (121,665sf)

System: C3030 - Ceiling Finishes

Location: classrooms, corridors

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 150,000.00

Unit of Measure: S.F.

Estimate: $2,262,364.54

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace (most of) 2x4 acoustical tile ceilings where damaged or where grid is rusted (150,000sf)

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: 35.00

Unit of Measure: Ea.

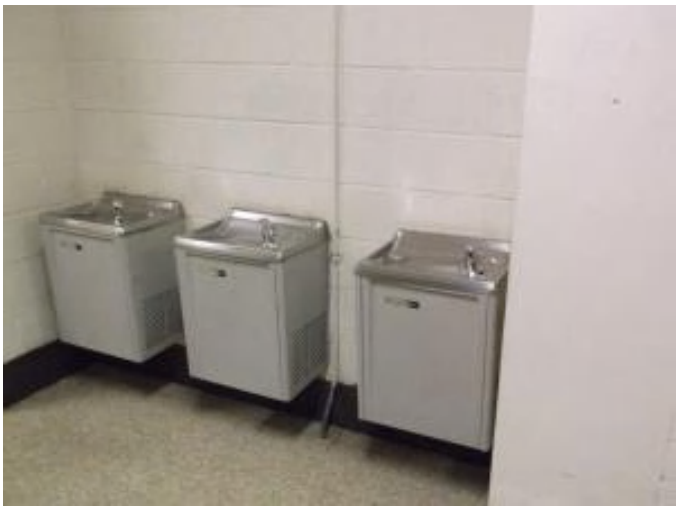
Estimate: $261,175.17

Assessor Name: System

Date Created: 03/02/2016

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: 16.00

Unit of Measure: Ea.

Estimate: $251,086.34

Assessor Name: System

Date Created: 03/02/2016

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 lavatory - quantify accessible if required

Qty: 32.00

Unit of Measure: Ea.

Estimate: $121,952.40

Assessor Name: System

Date Created: 03/02/2016

Notes: Replace all lavatories 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 or replace wall hung urinals

Qty: 24.00

Unit of Measure: Ea.

Estimate: $88,945.30

Assessor Name: System

Date Created: 03/02/2016

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: 8.00

Unit of Measure: Ea.

Estimate: $54,528.74

Assessor Name: System

Date Created: 03/02/2016

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: 14.00

Unit of Measure: Ea.

Estimate: $53,354.18

Assessor Name: System

Date Created: 03/02/2016

Notes: Replace science lab sinks in the building.

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 (350KSF)

Qty: 350,000.00

Unit of Measure: S.F.

Estimate: $6,448,206.15

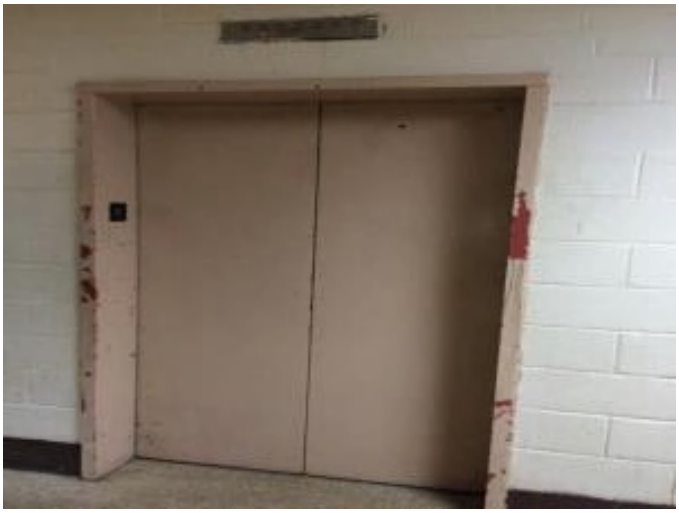
Assessor Name: System

Date Created: 03/02/2016

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

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

System: D1010 - Elevators and Lifts



Location: corridors

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace Elevator - 4 to 6 stop electric traction - add to the estimate for the number of stops over 4

Qty: 2.00

Unit of Measure: Ea.

Estimate: $706,794.23

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace two elevators: 3000 lb capacity 5 stop elevator; 4000 lb capacity 5 stop elevator

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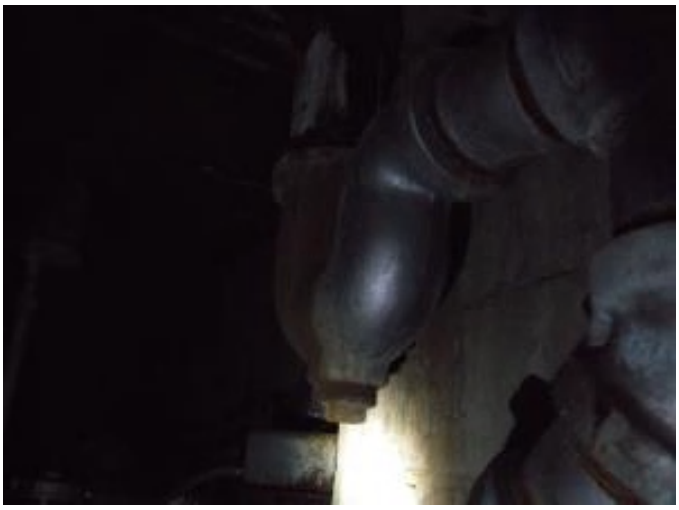
System: D2030 - Sanitary Waste



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. (+300KSF)

Qty: 342,780.00

Unit of Measure: S.F.

