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.

One Bright Ray (Bartram Business) School

Governance	CONTRACTED	Report Type	High
Address	6404 Elmwood Ave. Philadelphia, Pa 19142	Enrollment Grade Range	'09-12'
Phone/Fax	215-744-6000 / 215-488-1178	Admissions Category	ALTERNATIVE
Website	www.onebrightraycommunity.org/	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	**24.33%**	**$971,883**	**$3,995,140**
Building	23.10 %	$875,545	$3,789,538
Grounds	46.86 %	$96,338	$205,602

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	89.03 %	$307,864	$345,806
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.00 %	$0	$280,855
Windows (Shows functionality of exterior windows)	15.53 %	$19,047	$122,615
Exterior Doors (Shows condition of exterior doors)	152.57 %	$22,921	$15,023
Interior Doors (Classroom doors)	32.91 %	$11,131	$33,825
Interior Walls (Paint and Finishes)	00.00 %	$0	$176,951
Plumbing Fixtures	00.48 %	$1,371	$284,094
Boilers	00.00 %	$0	$0
Chillers/Cooling Towers	00.00 %	$0	$0
Radiators/Unit Ventilators/HVAC	00.00 %	$0	$386,738
Heating/Cooling Controls	00.00 %	$0	$121,446
Electrical Service and Distribution	00.00 %	$0	$87,261
Lighting	00.00 %	$0	$311,981
Communications and Security (Cameras, Pa System and Fire Alarm)	94.66 %	$110,617	$116,858

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

S852001;Bartram Business

Final

Site Assessment Report

February 1, 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):	8,996
Year Built:	1967
Last Renovation:	
Replacement Value:	$3,995,140
Repair Cost:	$971,883.40
Total FCI:	24.33 %
Total RSLI:	69.17 %

Description:

Facility Assessment

December 2015

School District of Philadelphia

Bartram Business, housing One Bright Day Community High School

6404 Elmwood Avenue

Philadelphia, PA 19142

8996 SF / 25 Students / LN 01

The Bartram Business building is located at 5900 Baltimore Avenue in Philadelphia, PA. The 1 story, 8,996 square foot building was originally constructed in 1967. It appears that the south end of the building is an addition of unknown vintage. The building does not have a basement.

The building is occupied by One Bright Day Community High School, an accelerated high school designed to get students back on track and successfully attain a high school diploma. Dropouts or currently enrolled overage students, between the ages of 16 to 21, will earn high school credits over a two and half year period. This program moved into the building the summer of 2015.

The school plan is rectangular with long axis in the northwest to southeast direction. The building sits close to the street, with parking in the rear. The front portion of the building houses a general office, a server room, toilet rooms and a storage/mechanical room. The large central portion of the building has been divided. Four classrooms and offices are constructed along out walls. The middle of the building has office cubicles and an open area used as a cafeteria. The addition houses electrical, janitor, storage, kitchen, and toilet rooms.

Mr. Gonzales and Mr. Scott provided input to the Parsons assessment team on current problems in the building. Mr.Gonzales accompanied the team on its tour of the school and provided information on building systems and recent maintenance history.

STRUCTURAL / EXTERIOR CLOSURE

Foundations are presumed to be standard concrete and visible areas are in good condition with no evidence of settlement or cracking. There are ramps from the front entry level to the main classroom level, and from the main classroom level to the side exit. There are steps from the main classroom level to the addition. The building frame is steel with no apparent damage. Roof decking is wood. Exterior walls are brick on CMU at the original building and CMU at the addition. The northeast elevation has been stuccoed. Exterior walls are protected with metal cap flashing. A decorative aggregate panel cornice, also painted, is constructed at the entry facade. Awnings with fabric over metal frames accent the main entrance and side exit. Exterior windows are original aluminum frame with fixed and operable single pane acrylic glazing. Windows are in poor condition with hazed glazing. Several window openings have been filled in. Exterior doors are painted hollow metal in hollow metal frames with glazing and are believed to have been replaced once in the lifetime of the building. Doors are in generally fair condition. No exterior doors have handicap operators. Ramps immediately inside exterior doors do not have landings at the doors. Roofing is low sloped with a built-up membrane and a reflective coating on the cap sheet. There are some reported and apparent leaks. The roof is in poor condition and should be replaced. Poor roof conditions include bubbling in the cap sheet, splitting, and apparent ponding areas. Roof drainage is via interior piped roof drains. There are no overflow drains. Roof access is via portable ladder.

Interior partitions include CMU and gypsum wallboard on metal studs. Interior partitions are in good condition no observed deficiencies. Interior doors are typically solid core wood in hollow metal frames. Classroom doors have glazing. Doors are generally in good condition and are not ADA compliant. Doors swing in the direction of exit and are not recessed. Fittings include: chalkboards and whiteboards, tack boards; interior signage; metal lockers that are rust, have some denting and broken hardware; toilet accessories and metal toilet partitions that have been painted. Toilet partitions are in poor condition despite the paint.

Steps from the main floor to the addition (two risers at each of two locations) have resilient treads and nosings in good condition.

Interior wall finishes are paint. Wall finishes are generally in very good condition. Interior floor finishes are typically VCT. VCT is not original to the building. It is well maintained in generally good condition. Other floor finishes include 9” VCT in the electric room, a storage room, and the mechanical room, carpet in the cubicle area, and painted concrete in toilet rooms. Interior ceilings include: 2 x 4 acoustical tile in metal grid in the classrooms, offices, and open spaces in generally good condition with some stained/damaged/missing tile at roof leaks; painted gyp board in the front toilet rooms in good condition; and 12” glued-on acoustical tile in the addition area, in poor condition.

Institutional equipment is not present in this building. Other equipment includes kitchen equipment in good condition.

Furnishings include fixed casework at the kitchen in fair to good condition.

MECHANICAL

Toilet room fixtures are a mixture of original and replacements including 6 lavatories, 9 water closets, and 4 urinals. Flush valves are exposed, and 3 water closets at the front of the building are tank type. Two flush valves work poorly and should be replaced. The kitchen has a 3 basin commercial sink without disposal, chemical injector, or grease trap, and a lavatory. A cast iron with stainless steel rim service sink is located in the janitor closet at the back of the building with a vacuum breaker wall mounted faucet. Drinking fountains are wall hung stainless steel accessible units. Generally plumbing fixtures are in good condition and will not need replacement for 15 years.

Water enters the building in a store room at the front of the building through a 2 inch connection. There is a water meter but no backflow preventer. A backflow preventer should be installed. Water distribution pipe is copper, and it is badly corroded at the

entry. There was wetness on the pipes in the meter room, likely due to failing solder joints. School faculty members were advised to report the leakage to the district immediately. Other areas of the domestic water piping have been repaired in the past. The entire domestic water distribution pipe system should be inspected and repaired (if the district has not done so already). Water is heated by a Bradford White 40 gallon natural gas water heater manufactured in 2014. It has a Taco model 007-SF5 1/25 HP circulation pump, but no thermal expansion tank. There is no domestic water pressure booster.

Sanitary drain pipes are both threaded galvanized steel and hub and spigot cast iron. They are likely original to the building and have been repaired previously in multiple areas. There is a patch on the kitchen vent stack pipe, yet it leaks elsewhere. The sanitary drain pipes should be inspected in detail and repaired as needed. There is no sewage ejector.

Rooftop rain water drains have cast iron strainers. There are no overflow drains. There was standing water on the roof at the southwest corner of the building due to a clogged drain, likely due to a buildup of leaves and dirt. Cast iron hub and spigot drain pipes run inside the building. Based on age of the building (and condition of other pipe systems), rain water drain pipes should be inspected and repaired or replaced as needed. There no ground water sumps.

The building is heated, cooled, and ventilated by forced air from a single packaged roof top unit.

The building has no heat generating system equipment. Gas service enters the storage room (beside the water heater) at the front of the building in a 1½ inch line with meter.

The building has no cooling generating system equipment.

A Carrier model 48TMF025---511AA single-package rooftop unit with electric cooling and gas heating provides 20 tons of cooling and 360 MBH. It used R-22 refrigerant, was manufactured in 2007, and should be serviceable for 10-15 more years. Conditioned air is supplied through ducts leading to ceiling mounted diffusers and returns through wall grilles to a plenum behind the toilet rooms. The kitchen has no fuel burning appliances (only an electric convection oven) and does not have a fume extraction system. Three roof top exhaust fans ventilate the toilet rooms and kitchen area.

The lobby is heated by a wall mounted Nesbitt electric fan coil unit. Toilet rooms have wall mounted electric convection heaters. These units appear original but are in fair condition and should last 10 more years. The teachers' lounge has a Sanyo 1.5 ton ductless split system air conditioner manufactured in 2007 with condenser located on the roof.

There is a wall mounted thermostat for the Carrier unit and a wireless remote control for the Sanyo minisplit air conditioner.

The building does not have sprinklers or stand pipes. A fire protection sprinkler system should be installed.

ELECTRICAL SYSTEMS

Most probably an underground lateral service from a pole mounted transformer on Dickens Street serves this school. The electrical room is located in the first floor. The electrical room houses the utility main disconnect switch, utility metering PECO 01019253041 and 400A 120/240V, three phase, four wires distribution section. The existing service is approximately 20 years old and is expected to provide 10 more years of useful service life.

The electrical distribution is accomplished with 120/240V panel-boards in the electrical room. Panelboards serves lighting, receptacles and HVAC loads. Panelboards are approximately 20 years old and are expected to provide 10 more years of useful service life. This facility has been remodeled in the last 5 years. The number of receptacles in the classrooms are adequate. There are approximately 2 receptacle outlets per classroom walls.

This facility has been remodeled in the last 5 years. Classrooms, offices and the reception area are illuminated with 2'x4' recessed fluorescent lighting fixtures, the electrical room, restrooms, and the corridor are illuminated with surface mounted fluorescent lighting fixtures. Fluorescent fixtures are provided with T-8 fluorescent lamps. Fixtures were installed 5 years ago and are expected to provide 15 more years of useful service life. The Fire Alarm control panel manufactured by S.H. Couch Co Inc. The system is approximately 30 years old. The present Fire Alarm system does not meet current code and needs to be replaced.

