

POUDRE SCHOOL DISTRICT PUTNAM ELEMENTARY SCHOOL

FACILITY CONDITION ASSESSMENT

FORT COLLINS, CO

OCTOBER 2023



Together, Building a Thriving Planet

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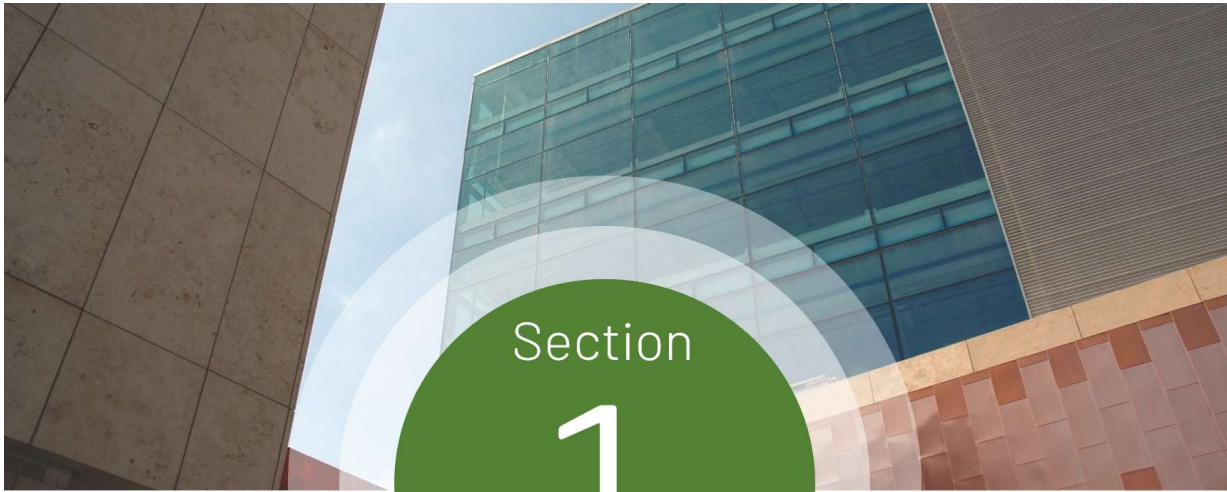
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Section

1

Executive Summary

Executive Summary

Project Goals

The contents of this report present the results of the Facility Condition Assessment (FCA) performed at Putnam ES within the Poudre School District (PSD) on March 31, 2023. PSD intends to utilize the findings of this report to inform both capital and operating budgets, prioritize maintenance efforts, and optimize planning processes as replacements and upgrades of assets and facility systems become necessary in the future.

Facility List

The scope of the FCA project included the assessment of the following campus.

FACILITY NAME	AREA (SF)	YEAR(S) BUILT
PUTNAM ES	59,101	1956
TOTAL	59,101	

Facility Summary

Putnam ES

Putnam ES is located at 1400 Maple St., Fort Collins, CO 80521. This 59,101 SF facility consists of one level and was initially constructed in 1956. The equity index for this school is 3.2.