Estimate: $1,506,121.36

Assessor Name: System

Date Created: 03/02/2016

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

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 313,000.00

Unit of Measure: S.F.

Estimate: $2,961,096.69

Assessor Name: System

Date Created: 03/02/2016

Notes: Hire a qualified contractor to examine the steam and condensate piping in service for 47 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.

System: D3040 - Distribution Systems

Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Gymnasium (single station)

Qty: 12,000.00

Unit of Measure: S.F.

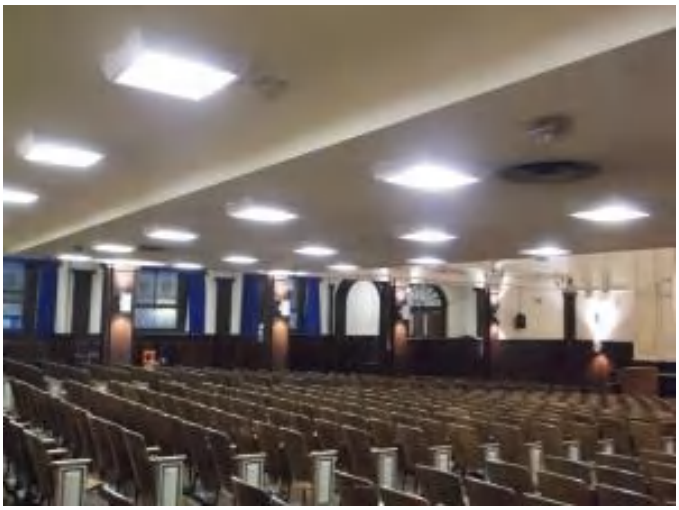
Estimate: $454,950.74

Assessor Name: System

Date Created: 03/02/2016

Notes: Provide ventilation, heating and cooling for the Gymnasium and lockers by replacing the existing heating and ventilating unit.

System: D3040 - Distribution Systems



Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Auditorium (800 seat).

Qty: 800.00

Unit of Measure: Seat

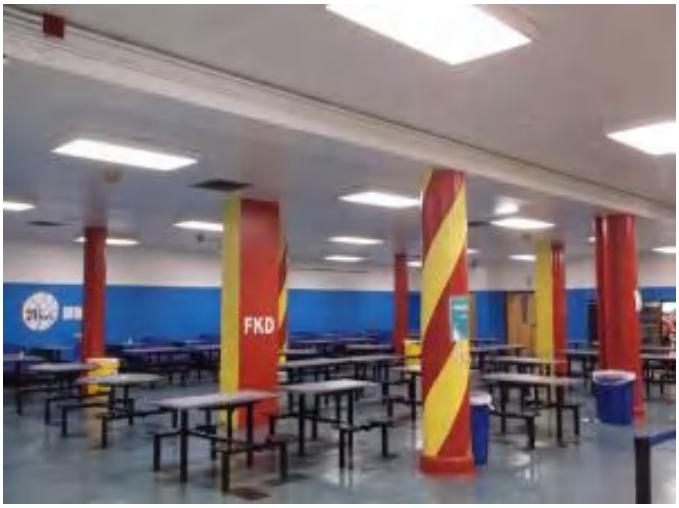
Estimate: $409,015.95

Assessor Name: System

Date Created: 03/02/2016

Notes: Provide ventilation, heating and cooling for the Auditorium by removing the existing heating and ventilating and installing a new modular constant volume air handling unit with heating and cooling.

System: D3040 - Distribution Systems



Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Cafeteria (850)

Qty: 850.00

Unit of Measure: Student

Estimate: $231,369.13

Assessor Name: System

Date Created: 03/02/2016

Notes: Provide ventilation, heating and cooling for the Cafeteria by removing the existing heating and ventilating unit and installing a new modular constant volume air handling unit with heating, cooling, distribution ductwork and registers.

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

System: D2020 - Domestic Water Distribution

Location: Main boiler mechanica equipment room
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace instantaneous water heater
Qty: 4.00
Unit of Measure: Ea.
Estimate: $97,894.18
Assessor Name: System
Date Created: 03/02/2016

Notes: Replace four instantaneous natural gas fired water heaters.

System: D3020 - Heat Generating Systems

Location: Main boiler mechanical equipment room
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace boiler, fire tube (500 HP)
Qty: 4.00
Unit of Measure: Ea.
Estimate: $2,382,315.30
Assessor Name: System
Date Created: 03/02/2016

Notes: Replace four steam boilers.