The classrooms, offices and reception are provided with telephone/data outlets for desk mounted handset. During the assessment, we did not verified that each handset is provided with dial tone, but there were no indication that the system is not properly working. An independent and separate PA system does not exist. School uses the telephone systems for public announcement. We assessed this facility after school hours, we did not verify that the system is working properly, and neither there was an indication otherwise. This facility does not have a clock/change class system. Provide clock system wireless, synchronized, battery operated system and will

interface with the telephone system for "bell" schedule. There is not television system. This facility is not provided with security system. Provide surveillance CCTV cameras for complete coverage of the interior of the school.

This facility is not provided with emergency power system. A wall mounted cabinet houses the IT equipment. We did not open the cabinet to verify the quantity/size of the UPS. School district standard is to provide adequate UPS to the IT equipment. The emergency lighting is obtained with wall mounted lighting fixtures with battery backup in each classroom, open areas, corridor and exit ways. Exit signs are located at each exit door. This facility is not provided with lightning protection system. A study should be conducted to determine if the school building requires lightning protection system.

The school building perimeter is illuminated with wall mounted fixtures providing total perimeter coverage. The parking lot is poorly illuminated. Provide pole mounted lighting fixtures to illuminate the parking lot. This facility does not have outdoor surveillance CCTV cameras. Provide outdoor surveillance CCTV cameras for a safer environment.

GROUNDS SYSTEMS

The parking lot is asphalt in fair condition with some cracking with vegetation in the cracks. The parking lot is striped and parking bumper curbs are installed. There is no signage and no designated accessible spaces with an accessible route to the building. Pedestrian pavement is concrete at the public street and at the service entrance between the building and the parking lot. It is in fair condition and is maintained to minimize trip hazards with several replacement slabs noted. Fencing surrounding the parking lot adjacent to residential properties is chain link in good condition. There is a low chain link fence dividing the parking lot and the rear building entrance, and a low fence with a gate at the vehicular entrance, all in good condition. A retaining wall is located at the far end of the parking lot with a significant drop to Dickens Avenue. A chain link fence provides fall protection for people, but is not sufficient to stop a vehicle from going over the edge. Landscaping consists of one new shrub at the northwest corner of the building and one mature tree in the parking lot. A small strip of volunteer vegetation occurs at the bottom of the retaining wall parallel to Dickens Ave.

RECOMMENDATIONS

- Replace windows
- Install a handicap door operator at one entrance
- Replace all roofs, flashing, etc.
- Install a roof access hatch and fixed ladder
- Provide lever locksets at interior doors
- Provide white marker boards in classrooms with chalkboards
- Replace lockers
- Replace toilet partitions. Reconfigure two toilet rooms at the front of the building for accessibility
- Replace damaged or missing 2 x 4 acoustical tile and repair grid as needed.
- Replace 12" glued-on acoustical tile
- Replace 9" VAT with 12" VCT
- Crack seal parking lots
- Provide a landing at the rear service door

MECHANICAL

- Replace failing flush valves, 2
- Install backflow preventer, 2"
- Inspect and repair domestic water distribution pipes due to severe corrosion and leaks
- Inspect and repair sanitary drain pipes due to age and existing patches and leaks
- Inspect and repair rain water drain pipes due to age and ponding on roof
- Install fire protection sprinkler system

ELECTRICAL

- Replace old fire alarm system with addressable type with audio/visual devices at corridors and classrooms. Approximate 20 devices
- Replace clock system with wireless, synchronized, battery operated, clock system. Approximate 10 clocks.
- Provide indoor surveillance CCTV cameras for complete coverage of the school building interior. Approximate 6
- Prepare a study to determine if the school building requires lightning protection system.
- Provide pole mounted lighting fixtures to illuminate the parking lot. Approximate 2
- Provide outdoor surveillance CCTV cameras to the building exterior for full coverage of the perimeter. Approximate 4 CCTV

cameras.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 3
Status:	Accepted by SDP	Team:	Tm 3
Site ID:	S852001		

Site Condition Summary

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

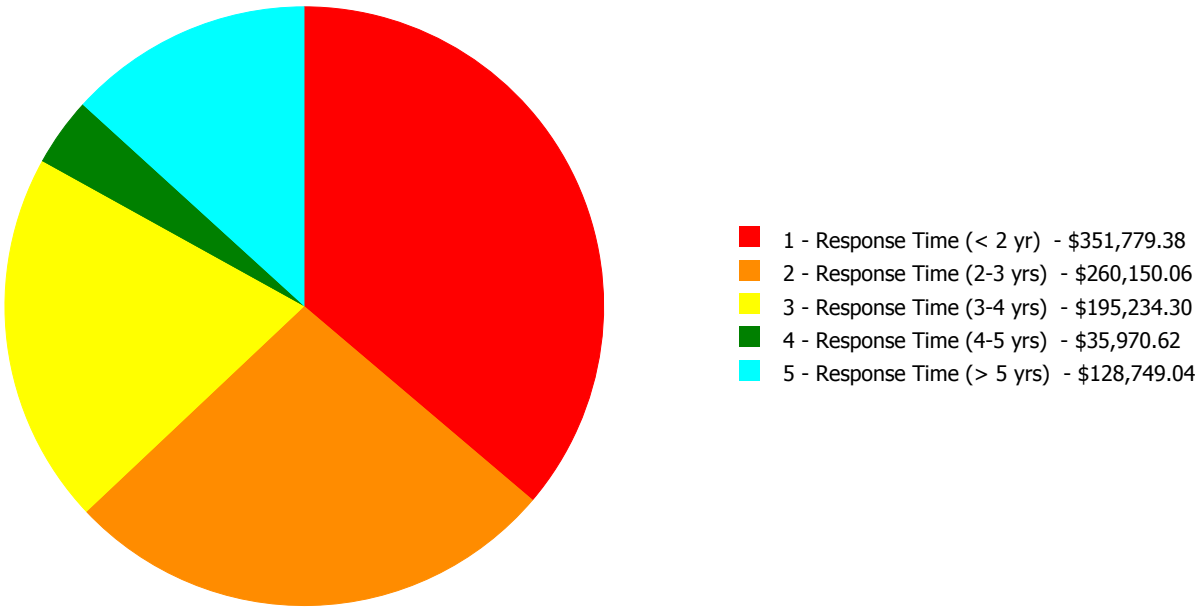
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	52.00 %	0.00 %	$0.00
B10 - Superstructure	52.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	48.30 %	10.03 %	$41,968.15
B30 - Roofing	110.00 %	89.03 %	$307,863.62
C10 - Interior Construction	90.60 %	52.96 %	$108,667.67
C30 - Interior Finishes	73.59 %	4.39 %	$19,490.64
D20 - Plumbing	54.61 %	36.61 %	$133,939.36
D30 - HVAC	69.31 %	0.00 %	$0.00
D40 - Fire Protection	105.71 %	158.84 %	$128,749.04
D50 - Electrical	76.80 %	25.51 %	$134,866.72
E10 - Equipment	100.00 %	0.00 %	$0.00
E20 - Furnishings	62.50 %	0.00 %	$0.00
G20 - Site Improvements	44.70 %	14.41 %	$20,673.90
G40 - Site Electrical Utilities	45.58 %	121.71 %	$75,664.30
Totals:	**69.17 %**	**24.33 %**	**$971,883.40**

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)
B852001;Bartram Business	8,996	23.10	$351,779.38	$260,150.06	$98,896.10	$35,970.62	$128,749.04
G852001;Grounds	10,700	46.86	$0.00	$0.00	$96,338.20	$0.00	$0.00
Total:		**24.33**	**$351,779.38**	**$260,150.06**	**$195,234.30**	**$35,970.62**	**$128,749.04**

Deficiencies By Priority



Budget Estimate Total: $971,883.40

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):	8,996
Year Built:	1967
Last Renovation:	
Replacement Value:	$3,789,538
Repair Cost:	$875,545.20
Total FCI:	23.10 %
Total RSLI:	70.48 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B852001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S852001		

Condition Summary

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

UNIFORMAT Classification	RSLI %	FCI %	Current Repair Cost
A10 - Foundations	52.00 %	0.00 %	$0.00
B10 - Superstructure	52.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	48.30 %	10.03 %	$41,968.15
B30 - Roofing	110.00 %	89.03 %	$307,863.62
C10 - Interior Construction	90.60 %	52.96 %	$108,667.67
C30 - Interior Finishes	73.59 %	4.39 %	$19,490.64
D20 - Plumbing	54.61 %	36.61 %	$133,939.36
D30 - HVAC	69.31 %	0.00 %	$0.00
D40 - Fire Protection	105.71 %	158.84 %	$128,749.04
D50 - Electrical	76.80 %	25.51 %	$134,866.72
E10 - Equipment	100.00 %	0.00 %	$0.00
E20 - Furnishings	62.50 %	0.00 %	$0.00
Totals:	**70.48 %**	**23.10 %**	**$875,545.20**

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	$30.65	S.F.	8,996	100	1967	2067		52.00 %	0.00 %	52			$275,727
A1030	Slab on Grade	$19.56	S.F.	8,996	100	1967	2067		52.00 %	0.00 %	52			$175,962
B1020	Roof Construction	$24.11	S.F.	8,996	100	1967	2067		52.00 %	0.00 %	52			$216,894
B2010	Exterior Walls	$31.22	S.F.	8,996	100	1967	2067		52.00 %	0.00 %	52			$280,855
B2020	Exterior Windows	$13.63	S.F.	8,996	40	1967	2007	2028	32.50 %	15.53 %	13		$19,047.43	$122,615
B2030	Exterior Doors	$1.67	S.F.	8,996	25	1967	1992	2042	108.00 %	152.57 %	27		$22,920.72	$15,023
B3010105	Built-Up	$37.76	S.F.	8,996	20	1995	2015	2037	110.00 %	89.73 %	22		$304,802.56	$339,689
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	$0.68	S.F.	8,996	20	1967	1987	2037	110.00 %	50.04 %	22		$3,061.06	$6,117
C1010	Partitions	$14.93	S.F.	8,996	100	2015	2115		100.00 %	0.00 %	100			$134,310
C1020	Interior Doors	$3.76	S.F.	8,996	40	1990	2030		37.50 %	32.91 %	15		$11,131.39	$33,825
C1030	Fittings	$4.12	S.F.	8,996	40	1967	2007	2057	105.00 %	263.16 %	42		$97,536.28	$37,064
C3010230	Paint & Covering	$19.67	S.F.	8,996	10	2015	2025		100.00 %	0.00 %	10			$176,951
C3010231	Vinyl Wall Covering	$0.00	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$0.00	S.F.		30				0.00 %	0.00 %				$0
C3020411	Carpet	$7.30	S.F.	270	10	2015	2025		100.00 %	0.00 %	10			$1,971