Putnam ES

Executive Summary

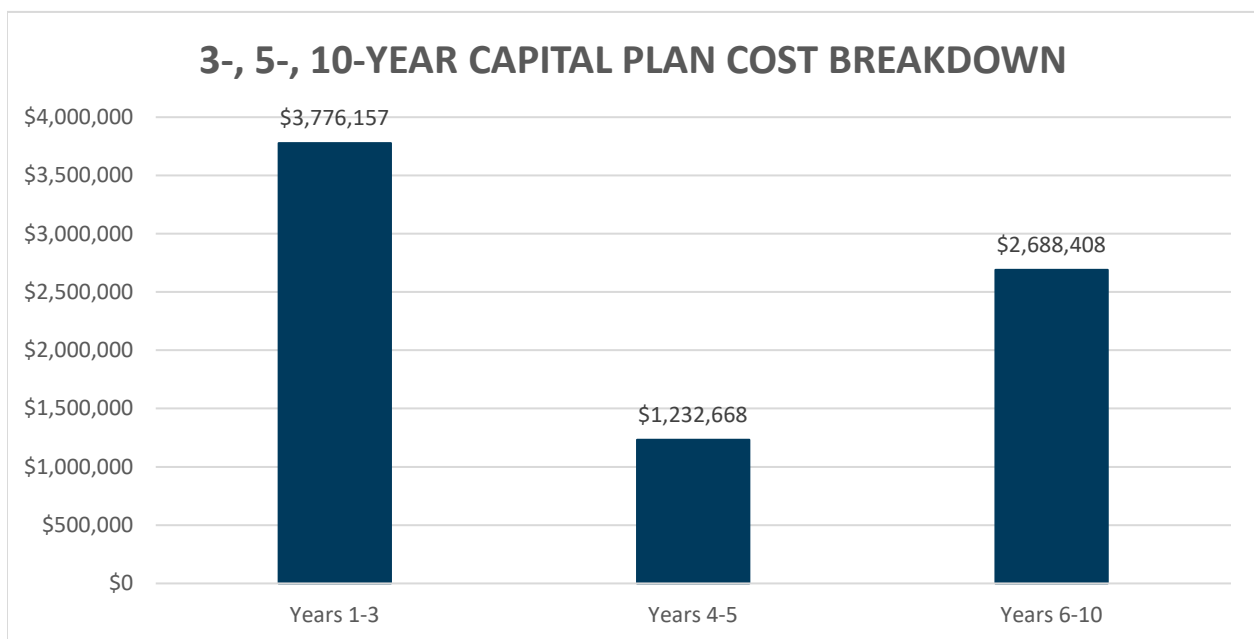
Assessment Summary

This section summarizes the building systems at the facility and describes the general condition observed based on the assessment performed on March 31, 2023. Additional details, findings and recommendations are presented in Section 3 of this report.

Capital Plan Summary

The estimated replacement costs for equipment expected to fail within the next ten years are shown below, divided into three separate plans. These plans are the 3-Year Plan, 5-Year Plan, and the 10-Year Plan. Each plan includes the cost for replacement of equipment expected to fail during these periods, based on the observed condition of the equipment at the time of the assessment.

Replacement costs include 3% inflation year over year.



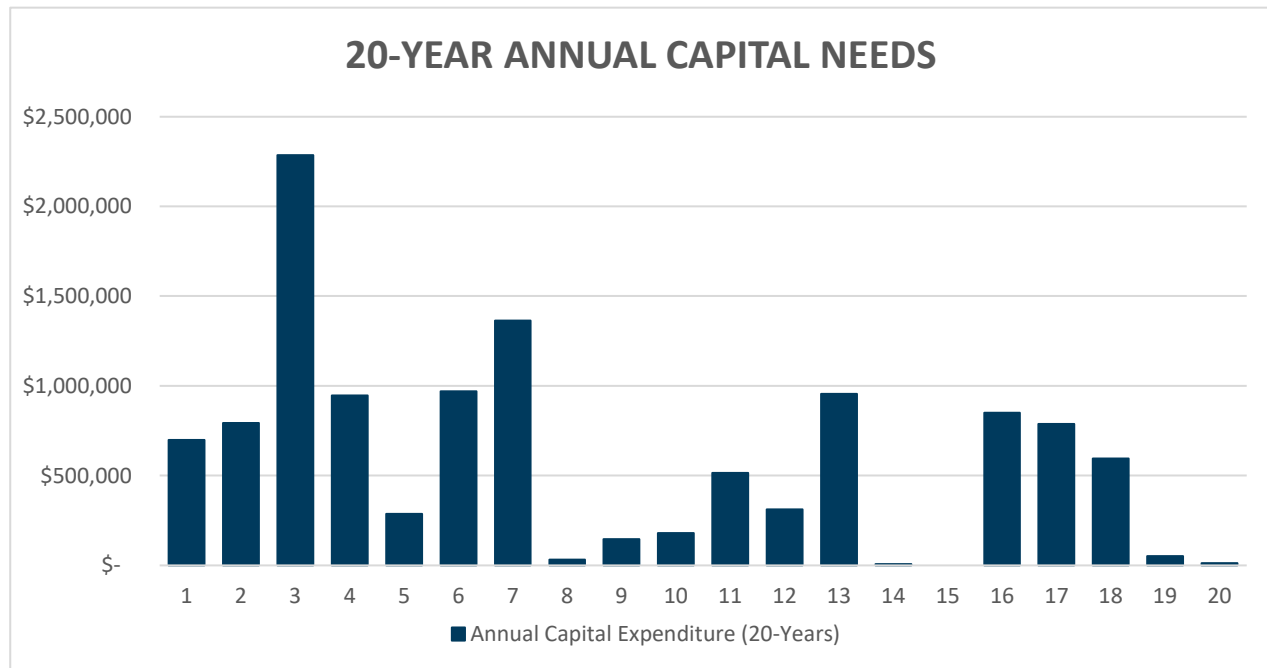
3-, 5-, 10-Year Capital Plan Cost Breakdown