System: E2010 - Fixed Furnishings

Location: auditorium seating

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Refinish auditorium seating

Qty: 1,500.00

Unit of Measure: Ea.

Estimate: $490,507.70

Assessor Name: System

Date Created: 02/25/2016

Notes: Refinish damaged folding wood auditorium chairs (1500)

Priority 5 - Response Time (> 5 yrs):

System: D2020 - Domestic Water Distribution

Location: Main boiler mechanica equipment room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace domestic water piping (250 KSF)

Qty: 313,000.00

Unit of Measure: S.F.

Estimate: $1,301,798.45

Assessor Name: System

Date Created: 03/02/2016

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

System: D3030 - Cooling Generating Systems

Location: Throughout the building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Install chilled water system with distribution piping and pumps. (+350KSF)

Qty: 350,000.00

Unit of Measure: S.F.

Estimate: $5,927,879.56

Assessor Name: System

Date Created: 03/02/2016

Notes: Add a two 500 ton air cooled chillers.

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace finned tube radiation terminals (per 100 LF)

Qty: 500.00

Unit of Measure: L.F.

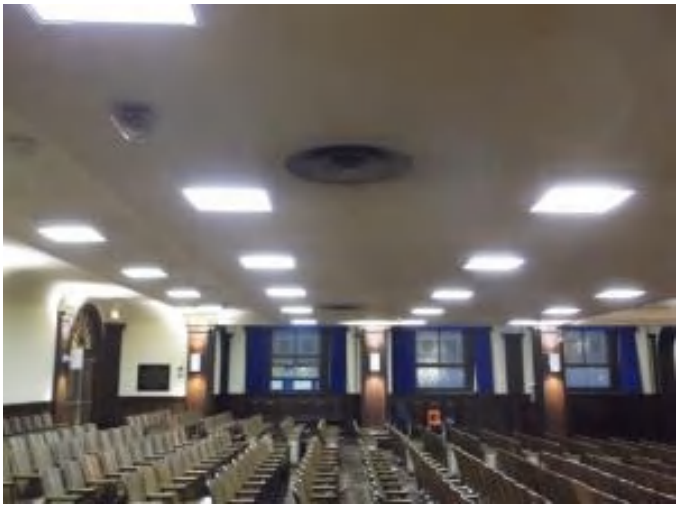
Estimate: $201,770.71

Assessor Name: System

Date Created: 03/02/2016

Notes: Replace the steam convection and replace radiators with steam convection.

System: D4010 - Sprinklers



Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Install a fire protection sprinkler system

Qty: 313,000.00

Unit of Measure: S.F.

Estimate: $4,477,606.15

Assessor Name: System

Date Created: 03/02/2016

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

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, 12,200 MBH, 364.5 BHP, includes burners, controls and insulated jacket, packaged	4.00	Ea.	Main boiler mechanical equipment room	Wel McLain	2494			35			$275,340.50	$1,211,498.20
D3030 Cooling Generating Systems	Cooling tower, galvanized steel, packaged unit, draw thru, 110 ton	1.00	Ea.	Adjacent to building	York	YCAS0098EB46XGA			30			$51,369.50	$56,506.45
D4010 Sprinklers	Fire pumps, electric, 1250 GPM, 75 psi, 75 HP, 1770 RPM, 5" pump, including controller, fittings and relief valve	1.00	Ea.	Main boiler mechanical equipment room	Patterson				35			$31,950.70	$35,145.77
D5010 Electrical Service/Distribution	Load interrupter switch, 2 position, 300 kVA & below, 13.8 kV, 600 amp w/CLF fuses, NEMA 1	5.00	Ea.	Electrical Rooms					30	1914	2046	$42,600.60	$234,303.30
D5010 Electrical Service/Distribution	Switchboards, distribution section, aluminum bus bars, 4 W, 120/208 or 277/480 V, 3000 amp, excl breakers	2.00	Ea.	Electrical Room					30	1914	2046	$10,743.30	$23,635.26
D5010 Electrical Service/Distribution	Transformer, liquid-filled, 5 kV or 15 kV primary, 277/480 V secondary, 3 phase, 1500 kVA, pad mounted	2.00	Ea.	Electrical Room					30	1914	2017	$58,498.20	$128,696.04
												Total:	**$1,689,785.02**

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):	107,400
Year Built:	1914
Last Renovation:	
Replacement Value:	$1,752,807
Repair Cost:	$658,400.44
Total FCI:	37.56 %
Total RSLI:	25.64 %

Description:

Attributes:

General Attributes:

Bldg ID:	S701001	Site ID:	S701001

Condition Summary

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

UNIFORMAT Classification	RSLI %	FCI %	Current Repair Cost
G20 - Site Improvements	28.90 %	51.21 %	$658,400.44
G40 - Site Electrical Utilities	16.67 %	0.00 %	$0.00
Totals:	**25.64 %**	**37.56 %**	**$658,400.44**