Site Assessment Report - B852001;Bartram Business

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 $
C3020412	Terrazzo & Tile	$75.52	S.F.		50				0.00 %	0.00 %				$0
C3020413	Vinyl Flooring	$9.68	S.F.	7,826	20	2000	2020	2028	65.00 %	6.01 %	13		$4,550.00	$75,756
C3020414	Wood Flooring	$22.27	S.F.		25				0.00 %	0.00 %				$0
C3020415	Concrete Floor Finishes	$0.97	S.F.	900	50	2000	2050		70.00 %	0.00 %	35			$873
C3030	Ceiling Finishes	$20.97	S.F.	8,996	25	2000	2025	2028	52.00 %	7.92 %	13		$14,940.64	$188,646
D2010	Plumbing Fixtures	$31.58	S.F.	8,996	35	1967	2002	2030	42.86 %	0.48 %	15		$1,370.62	$284,094
D2020	Domestic Water Distribution	$2.90	S.F.	8,996	25	1967	1992	2042	108.00 %	185.94 %	27		$48,507.12	$26,088
D2030	Sanitary Waste	$2.90	S.F.	8,996	25	1967	1992	2042	108.00 %	169.24 %	27		$44,151.75	$26,088
D2040	Rain Water Drainage	$3.29	S.F.	8,996	30	1967	1997	2037	73.33 %	134.84 %	22		$39,909.87	$29,597
D3020	Heat Generating Systems	$18.67	S.F.		35				0.00 %	0.00 %				$0
D3030	Cooling Generating Systems	$24.48	S.F.		30				0.00 %	0.00 %				$0
D3040	Distribution Systems	$42.99	S.F.	8,996	25	2007	2032		68.00 %	0.00 %	17			$386,738
D3050	Terminal & Package Units	$11.60	S.F.	8,996	20	1967	1987	2032	85.00 %	0.00 %	17			$104,354
D3060	Controls & Instrumentation	$13.50	S.F.	8,996	20	2007	2027		60.00 %	0.00 %	12			$121,446
D4010	Sprinklers	$8.02	S.F.	8,996	35			2052	105.71 %	178.45 %	37		$128,749.04	$72,148
D4020	Standpipes	$0.99	S.F.	8,996	35			2052	105.71 %	0.00 %	37			$8,906
D5010	Electrical Service/Distribution	$9.70	S.F.	8,996	30	1995	2025		33.33 %	0.00 %	10			$87,261
D5020	Lighting and Branch Wiring	$34.68	S.F.	8,996	20	2010	2030		75.00 %	0.00 %	15			$311,981
D5030	Communications and Security	$12.99	S.F.	8,996	15	1967	1982	2032	113.33 %	94.66 %	17		$110,616.90	$116,858
D5090	Other Electrical Systems	$1.41	S.F.	8,996	30	2010	2040		83.33 %	191.18 %	25		$24,249.82	$12,684
E1020	Institutional Equipment	$4.82	S.F.		35				0.00 %	0.00 %				$0
E1090	Other Equipment	$11.10	S.F.	8,996	35	2015	2050		100.00 %	0.00 %	35			$99,856
E2010	Fixed Furnishings	$2.13	S.F.	8,996	40	2000	2040		62.50 %	0.00 %	25			$19,161
								Total	**70.48 %**	**23.10 %**			**$875,545.20**	**$3,789,538**

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: C30 - Interior Finishes — This system contains no images

Note: Paint 100%

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

Note: Carpet 3%

Vinyl 87%

Concrete 10%

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:	**$875,545**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$393,500**	**$1,269,045**
*** A - Substructure**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
*** A10 - Foundations**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1010 - Standard Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1030 - Slab on Grade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2020 - Exterior Windows	$19,047	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$19,047**
B2030 - Exterior Doors	$22,921	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$22,921**
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	$304,803	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$304,803**
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	$3,061	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,061**
C - Interiors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C10 - Interior Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1010 - Partitions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1020 - Interior Doors	$11,131	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$11,131**
C1030 - Fittings	$97,536	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$97,536**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

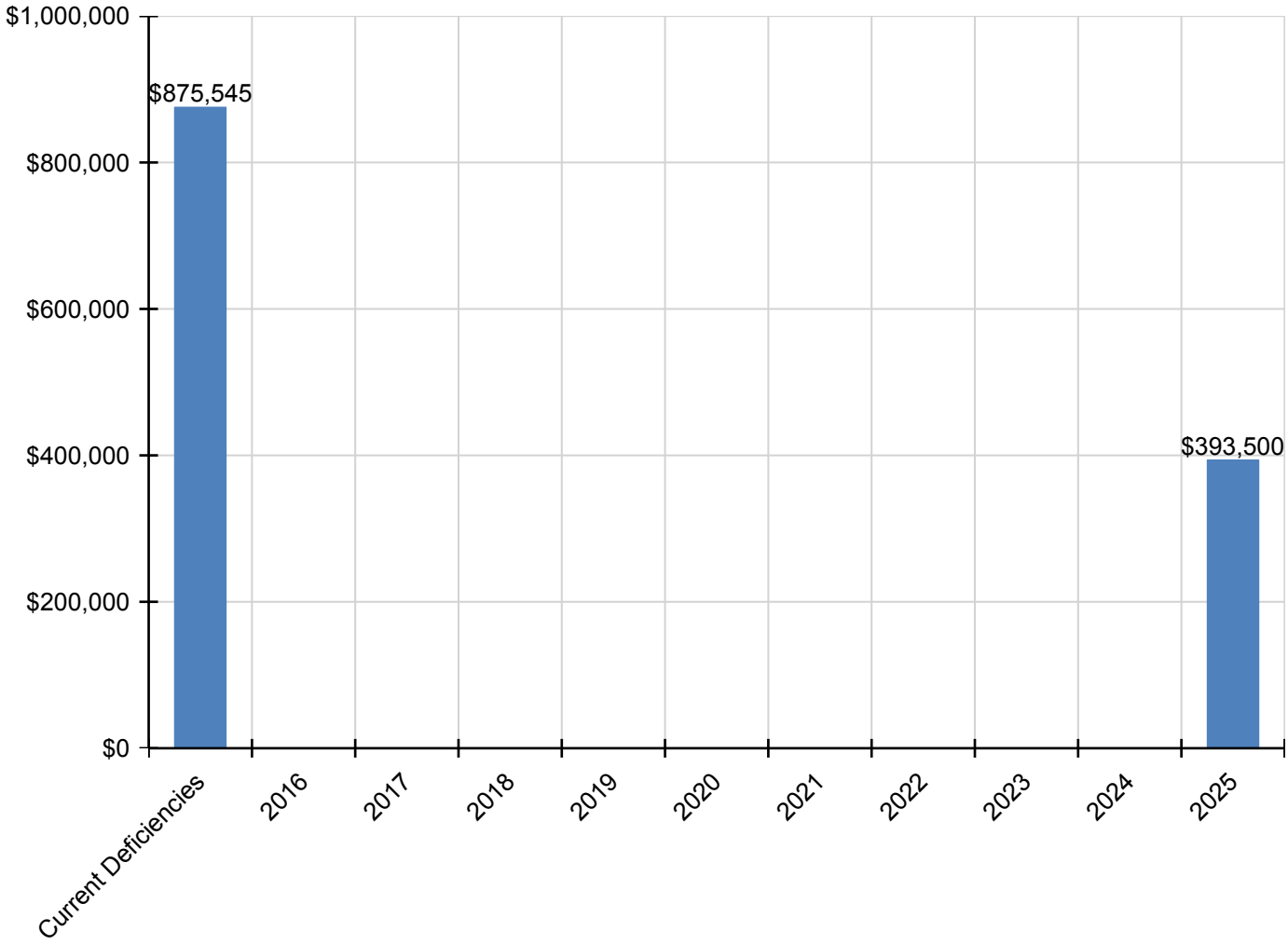
C3010230 - Paint & Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$261,588	**$261,588**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,914	**$2,914**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$4,550	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,550**
C3020414 - Wood Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$14,941	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$14,941**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$1,371	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,371**
D2020 - Domestic Water Distribution	$48,507	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$48,507**
D2030 - Sanitary Waste	$44,152	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$44,152**
D2040 - Rain Water Drainage	$39,910	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$39,910**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3030 - Cooling Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3040 - Distribution Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$128,749	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$128,749**
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	$128,999	**$128,999**
D5020 - Lighting and Branch Wiring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5030 - Communications and Security	$110,617	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$110,617**
D5090 - Other Electrical Systems	$24,250	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$24,250**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

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	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