Executive Summary

Annual Capital Expenditure (20 Years)

20-Year Annual Capital Needs and 20-Year Annual Capital Expenditure by Subsystem below indicate the estimated replacement costs for equipment expected to fail within the next twenty years, and are displayed both by year and by subsystem.

Replacement costs include 3% inflation year over year.



Annual Capital Expenditure by Year

Replacement costs associated with the Annual Capital Expenditure graph and table include values that are adjusted for inflation.

20-Year Annual Capital Expenditure by Subsystem

Subsystem	Years 1-5	Years 6-10	Years 11-15	Years 15-20
B20 - Enclosure	\$1,094,324	\$444,952	\$0	\$0
B30 - Roofing	\$537,802	\$0	\$0	\$0
C10 - Int. Construction	\$52,015	\$507,520	\$28,287	\$530,515
C20 - Stairs	\$0	\$0	\$0	\$0
C30 - Interior Finishes	\$863,548	\$247,104	\$1,358,720	\$54,841
D10 - Conveying	\$0	\$0	\$0	\$0
D20 - Plumbing	\$0	\$36,852	\$1,075	\$79,923
D30 - HVAC	\$1,264,773	\$657,216	\$19,049	\$1,498,363
D40 - Fire Suppression	\$0	\$0	\$0	\$0
D50 - Electrical	\$1,196,363	\$794,764	\$345,107	\$132,484
E10 - Equipment	\$0	\$0	\$34,389	\$0
Total:	\$5,008,824	\$2,688,408	\$1,786,627	\$2,296,126

Section

2

Approach and Methodology

Scope and Approach

Scope and Approach

SCOPE OF WORK

The scope of this facility condition assessment includes all major mechanical, electrical, and plumbing equipment, and commercial refrigeration equipment. In addition, the building enclosure, roofing, interior construction and finishes, and fire suppression systems are included within the assessment. Turf, site assets, kitchen assets besides walk-in freezers, exhaust fans and kitchen make up air units are not included in scope.

The following table lists the general asset types included within the scope of this assessment. Also shown is the corresponding Uniformat code, which has been used to catalog equipment based on type and intended use.

UniFormat Classification of Building Systems

UNIFORMAT CODE	CATEGORY DESCRIPTION
B20	Exterior Enclosure (i.e. windows, walls, doors)
B30	Roofing (i.e. roofing covering, skylights, etc.)
C10	Interior Construction (i.e. doors, walls)
C20	Interior Stairs (i.e. stair construction)
C30	Interior Finishes (i.e. flooring, ceiling finishes, etc.)
D10	Conveying (i.e., elevators)
D20	Plumbing (i.e., water heating, pumps, compressors)
D30	Heating, Ventilation, and Air Conditioning
D40	Fire Suppression Systems
D50	Electrical (panelboards, transformers, switchgear)
E10	Equipment, Kitchen Hoods, Walk-in Units, etc.