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	1914	1944	2047	106.67 %	0.00 %	32			$0
G2020	Parking Lots	$7.65	S.F.	15,700	30	1914	1944	2047	106.67 %	470.95 %	32		$565,636.24	$120,105
G2030	Pedestrian Paving	$11.52	S.F.	45,300	40	1914	1954	2022	17.50 %	9.02 %	7		$47,082.16	$521,856
G2040	Site Development	$4.36	S.F.	107,400	25	1914	1939	2020	20.00 %	9.76 %	5		$45,682.04	$468,264
G2050	Landscaping & Irrigation	$3.78	S.F.	46,400	15	1914	1929	2020	33.33 %	0.00 %	5			$175,392
G4020	Site Lighting	$3.58	S.F.	107,400	30	1914	1944	2020	16.67 %	0.00 %	5			$384,492
G4030	Site Communications & Security	$0.77	S.F.	107,400	30	1914	1944	2020	16.67 %	0.00 %	5			$82,698
								Total	**25.64 %**	**37.56 %**			**$658,400.44**	**$1,752,807**

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.

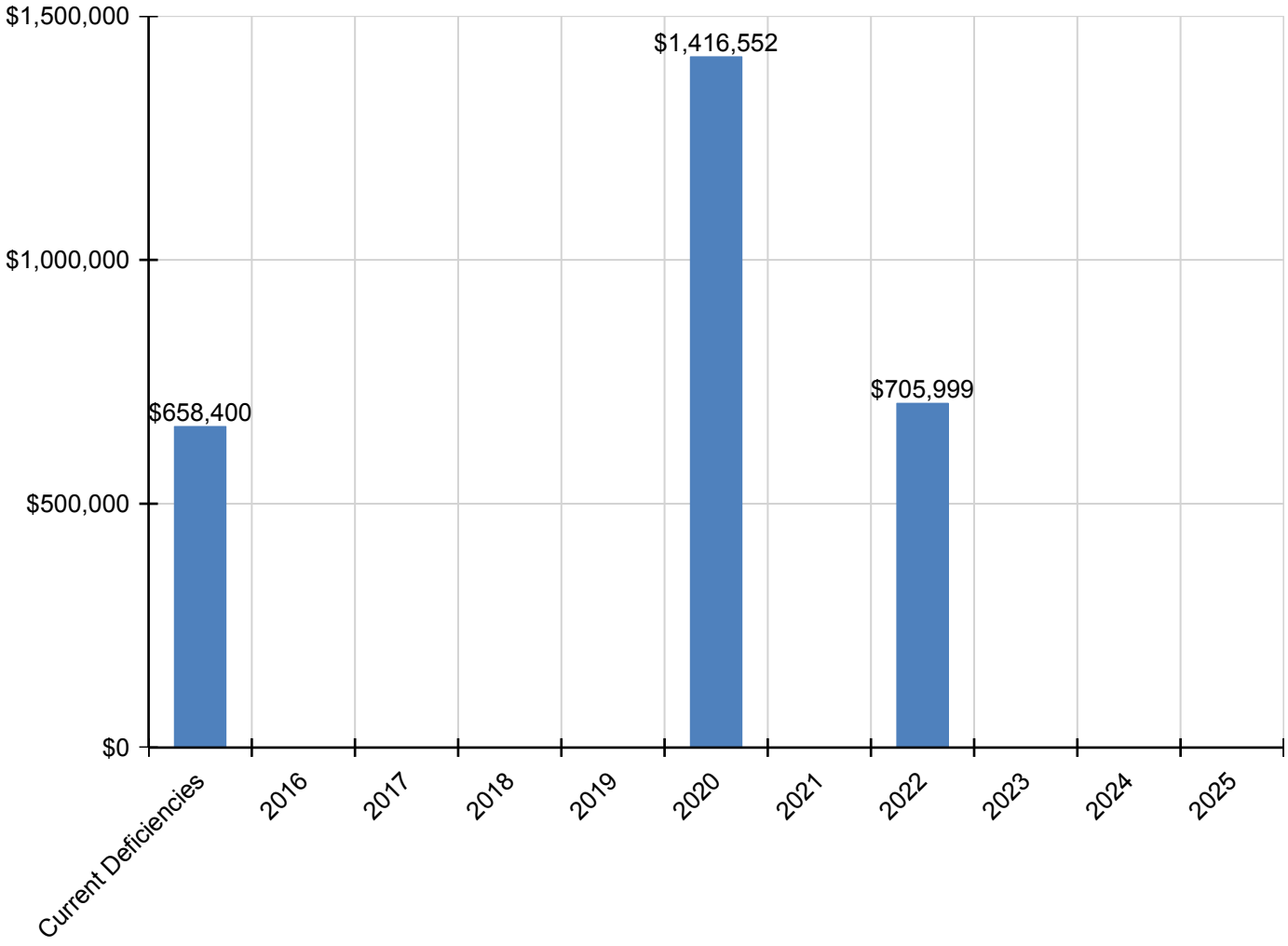
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$658,400**	**$0**	**$0**	**$0**	**$0**	**$1,416,552**	**$0**	**$705,999**	**$0**	**$0**	**$0**	**$2,780,951**
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	$565,636	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$565,636**
G2030 - Pedestrian Paving	$47,082	$0	$0	$0	$0	$0	$0	$705,999	$0	$0	$0	**$753,081**
G2040 - Site Development	$45,682	$0	$0	$0	$0	$597,130	$0	$0	$0	$0	$0	**$642,813**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$223,660	$0	$0	$0	$0	$0	**$223,660**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$0	$0	$0	$0	$0	$490,305	$0	$0	$0	$0	$0	**$490,305**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$105,457	$0	$0	$0	$0	$0	**$105,457**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