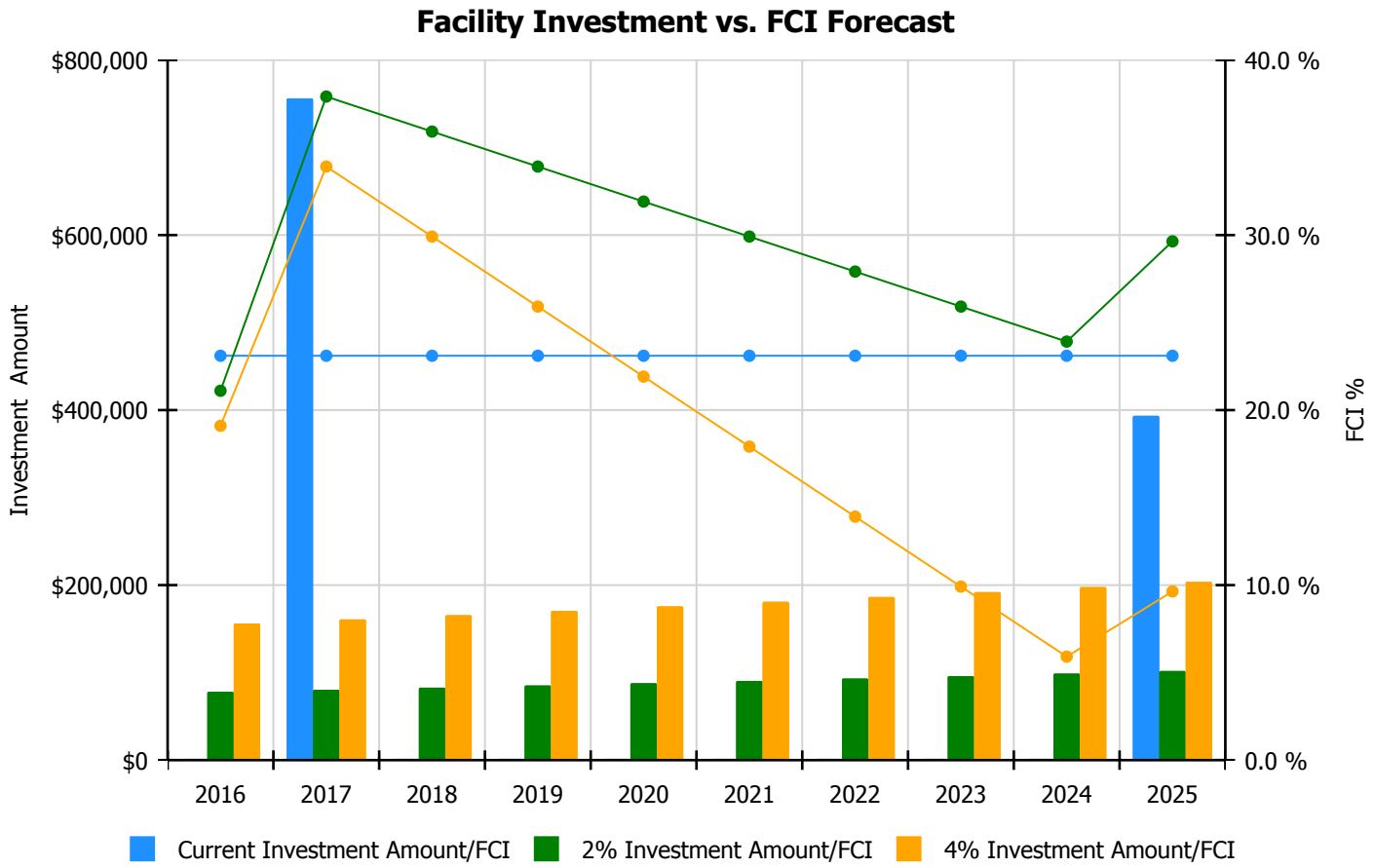
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

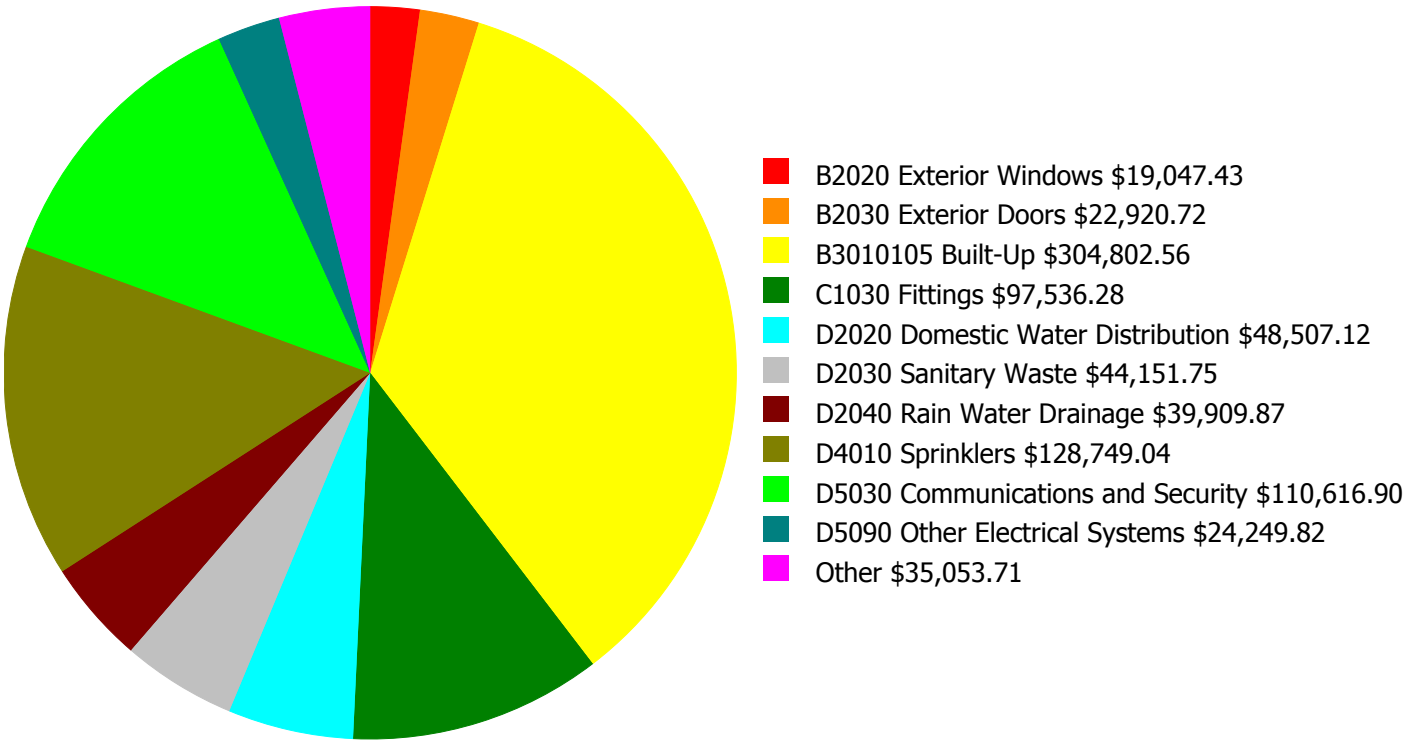
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 23.1%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$78,064.00	21.10 %	$156,129.00	19.10 %
2017	$756,189	$80,406.00	37.91 %	$160,813.00	33.91 %
2018	$0	$82,819.00	35.91 %	$165,637.00	29.91 %
2019	$0	$85,303.00	33.91 %	$170,606.00	25.91 %
2020	$0	$87,862.00	31.91 %	$175,725.00	21.91 %
2021	$0	$90,498.00	29.91 %	$180,996.00	17.91 %
2022	$0	$93,213.00	27.91 %	$186,426.00	13.91 %
2023	$0	$96,009.00	25.91 %	$192,019.00	9.91 %
2024	$0	$98,890.00	23.91 %	$197,780.00	5.91 %
2025	$393,500	$101,856.00	29.64 %	$203,713.00	9.64 %
Total:	**$1,149,689**	**$894,920.00**		**$1,789,844.00**	

Deficiency Summary by System

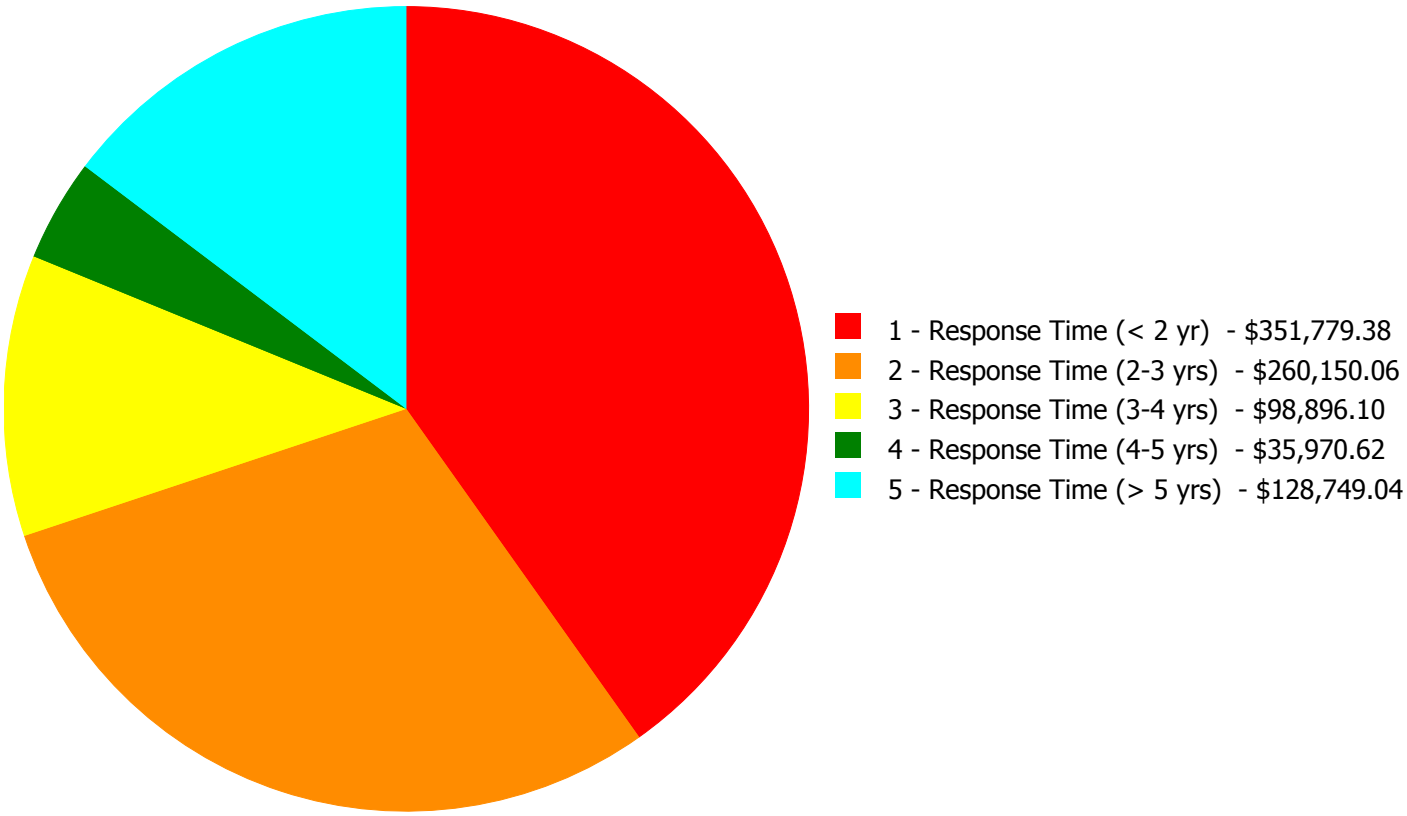
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $875,545.20