Scope and Approach

RATINGS, METHODS AND SCORING

To allow Poudre School District more flexibility in prioritizing capital planning efforts, McKinstry has developed the following metrics which assign various scores to each asset.

Asset Condition

Condition ratings are presented for each asset as a score of 1 – 5. Scores are based upon a visual inspection during the building evaluation period. A score of 1 signifies that the asset is in great, “like new” condition. A score of 2 indicates that the asset is in good condition. A score of 3 signifies that the asset is in expected “average” condition based on function and the age of the asset. A score of 4 signifies that the asset is in poor condition, in need of repair, and will require replacement in the near future. A score of 5 signifies that the asset is in very poor or failed condition and in need of imminent replacement.

SCORE	CONDITION ASSESSMENT
1	Asset is in great condition, no action required.
2	Asset is in good condition, regular maintenance expected.
3	Asset is in expected condition, regular replacement/maintenance expected.
4	Asset is in poor condition, maintenance/replacement recommended soon.
5	Asset is in very poor condition, urgent replacement needed.

Student/Teacher Impact

Student/Teacher Impact scores are presented for each asset on a scale of 1 – 5 (low to high impact). This metric considers educational (student and/or teacher) impact caused if the equipment were to fail. Assets serving classrooms and other educational spaces are assigned scores of 2-5 depending on the impact the failure of an asset would have and if backups are available. A student/teacher impact score of 1 indicates that there is little to no impact to educational activities.

SCORE	STUDENT/TEACHER IMPACT
1	Failure poses no significant educational impact.
2	Failure poses low educational impact.
3	Failure poses moderate impact. Asset serves teaching area, but has backup.
4	Failure poses high educational impact.
5	Failure poses severe impact. Asset serves teaching area and has no backup.

Energy Cost Impact

The Energy Impact score is presented for each asset on a scale of 1-5 (low to high impact). Each of the asset types within the scope of this assessment were evaluated based on their impact to energy cost and consumption (including electrical, natural gas, and liquid fuels). Assets with a higher Energy Cost Impact score indicate that the asset has a large contribution to the overall energy costs of the facility. A sample of Energy impact scores is shown below:

Scope and Approach

ASSET TYPE	ASSET SIZE	ENERGY COST IMPACT (1-5)
Air Handling Unit	less than 10,000 CFM	3
	between 10,000 CFM – 50,000 CFM	4
	greater than 50,000 CFM	5
Chiller	less than 200 tons	3
	between 200 – 500 tons	4
	greater than 500 tons	5
Computer Room AC Condensing Unit Heat Pump	less than 10 tons	2
	greater than 10 tons	3
Cooling Tower	less than 200 tons of rejection	2
	greater than 200 tons of rejection	3
Dust Collector	less than 5 HP	2
	between 5 HP and 25 HP	3
	greater than 25 HP	4
Exhaust Fan	less than 5000 CFM	2
	greater than 5000 CFM	3
Fan Coil Unit	greater than 3000 CFM	2
Fuel Fired Boiler	less than 200 MBH	2
	between 200 – 1000 MBH	3
	between 1000 – 2000 MBH	4
	greater than 2000 MBH	5
Furnace	less than 100 MBH	2
	between 100 and 500 MBH	3
	greater than 500 MBH	4
Generator	less than 500 KW	2
	greater than 500 KW	3
Lighting, Exterior	LED	2
	Fluorescent	3
	HID/Incandescent	4
Lighting, Interior	LED	2
	Fluorescent	4
	HID/Incandescent	5
Make-Up Air Unit	less than 5,000 CFM	3
	between 5,000 and 25,000 CFM	4
	greater than 25,000 CFM	5
Pumps	less than 25 HP	2
	between 25 -150 HP*	3
	greater than 150 HP*	4
Return Fan Supply Fan	less than 20 HP	2
	greater than 20 HP*	3