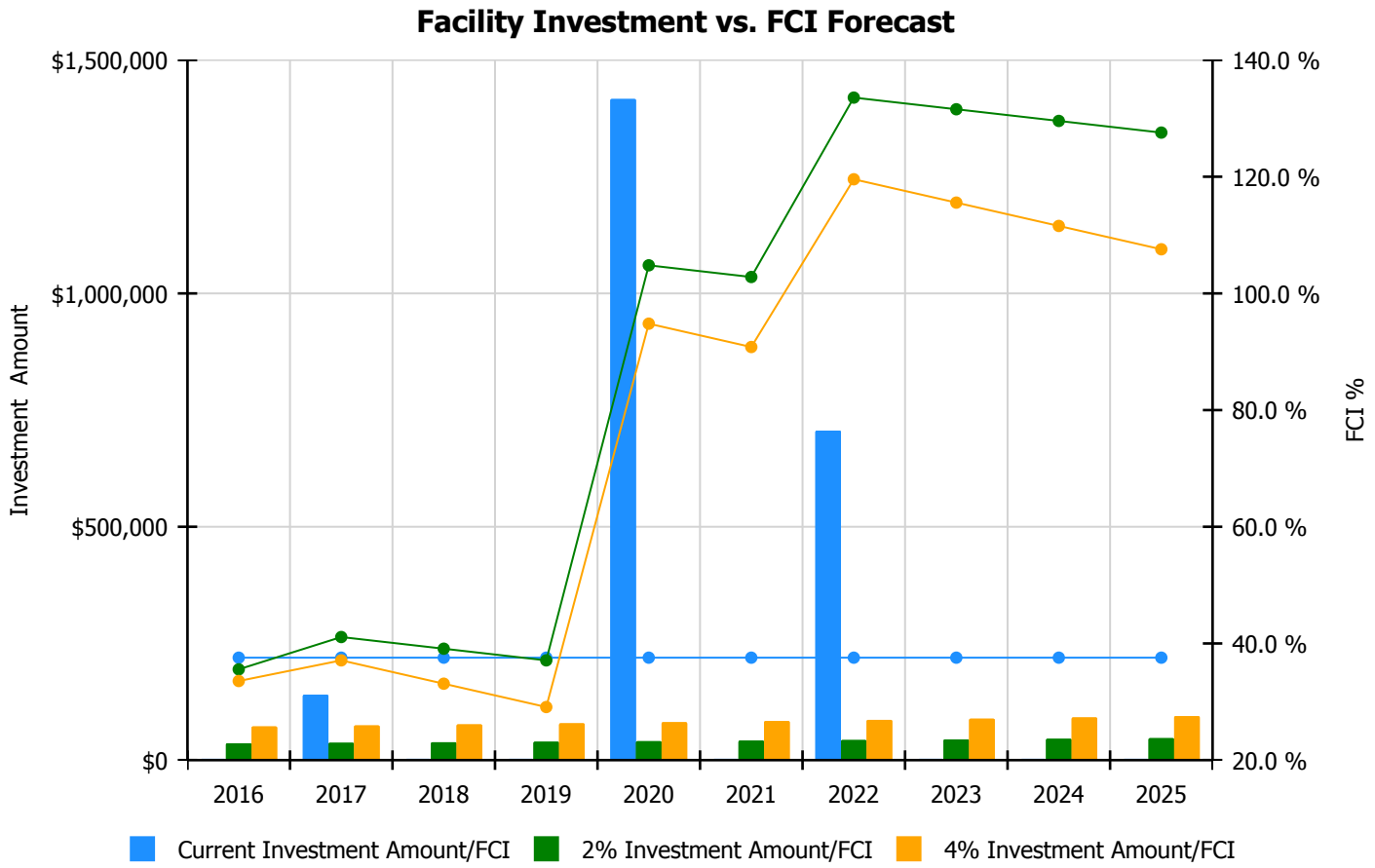
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