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: $875,545.20

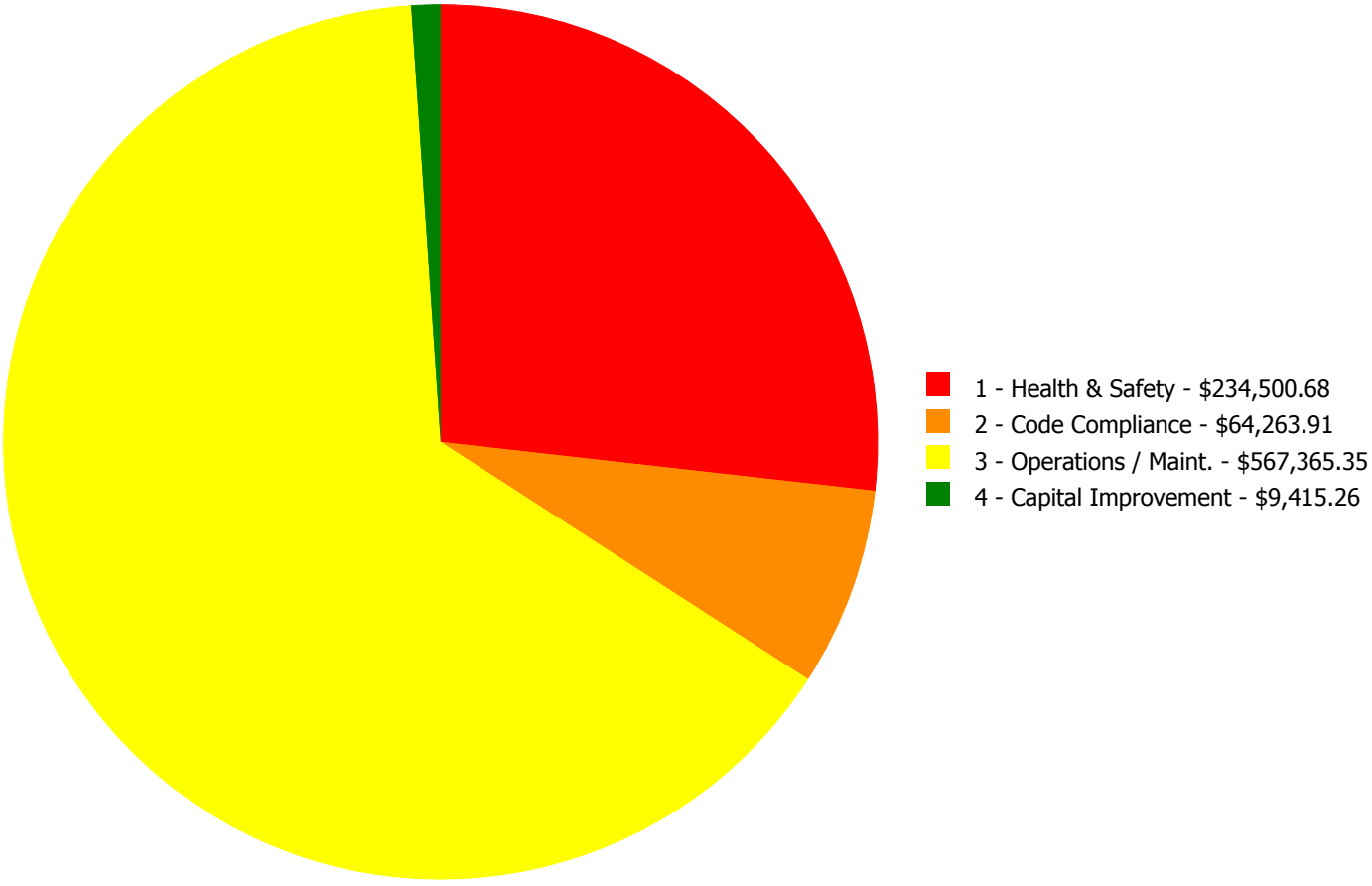
Deficiency By Priority Investment Table

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
B2020	Exterior Windows	$0.00	$19,047.43	$0.00	$0.00	$0.00	$19,047.43
B2030	Exterior Doors	$0.00	$22,920.72	$0.00	$0.00	$0.00	$22,920.72
B3010105	Built-Up	$304,802.56	$0.00	$0.00	$0.00	$0.00	$304,802.56
B3020	Roof Openings	$0.00	$3,061.06	$0.00	$0.00	$0.00	$3,061.06
C1020	Interior Doors	$0.00	$11,131.39	$0.00	$0.00	$0.00	$11,131.39
C1030	Fittings	$0.00	$97,536.28	$0.00	$0.00	$0.00	$97,536.28
C3020413	Vinyl Flooring	$0.00	$4,550.00	$0.00	$0.00	$0.00	$4,550.00
C3030	Ceiling Finishes	$0.00	$14,940.64	$0.00	$0.00	$0.00	$14,940.64
D2010	Plumbing Fixtures	$1,370.62	$0.00	$0.00	$0.00	$0.00	$1,370.62
D2020	Domestic Water Distribution	$45,606.20	$2,900.92	$0.00	$0.00	$0.00	$48,507.12
D2030	Sanitary Waste	$0.00	$44,151.75	$0.00	$0.00	$0.00	$44,151.75
D2040	Rain Water Drainage	$0.00	$39,909.87	$0.00	$0.00	$0.00	$39,909.87
D4010	Sprinklers	$0.00	$0.00	$0.00	$0.00	$128,749.04	$128,749.04
D5030	Communications and Security	$0.00	$0.00	$74,646.28	$35,970.62	$0.00	$110,616.90
D5090	Other Electrical Systems	$0.00	$0.00	$24,249.82	$0.00	$0.00	$24,249.82
	Total:	$351,779.38	$260,150.06	$98,896.10	$35,970.62	$128,749.04	$875,545.20

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: $875,545.20

Deficiency Details by Priority

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

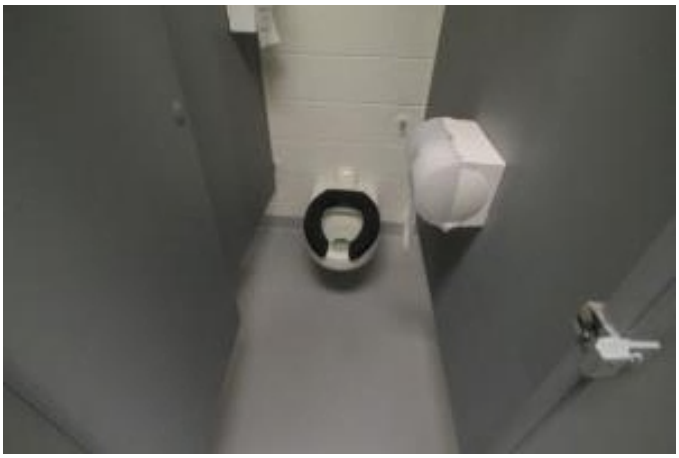
Priority 1 - Response Time (< 2 yr):

System: B3010105 - Built-Up

Location: Roofs
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Remove and Replace Built Up Roof
Qty: 8,996.00
Unit of Measure: S.F.
Estimate: $304,802.56
Assessor Name: Craig Anding
Date Created: 01/29/2016

Notes: Replace leaking roof.

System: D2010 - Plumbing Fixtures



Location: Toilet rooms
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Replace flush valves (enter qty of WC or Urinals in estimate)
Qty: 2.00
Unit of Measure: Ea.
Estimate: $1,370.62
Assessor Name: Craig Anding
Date Created: 02/21/2016

Notes: Replace failing flush valves

System: D2020 - Domestic Water Distribution

Location: Entire building

Distress: Failing

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace domestic water piping (75 KSF)

Qty: 9,000.00

Unit of Measure: S.F.

Estimate: $45,606.20

Assessor Name: Craig Anding

Date Created: 02/21/2016

Notes: Inspect and repair domestic water distribution pipes due to severe corrosion and leaks

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

System: B2020 - Exterior Windows

Location: Southwest wall

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 3.00

Unit of Measure: Ea.

Estimate: $19,047.43

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Replace expired windows.

System: B2030 - Exterior Doors

Location: Exterior entrance

Distress: Accessibility

Category: 2 - Code Compliance

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $22,920.72

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Provide a handicap door operator at one exterior door on the main level.

System: B3020 - Roof Openings

Location: TBD

Distress: OSHA

Category: 2 - Code Compliance

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

Correction: Replace roof hatch - pick the closest size

Qty: 1.00

Unit of Measure: Ea.

Estimate: $3,061.06

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Install a roof hatch with fixed ladder to facilitate safe access to roof for maintenance of roof and roof mounted mechanical equipment.

System: C1020 - Interior Doors

Location: Interior doors

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Replace door knobs with compliant lever type

Qty: 20.00

Unit of Measure: Ea.

Estimate: $11,131.39

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Provide lever locksets at interior doors.

System: C1030 - Fittings

Location: Storage

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace lockers - select size

Qty: 106.00

Unit of Measure: Ea.

Estimate: $69,393.24

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Replace student lockers that are rusted, dented, and have broken hardware.

System: C1030 - Fittings

Location: Toilet rooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace damaged toilet paritions - handicap units

Qty: 8.00

Unit of Measure: Ea.

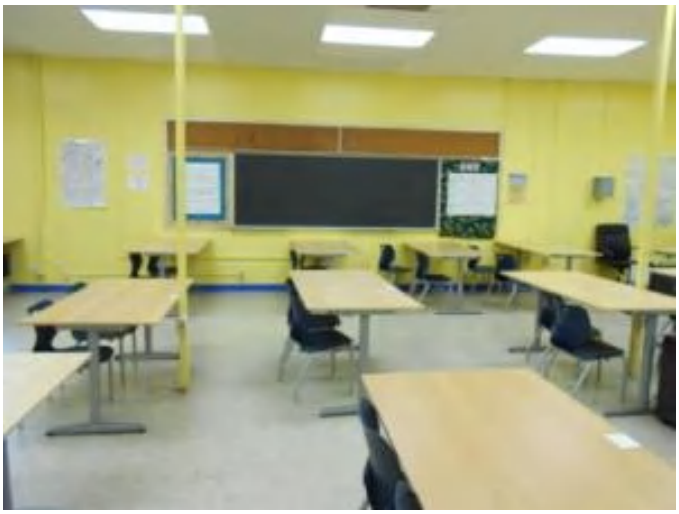
Estimate: $21,806.42

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Replace rusty refurbished toilet partitions. Provide accessible partitions at at least one toilet room per sex.