Scope and Approach

ASSET TYPE	ASSET SIZE	ENERGY COST IMPACT (1-5)
Rooftop Unit	less than 5 ton	2
	between 5 and 20 tons	3
	between 20 and 50 tons	4
	greater than 50 tons	5
Transformer	greater than 200 kVA	2
VFD	greater than 50 HP	2
Air Compressor	All sizes	2
Air Curtain		
Air Dryer		
Cabinet Unit Heater		
Dehumidifier		
Electric Duct Heater		
Humidifier		
Unit Heater		
Unit Ventilator		
Walk-In Condenser		
Walk-In Unit		
All Other	All sizes	1

*Add 1 for direct drive motors

Operational Impact

Operational Impact scores are presented for each asset on a scale of 1 – 5 (low to high impact). This metric considers the operational impact caused if the equipment were to fail. Assets serving critical administrative and district operational spaces are assigned scores of 2-5 depending on the impact the failure of an asset would have and if backups are available. An operational impact score of 1 indicates that there is little to no impact to administrative or operational activities.

SCORE	OPERATIONAL COST IMPACT SCORE
1	Asset has little to no operational impact.
2	Asset has a low level of operational impact.
3	Asset has a moderate operational impact.
4	Asset has a high level of operational impact.
5	Asset has severe operational impact.

Industry Life Expectancy

The designed life expectancy for a given asset is determined using a combination of widely accepted industry standards including ASHRAE and BOMA, as well as a manufacturers' database of equipment life expectancies. This value is expressed in number of years.

Scope and Approach

Observed Remaining Life

The Observed Remaining Life is also expressed in number of years and takes into consideration the function and operating environment of the asset, as well as a determination based upon a visual inspection of the asset. The Observed Remaining Life value may vary from the Design Life value. For example, a secondary heat exchanger that has been well maintained may have an Observed Remaining Life that is greater than the expected Design Life. Likewise, a primary chilled water pump that has not been well maintained, and shows visual signs of premature wear and tear, may have an Observed Remaining Life that is less than the expected Design Life.

Cost Estimating

Based on the constraints of the scope outlined in the contract we have based our asset pricing upon industry standards, RSMeans, and pricing data sourced through McKinstry's construction division. This information is intended to assist in the prioritization and resource allocation associated with maintenance and capital replacement projects. Cost estimates are determined using specific characteristics of each asset (tonnage, motor size, capacity, etc.) along with one of several cost information data sets. Standard equipment warranties are included.

To clarify, all Estimated Replacement Costs include averages of the material cost of the asset, the demolition and installation of that asset type and are expressed in 2023 dollars. Additionally, site specific construction and equipment invoices have been utilized as available.

Costs associated with project design, contractor competence, commissioning, test and balance services and are excluded from the estimate and are the responsibility of the Client. McKinstry assumed a 3% inflation, applied year over year. All work is during normal business hours. For mechanical equipment any duct work, piping, existing appurtenances are to be reused; costs to repair or replace any lines going to or coming from the units is excluded. Existing isolation valves to be used; repair or replacement of isolation valves is excluded.

Costs typically associated with project-specific parameters are excluded and should be added at the discretion of the Client. Such exclusions include risks or contingencies such as asbestos abatement, other hazardous waste abatement, scope changes, design changes, taxes, special wage requirements such as Prevailing Wage rates, warranty management and unknown site conditions. Overtime and after-hours work is excluded. Any necessary structural or electrical upgrades to replace equipment is excluded. Incidental code violations resulting from project scope or execution are excluded. Correction of any existing code violations are excluded. Temporary heating, cooling, ventilation, and power during construction and the warranty period are excluded. Moving of heavy equipment or furniture to complete the work is excluded. Running and terminating new IP drops for equipment is excluded. Any changes to fire and life safety systems for mechanical equipment upgrades is excluded.

Data-Driven Maintenance Approach

Included with the submission of this report is the FCA Data Collection Workbook, which includes all data collected for each asset. The Workbook can be used to quickly sort through equipment and prioritize maintenance and replacement efforts. Additional observations and equipment details are provided within the workbook for each asset.