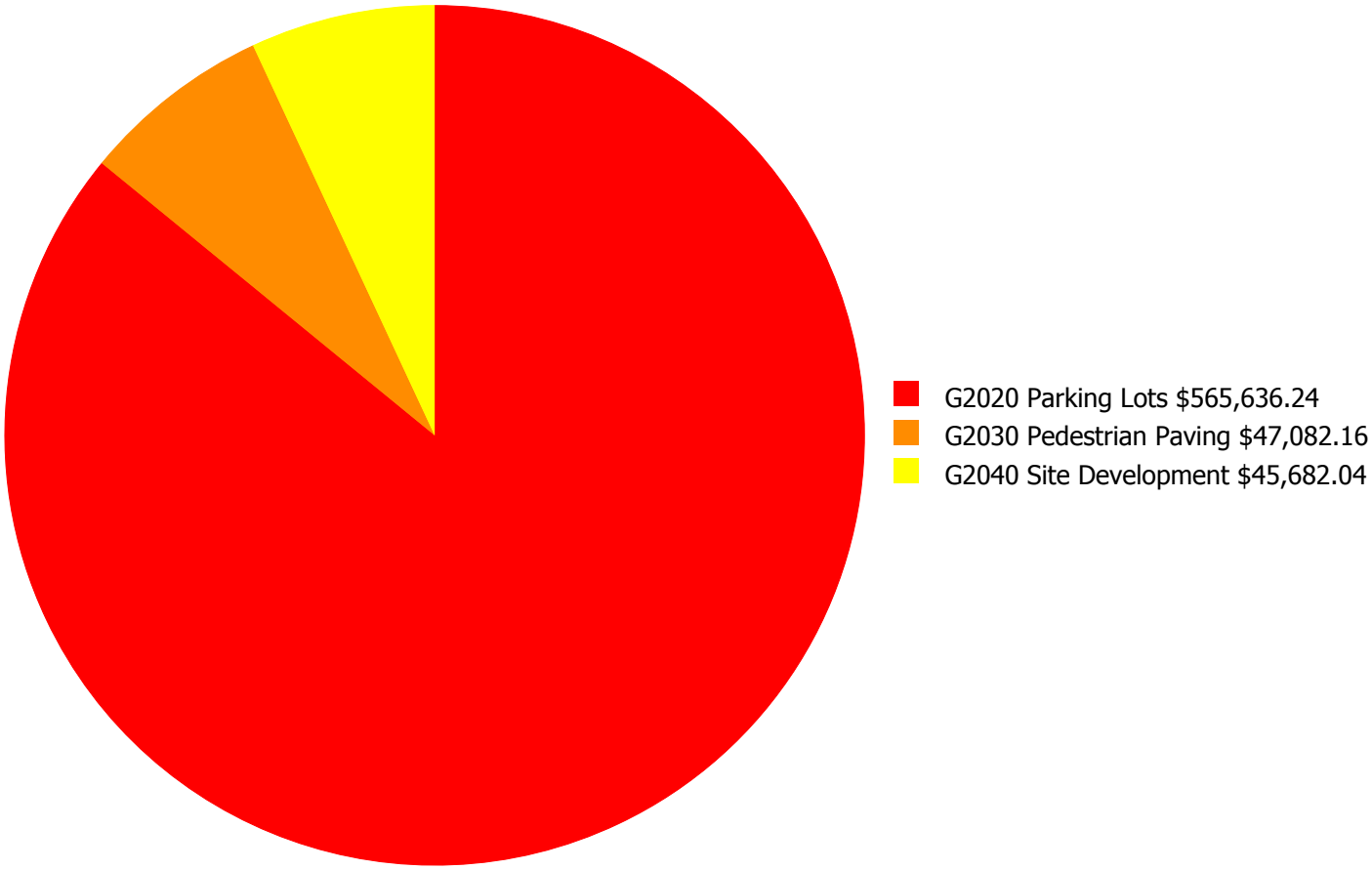
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 37.56%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$36,108.00	35.56 %	$72,216.00	33.56 %
2017	$140,162	$37,191.00	41.10 %	$74,382.00	37.10 %
2018	$0	$38,307.00	39.10 %	$76,614.00	33.10 %
2019	$0	$39,456.00	37.10 %	$78,912.00	29.10 %
2020	$1,416,552	$40,640.00	104.81 %	$81,279.00	94.81 %
2021	$0	$41,859.00	102.81 %	$83,718.00	90.81 %
2022	$705,999	$43,115.00	133.56 %	$86,229.00	119.56 %
2023	$0	$44,408.00	131.56 %	$88,816.00	115.56 %
2024	$0	$45,740.00	129.56 %	$91,481.00	111.56 %
2025	$0	$47,113.00	127.56 %	$94,225.00	107.56 %
Total:	**$2,262,713**	**$413,937.00**		**$827,872.00**	