System: C1030 - Fittings



Location: Classrooms

Distress: Obsolete

Category: 3 - Operations / Maint.

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

Correction: Replace blackboards with marker boards - pick the appropriate size and insert the quantities

Qty: 4.00

Unit of Measure: Ea.

Estimate: $6,336.62

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Provide whiteboards in classrooms.

System: C3020413 - Vinyl Flooring

Location: Electric, storage, and mechanical rooms

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

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

Qty: 300.00

Unit of Measure: S.F.

Estimate: $4,550.00

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Remove 9" VAT and replace with 12" VCT

System: C3030 - Ceiling Finishes

Location: Kitchen, back of house areas

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace glued on or mechanically attached acoustical ceiling tiles

Qty: 900.00

Unit of Measure: S.F.

Estimate: $11,230.93

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Replace original 12" glued on acoustic ceiling tile.

System: C3030 - Ceiling Finishes

Location: Various locations around the building

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace ceiling tiles only in suspended ceiling - pick the proper material

Qty: 320.00

Unit of Measure: S.F.

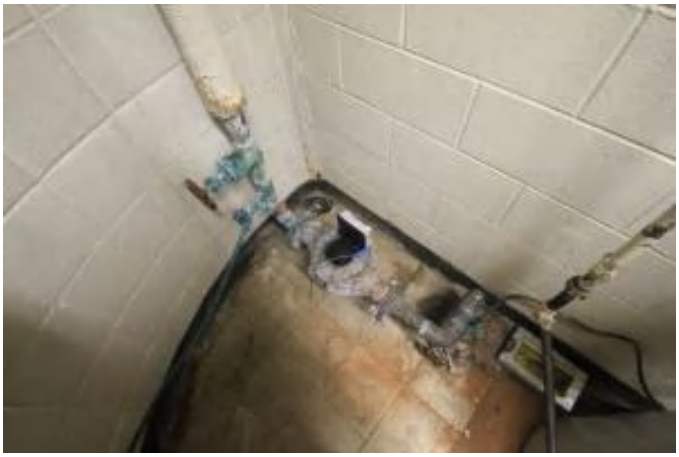
Estimate: $3,709.71

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Replace damaged/missing/stained ceiling tile. Repair grid as needed.

System: D2020 - Domestic Water Distribution



Location: Storage room

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Provide 3" reduced pressure back flow preventer

Qty: 1.00

Unit of Measure: Ea.

Estimate: $2,900.92

Assessor Name: Craig Anding

Date Created: 02/21/2016

Notes: Install backflow preventer, 2"

System: D2030 - Sanitary Waste

Location: Entire building

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 9,000.00

Unit of Measure: S.F.

Estimate: $44,151.75

Assessor Name: Craig Anding

Date Created: 02/21/2016

Notes: Inspect and repair sanitary drain pipes due to age and existing patches and leaks

System: D2040 - Rain Water Drainage

Location: Entire building

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Inspect internal rain water drainage piping and replace pipe - based on SF of multi-story building - insert SF of building

Qty: 9,000.00

Unit of Measure: S.F.

Estimate: $39,909.87

Assessor Name: Craig Anding

Date Created: 02/21/2016

Notes: Inspect and repair rain water drain pipes due to age and ponding on roof

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

System: D5030 - Communications and Security

Location: Entire Building
Distress: Life Safety / NFPA / PFD
Category: 1 - Health & Safety
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace fire alarm system
Qty: 1.00
Unit of Measure: S.F.
Estimate: $74,646.28
Assessor Name: Craig Anding
Date Created: 02/09/2016

Notes: Replace old fire alarm system with addressable type with audio/visual devices at corridors and classrooms. Approximate 20 devices

System: D5090 - Other Electrical Systems

Location: Roof
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 3 - Response Time (3-4 yrs)
Correction: Repair Lightning Protection System
Qty: 1.00
Unit of Measure: Job
Estimate: $24,249.82
Assessor Name: Craig Anding
Date Created: 02/09/2016

Notes: Prepare a study to determine if the school building requires lightning protection system.

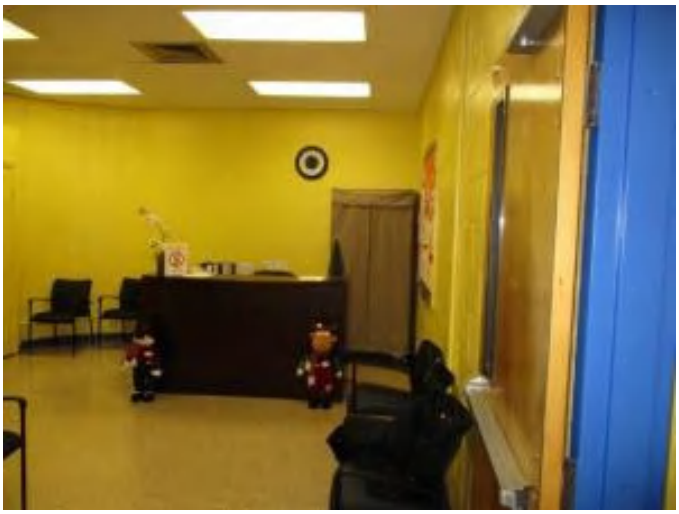
Priority 4 - Response Time (4-5 yrs):

System: D5030 - Communications and Security

Location: Entire Building
Distress: Security Issue
Category: 1 - Health & Safety
Priority: 4 - Response Time (4-5 yrs)
Correction: Add/Replace Video Surveillance System
Qty: 1.00
Unit of Measure: Ea.
Estimate: $26,555.36
Assessor Name: Craig Anding
Date Created: 02/09/2016

Notes: Provide indoor surveillance CCTV cameras for complete coverage of the school building interior. Approximate 6

System: D5030 - Communications and Security



Location: Entire Buildiing
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 4 - Response Time (4-5 yrs)
Correction: Provide wireless GPS clock system
Qty: 10.00
Unit of Measure: LS
Estimate: $9,415.26
Assessor Name: Craig Anding
Date Created: 02/09/2016

Notes: Replace clock system with wireless, synchronized, battery operated, clock system. Approximate 10 clocks.

Priority 5 - Response Time (> 5 yrs):

System: D4010 - Sprinklers

Location: Entire building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 5 - Response Time (> 5 yrs)

Correction: Install a fire protection sprinkler system

Qty: 9,000.00

Unit of Measure: S.F.

Estimate: $128,749.04

Assessor Name: Craig Anding

Date Created: 02/21/2016

Notes: Install fire protection sprinkler system

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D3040 Distribution Systems	Air handling unit, packaged weatherproof, with cooling/heating coil section, filters, mixing box, constant volume, single zone, 10,000 CFM, cooling coils may be chilled water or DX, heating coils may be hot water, steam or electric	1.00	Ea.	Roof top					25	2007	2032	$69,052.50	$75,957.75
D5010 Electrical Service/Distribution	Load centers, 1 phase, 3 wire, main lugs, rainproof, 120/240 V, 400 amp, 42 circuits, incl 20 A 1 pole plug-in breakers	1.00	Ea.	First floor electrical room					30	1995	2025	$3,663.90	$4,030.29
												Total:	**$79,988.04**

Executive Summary

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

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

Function:	
Gross Area (SF):	10,700
Year Built:	1967
Last Renovation:	
Replacement Value:	$205,602
Repair Cost:	$96,338.20
Total FCI:	46.86 %
Total RSLI:	44.96 %

Description:

Attributes:

General Attributes:

Bldg ID:	S852001	Site ID:	S852001

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	44.70 %	14.41 %	$20,673.90
G40 - Site Electrical Utilities	45.58 %	121.71 %	$75,664.30
Totals:	**44.96 %**	**46.86 %**	**$96,338.20**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2010	Roadways	$11.52	S.F.		30				0.00 %	0.00 %				$0
G2020	Parking Lots	$8.50	S.F.	9,700	30	1967	1997	2028	43.33 %	23.01 %	13		$18,970.73	$82,450
G2030	Pedestrian Paving	$12.30	S.F.	1,000	40	2000	2040		62.50 %	13.85 %	25		$1,703.17	$12,300
G2040	Site Development	$4.36	S.F.	10,700	25	2000	2025		40.00 %	0.00 %	10			$46,652
G2050	Landscaping & Irrigation	$0.19	S.F.	10,700	15	2015	2030		100.00 %	0.00 %	15			$2,033
G4020	Site Lighting	$4.84	S.F.	10,700	30	1995	2025		33.33 %	102.08 %	10		$52,863.60	$51,788
G4030	Site Communications & Security	$0.97	S.F.	10,700	30	1967	1997	2047	106.67 %	219.68 %	32		$22,800.70	$10,379
								Total	**44.96 %**	**46.86 %**			**$96,338.20**	**$205,602**

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.