Scope and Approach

Each asset is classified according to building system, size, capacity, and other standards, as well as ratings of current condition and impact of failure. Such organization and classification facilitate searching and sorting the data for maintenance and replacement priorities. As mentioned, the impact ratings help to compare one asset to another. Based on observed condition and impact scores, the future maintenance priorities for each building are described further in later sections.

As each of the components identified in the workbook is repaired or replaced, the information can be revised to reflect the new conditions. Remaining useful life values can also be manually iterated one year from the assessment date to reflect fewer remaining years of life. Assets no longer in service can be removed from the list. Similarly, assets that have been newly installed can be added to the list. Following the impact guidelines, relative priority can be calculated for these assets.

Equity Index

As an additional metric to the six existing areas of the Facilities Condition Assessment, Poudre School District has created an Equity Index to assist in prioritizing facilities improvement projects. This number takes into account student poverty, students qualifying for ELA services, students qualifying for Special Education services, and students who are homeless. The calculated score for each school is based on these factors and where it falls in relation to the district average. The formula would be:

$$\frac{\text{School Percentage in these areas added together as decimals}}{\text{District Percentages in these areas added together as decimals}}$$

In this formula, a school with student needs equal to the district average would have an equity index of 1.0. Schools with student needs higher than the district average would have an Equity Index greater than 1.0. Schools with student needs less than the district average would have an Equity Index less than 1.0.

Category	Equity Index
Low	0.29
High	3.20
Average	1.11
Median	0.95

The equity index for Putnam ES is 3.2.

Sample Calculation:

School Name	School Population K-12 Total	F/R	ELL	SPED	McKinney-Vento	Total of Previous Columns	Equity Index Number = school average / district average
Sample	381	15.20%	0.00%	8.40%	0.00%	0.24	0.24/0.48 = 0.49
Grand PSD Total - Oct 2022 Count	26,163	29.5%	5.8%	9.5%	3.4%	0.48	

F/R - Free or Reduced-Price Lunch; ELL- English Language Learners; SPED - Special Ed.; McKinney-Vento - Homeless Assistance

Section

3

Condition Assessment

Condition Assessment

SYSTEMS DESCRIPTION

This section summarizes the building systems at Putnam ES and describes the general condition observed based on the assessment. Specific findings and recommendations are detailed later in this report.

Exterior Enclosure

The original building was constructed in 1956. Several major additions and renovations have occurred since initial construction including in 1966, 1986, 1998, 1999, 2001, and 2014. The exterior walls are primarily of brick construction but include composite masonry unit (CMU) construction in the 1997 addition. Windows are mostly of the original steel framed type but also include some 2002 aluminum framed windows. Exterior hollow metal doors are of six different ages of construction dating back to the 1956 construction.

Roofing

Rolled asphalt roofing was replaced in 1997 and is present on the majority of the roof. The 1997 addition roofing is of the EPDM type. The metal flashing was also replaced in 1997. All three of these roofing components will require replacement in approximately three years.

Interior Construction and Finishes

The interior construction components of the building include 1956 and 1966 brick walls with a ceramic tile veneer. Interior doors were replaced in 1986 and 2001. The interior doors are primarily of the wood and hollow metal type. The majority of interior finishes were also updated in 1997, 2001, and 2014 and include including carpet and VCT flooring, and acoustical tile ceilings.

Conveyance

The building is of single level construction and does not have, or require, a passenger or freight elevator.

Electrical and Lighting

The building includes both 120/208V and 277/480V service. Electrical assets, including panelboards, transformers, and the main switchboard mostly date to 2012 and 2014. The 2012-built main switchboard is expected to require replacement in approximately 29 years. The back-up generator dates to 1998 and is expected to require replacement in three years. Emergency back-up lighting appears to date to 2014. The building's interior lighting system consists primarily of 2014-built fluorescent fixtures. Recommend replacement of the fluorescent lighting fixtures with LED lighting fixtures in approximately 10 years. However, the Gym and East Wing sections of the school are provided LED fixtures that were updated in 2014. The LED exterior lighting wall packs date to the 2014 renovation as well. [REDACTED] The fire alarm and security systems were updated in 2014.