Deficiency Summary by System

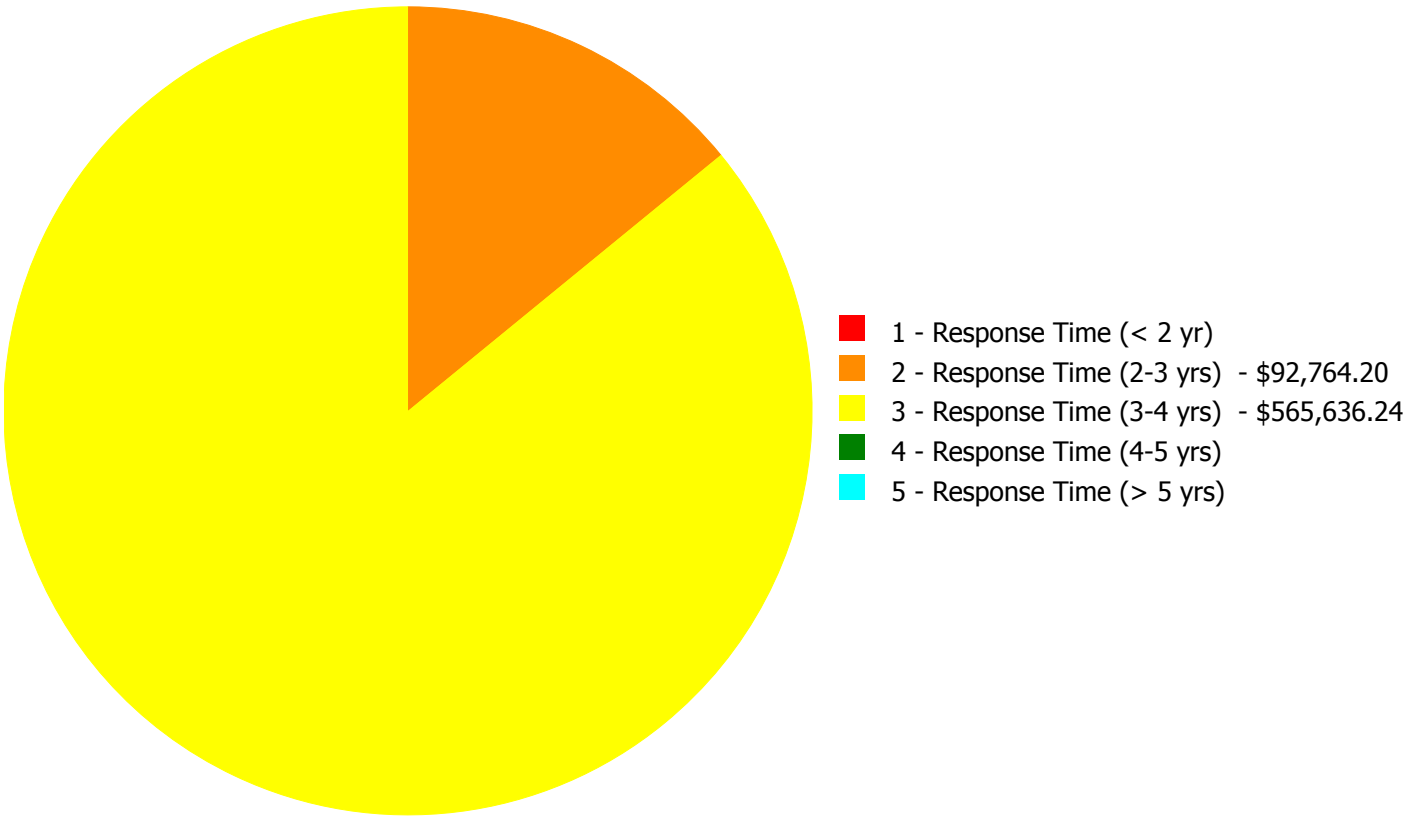
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $658,400.44