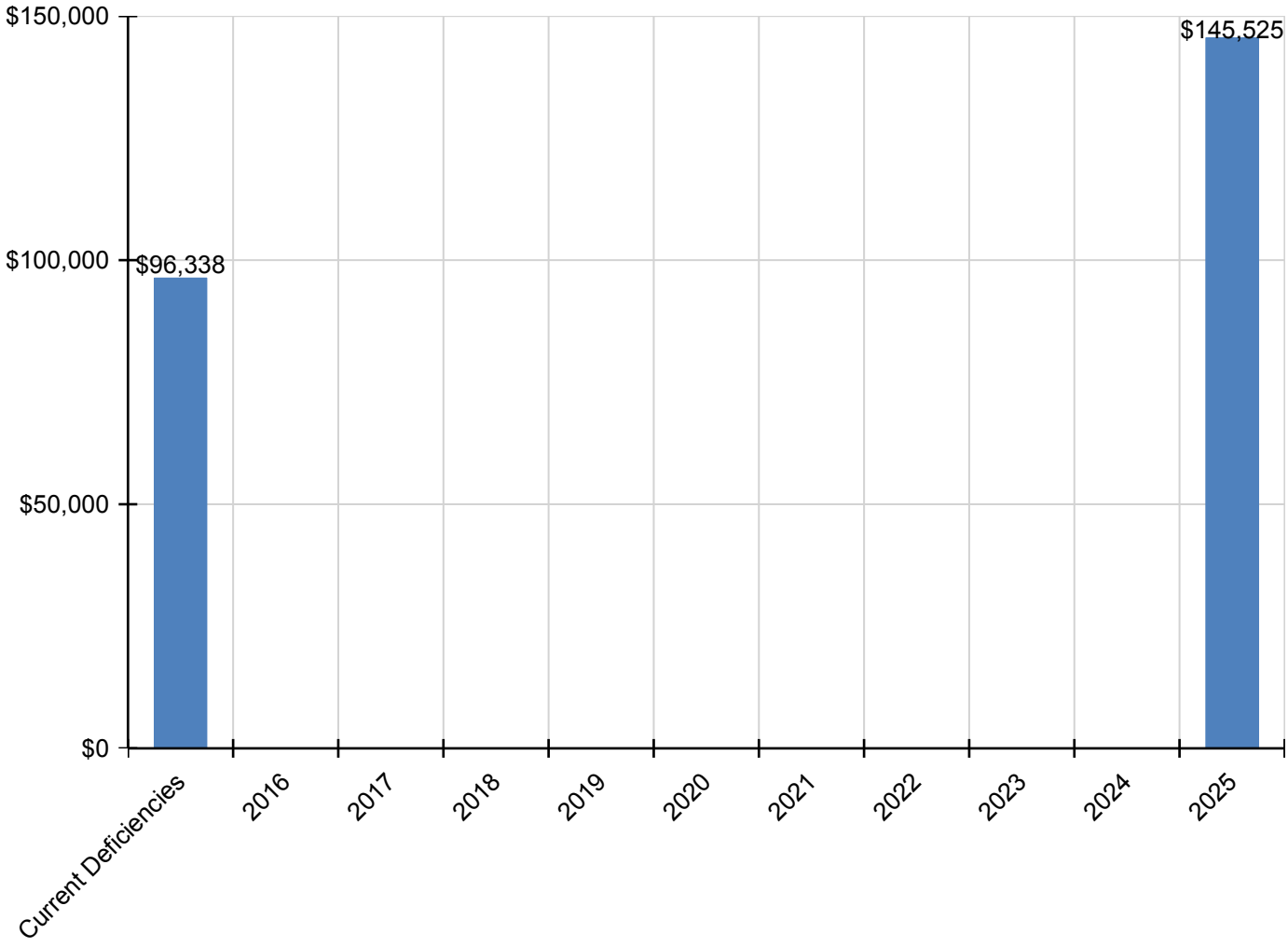
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$96,338**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$145,525**	**$241,863**
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	$18,971	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$18,971**
G2030 - Pedestrian Paving	$1,703	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,703**
G2040 - Site Development	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$68,966	**$68,966**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$52,864	$0	$0	$0	$0	$0	$0	$0	$0	$0	$76,559	**$129,422**
G4030 - Site Communications & Security	$22,801	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$22,801**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

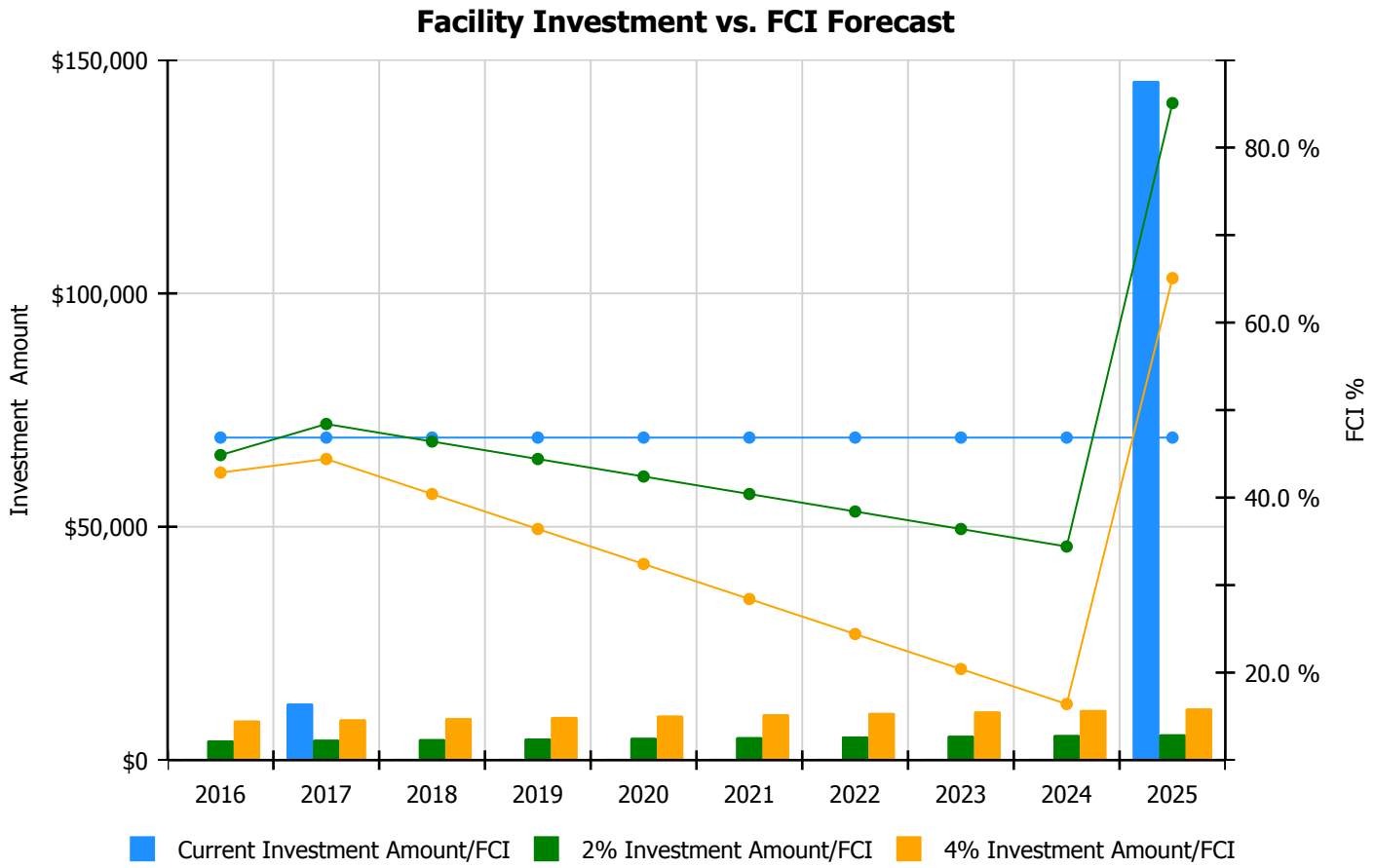
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

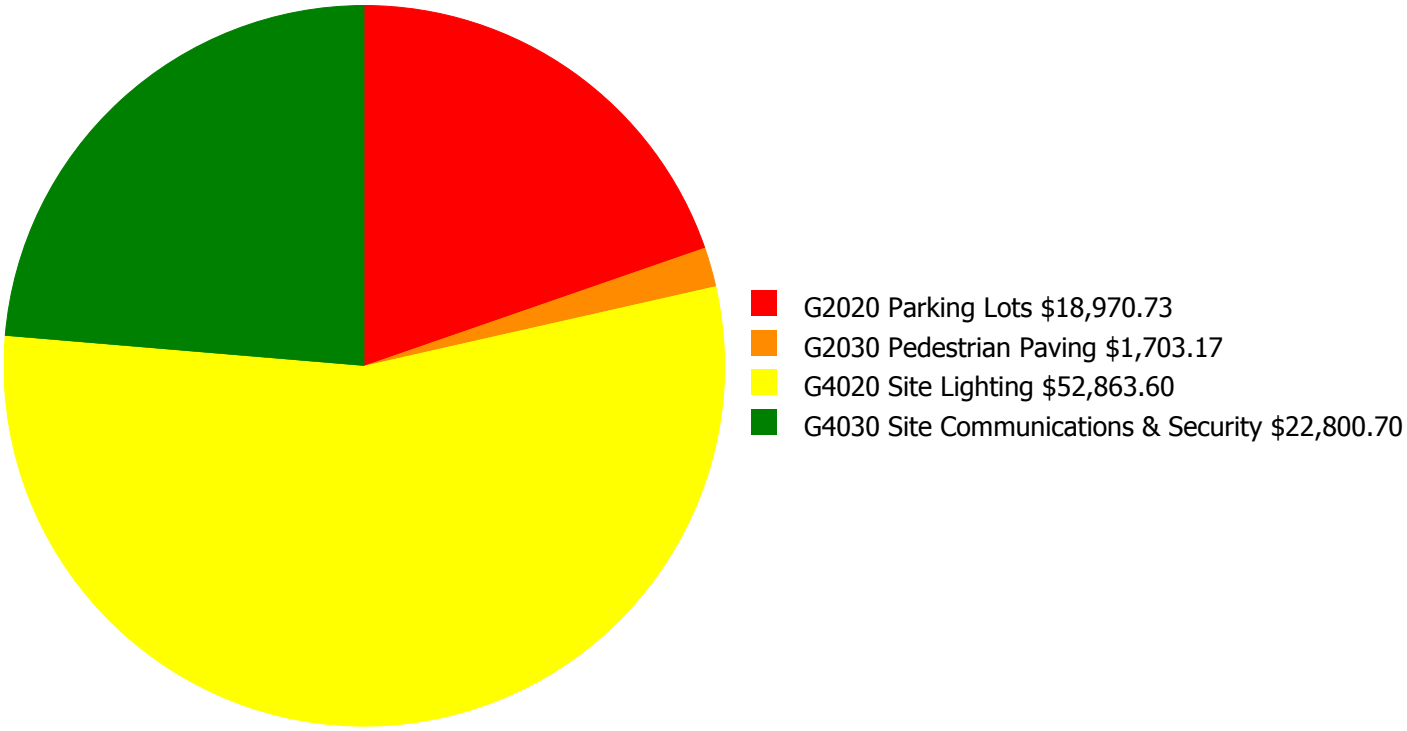
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 46.86%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$4,235.00	44.86 %	$8,471.00	42.86 %
2017	$12,112	$4,362.00	48.41 %	$8,725.00	44.41 %
2018	$0	$4,493.00	46.41 %	$8,987.00	40.41 %
2019	$0	$4,628.00	44.41 %	$9,256.00	36.41 %
2020	$0	$4,767.00	42.41 %	$9,534.00	32.41 %
2021	$0	$4,910.00	40.41 %	$9,820.00	28.41 %
2022	$0	$5,057.00	38.41 %	$10,115.00	24.41 %
2023	$0	$5,209.00	36.41 %	$10,418.00	20.41 %
2024	$0	$5,365.00	34.41 %	$10,731.00	16.41 %
2025	$145,525	$5,526.00	85.08 %	$11,052.00	65.08 %
Total:	**$157,637**	**$48,552.00**		**$97,109.00**	

Deficiency Summary by System

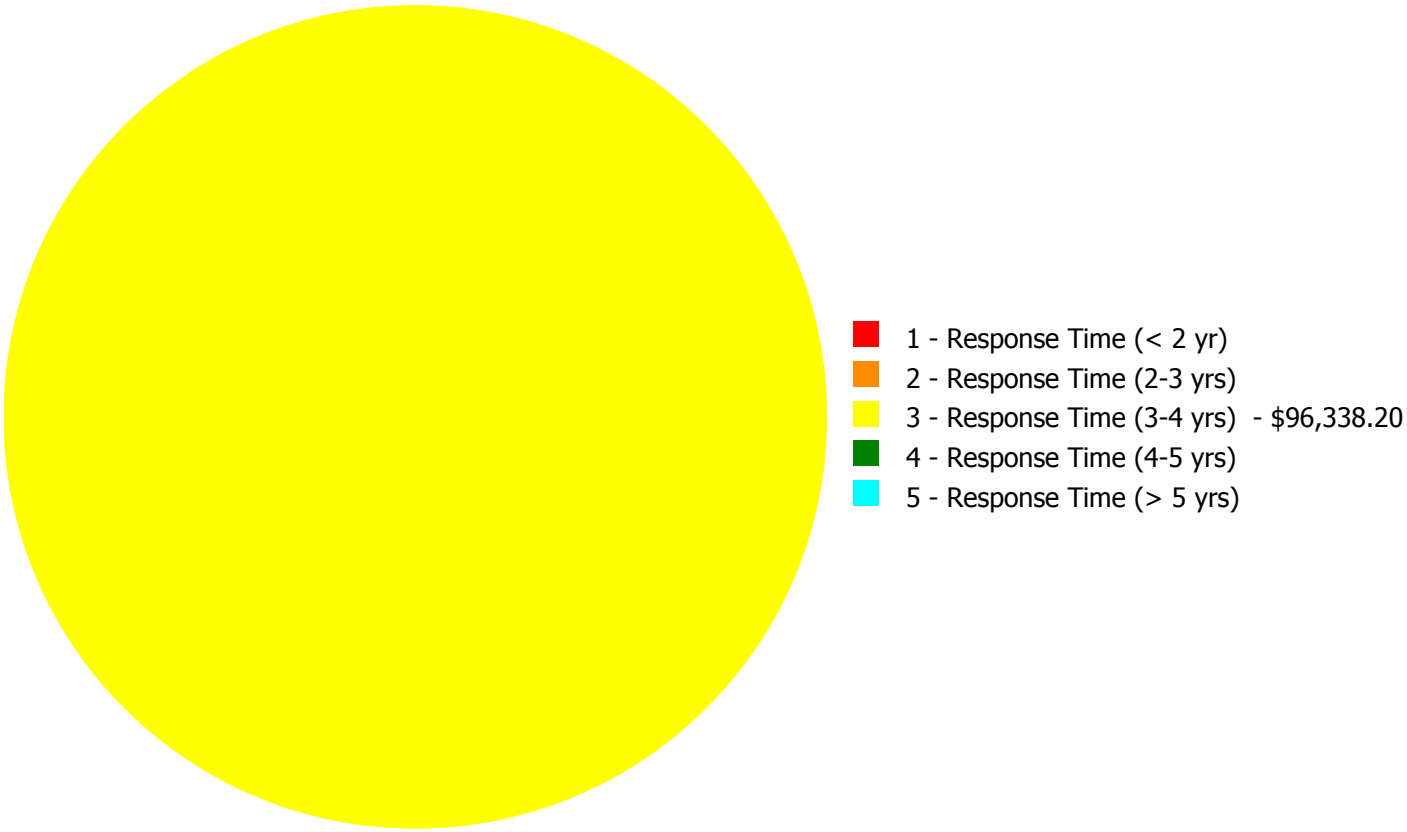
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $96,338.20

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: $96,338.20

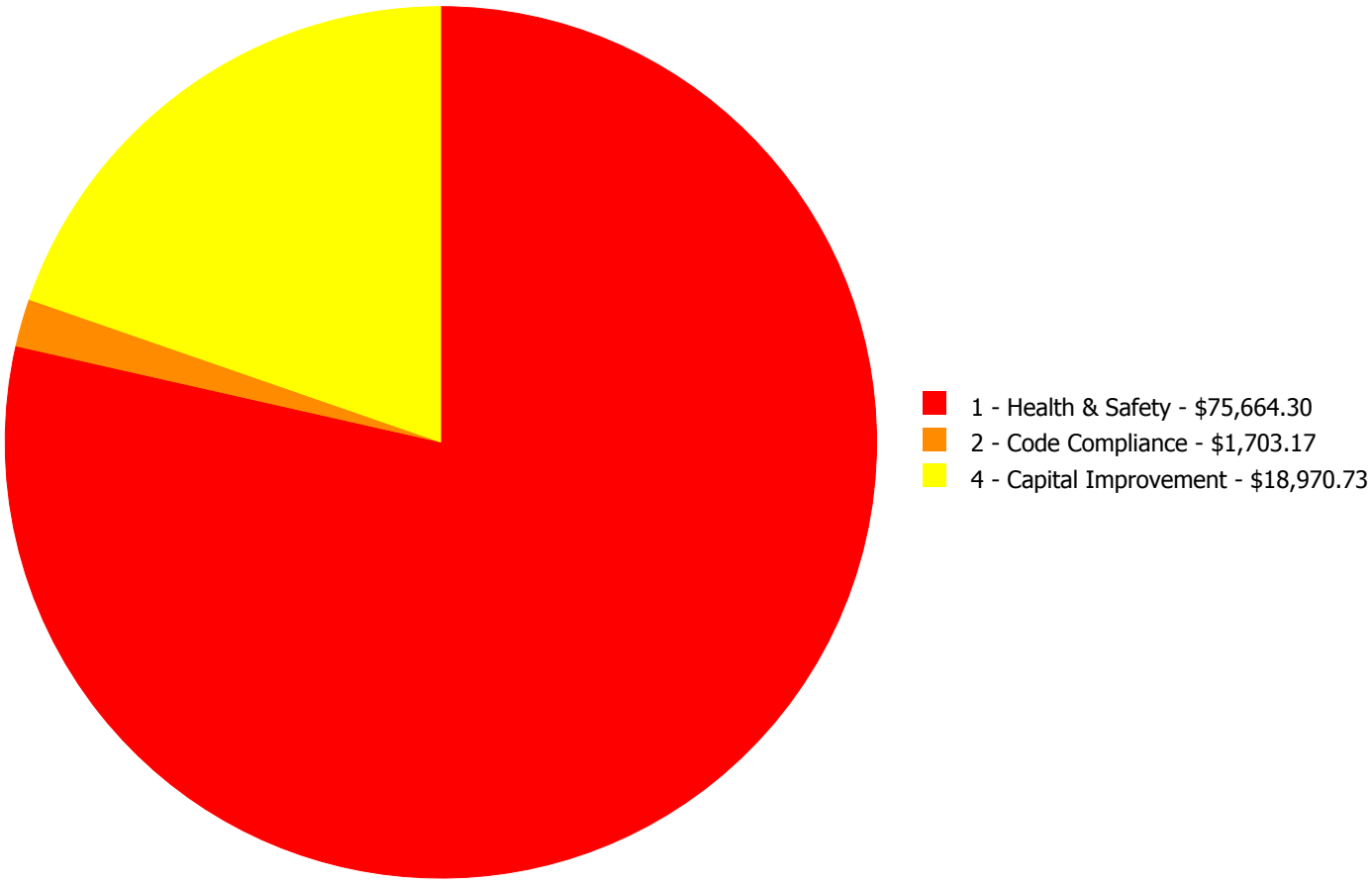
Deficiency By Priority Investment Table

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	$18,970.73	$0.00	$0.00	$18,970.73
G2030	Pedestrian Paving	$0.00	$0.00	$1,703.17	$0.00	$0.00	$1,703.17
G4020	Site Lighting	$0.00	$0.00	$52,863.60	$0.00	$0.00	$52,863.60
G4030	Site Communications & Security	$0.00	$0.00	$22,800.70	$0.00	$0.00	$22,800.70
	Total:	$0.00	$0.00	$96,338.20	$0.00	$0.00	$96,338.20

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: $96,338.20

Deficiency Details by Priority

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

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

System: G2020 - Parking Lots

Location: South end of site and entry drive

Distress: Maintenance Required

Category: 4 - Capital Improvement

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

Correction: Fill pavement cracks and reseal parking lot - including striping - change the LF of crack repair if it is severe

Qty: 9,700.00

Unit of Measure: S.F.

Estimate: $18,970.73

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Crack seal and resurface the parking lot.

System: G2030 - Pedestrian Paving

Location: Rear service door

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Install missing concrete landings at exterior doors reducing the step down from the door

Qty: 1.00

Unit of Measure: Ea.

Estimate: $1,703.17

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Provide an exterior landing at the rear service door.

System: G4020 - Site Lighting

Location: Parking Lot

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Add Site Lighting - pole mounted - select the proper light and pole

Qty: 2.00

Unit of Measure: Ea.

Estimate: $52,863.60

Assessor Name: Craig Anding

Date Created: 02/09/2016

Notes: Provide pole mounted lighting fixtures to illuminate the parking lot. Approximate 2

System: G4030 - Site Communications & Security

Location: Building Perimeter

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Add Video Surveillance System

Qty: 4.00

Unit of Measure: Ea.

Estimate: $22,800.70

Assessor Name: Craig Anding

Date Created: 02/09/2016

Notes: Provide outdoor surveillance CCTV cameras to the building exterior for full coverage of the perimeter. Approximate 4 CCTV cameras.

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