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: $658,400.44

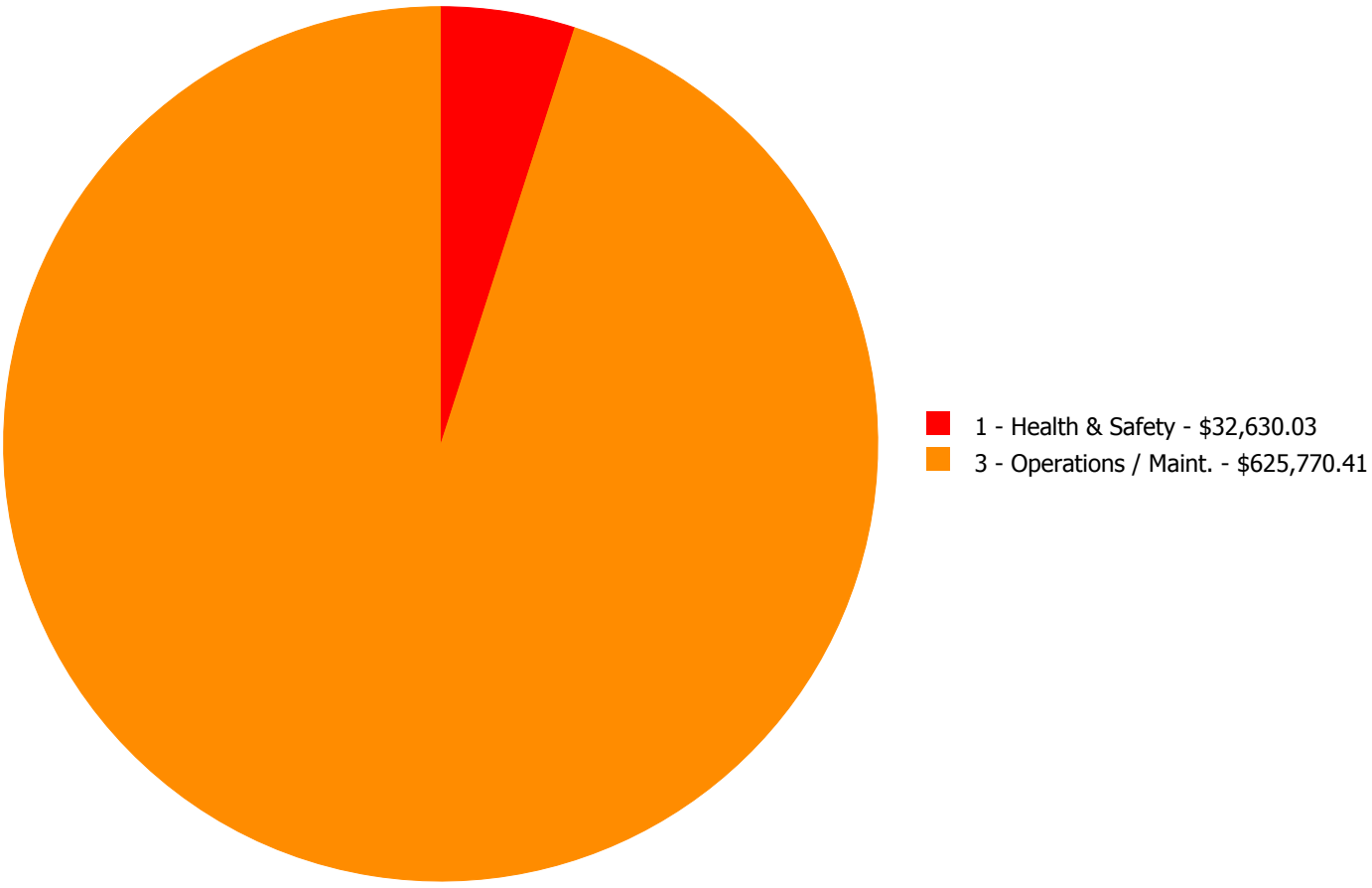
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2020	Parking Lots	$0.00	$0.00	$565,636.24	$0.00	$0.00	$565,636.24
G2030	Pedestrian Paving	$0.00	$47,082.16	$0.00	$0.00	$0.00	$47,082.16
G2040	Site Development	$0.00	$45,682.04	$0.00	$0.00	$0.00	$45,682.04
	Total:	$0.00	$92,764.20	$565,636.24	$0.00	$0.00	$658,400.44

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: $658,400.44

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: dumpster area - Oakland St.

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace concrete paving - pedestrian or parking - 8" concrete thickness

Qty: 1,200.00

Unit of Measure: S.F.

Estimate: $31,528.27

Assessor Name: Steven Litman

Date Created: 02/25/2016

Notes: Repave dumpster slab and access slab to dumpster area with vehicle-grade concrete (1200sf)

System: G2030 - Pedestrian Paving

Location: sidewalks

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 1,000.00

Unit of Measure: S.F.

Estimate: $14,382.85

Assessor Name: Steven Litman

Date Created: 02/25/2016

Notes: Repave damaged sections of concrete walkway along street (1000sf)

System: G2030 - Pedestrian Paving

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: 72.00

Unit of Measure: L.F.

Estimate: $1,171.04

Assessor Name: Steven Litman

Date Created: 02/25/2016

Notes: Regrout joints between limestone block tread/risers at misc. exterior stairs (6 treads, 12ft long)

System: G2040 - Site Development

Location: site fence

Distress: Security Issue

Category: 1 - Health & Safety

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

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

Qty: 500.00

Unit of Measure: L.F.

Estimate: $32,630.03

Assessor Name: Craig Anding

Date Created: 02/25/2016

Notes: Repaint rusted sections of chain link fence along Oxford Avenue (500ft)

System: G2040 - Site Development

Location: roof and ground fencing

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 200.00

Unit of Measure: L.F.

Estimate: $13,052.01

Assessor Name: Steven Litman

Date Created: 02/25/2016

Notes: Repaint rusted wrought iron fence surrounding site and along edge of one story roof over gymnasium and at Element 2 on Oakland Street (200ft length)

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

System: G2020 - Parking Lots

Location: parking lots around building

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace AC paving parking lot

Qty: 40,000.00

Unit of Measure: S.F.

Estimate: $565,636.24

Assessor Name: Steven Litman

Date Created: 02/25/2016

Notes: Repave asphalt parking areas accessed from Oxford Avenue, Oakland Street and Harrison Street (40,000sf)

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