HVAC Systems

The primary HVAC assets include ten 1997-built rooftop units and three 1998-built air handling units. The building is also provided twelve exhaust fans, one cabinet unit heater, (22) duct heating coils, and (3) gas-fired boilers. B-3 dates to 1991, and has an estimated three years of remaining life. Four associated heating pumps vary in age between 1998 and 2016 install. The 22 DHCs are expected to require replacement in approximately 4 years. In 2014 the BAS was upgraded. Expect to replace all ten of the RTUs within two years. [REDACTED]
[REDACTED]

Plumbing

Plumbing assets include three gas-fired water heaters and two circulation pumps. Two 2014-built backflow preventers are also provided. All three GWHs and the two associated circulation pumps were replaced in 2019-2022 and are in good condition.

Fire Suppression

The fire alarm system was replaced in 2014. [REDACTED] The Fire Protection System appears to be well maintained and updated per fire code requirements. No deficiencies were noted with this system.

Equipment

The Kitchen area is provided a Walk-In Cooler and a Walk-In Freezer. Both units were replaced in 2016 as well as their associated condensing units.

Condition Assessment

PRIORITIES

SPECIFIC PRIORITIES

The top capital measures (up to five max) have been detailed in the following tables. Each measure receives a priority level of 1, 2, or 3. A priority level of 1 indicates that the measure is considered an immediate concern or a potential hazard and should be addressed as soon as possible. A priority level of 2 indicates that the measure is considered urgent, but not a potential hazard or there is a less severe impact to occupants. A priority level of 3 indicates that the assets associated with the measure are nearing end of life, but have not yet failed or have a mild to moderate impact on occupant safety and comfort.

Putnam ES

Replace Exterior Doors & Windows



The following assets are included within this measure:

FCAID-470001, FCAID-470007, FCAID-470008, FCAID-470011



Priority Level:	2
Estimated Cost:	\$474,890
Remaining Life:	1 year

Condition Assessment

Replace HWP-1 & HWP-2

Hwp-1 and HWP-2 were installed in 1998 and are now 5 years past expected life. The are both [REDACTED] expected to require replacement within two years.

The following assets are included within this measure:

FCAID-470101, FCAID-470102



Priority Level:
Estimated Cost: \$23,800
Remaining Life: 2 years

Repair/Replace VFD-AHU-1-Supply

Though VFD-AHU-1-Supply (10 Hp) was newly installed in 2022, the control module was observed to have been removed at the time of inspection. Recommend repair or replacement of this VFD as soon as possible.

The following assets are included within this measure:

FCAID-470147



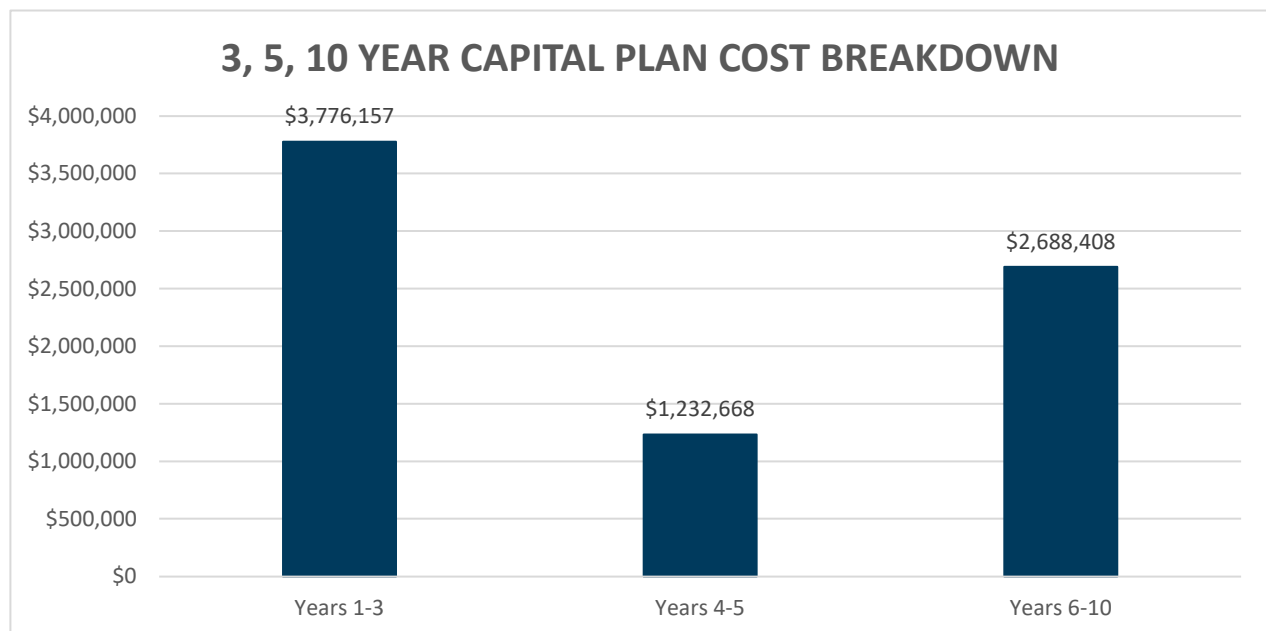
Priority Level: 2
Estimated Cost: \$5,840
Remaining Life: 1 year

Condition Assessment

3-, 5-, 10-YEAR PLANS

The following sections present the expected equipment replacement costs over the next ten years, broken into three separate plans. These plans are the 3-Year Plan, 5-Year Plan, and the 10-Year Plan. Each plan includes the equipment expected to fail during these periods, based on the observed condition of the equipment at the time of the assessment. Note, the 3-Year Plan includes assets failing within the next three years, the 5-Year Plan includes assets failing between four and five years, and the 10-Year Plan includes assets failing between in the next six to ten years from the assessment date.

The chart below presents the total expected replacement costs for each plan. Note that these figures include 3% inflation YOY.



Future Capital Plan

The table below displays replacement costs for the campus, and the number of associated assets expected to fail within the next ten years. Assets requiring replacement or extensive maintenance in this plan are presented in Appendices A, B, and C.

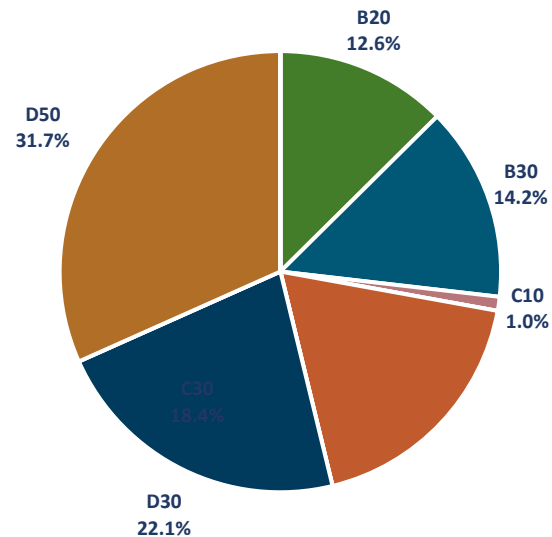
REPLACEMENT PERIOD	ASSET QUANTITY	CUMULATIVE REPLACEMENT COST
3-Year Plan	39	\$3,776,157
5-Year Plan	40	\$1,232,668
10-Year Plan	22	\$2,688,408
Total	101	\$7,697,232

Condition Assessment

3-YEAR PLAN BREAKDOWN

The three-year plan includes the estimated capital expenditure needed to replace assets reaching end of life in years 1-3, or between 2024 and 2026. The sum of the anticipated capital needs is \$3,776,157. The specific assets that will reach end of life in this period are listed in Appendix A.

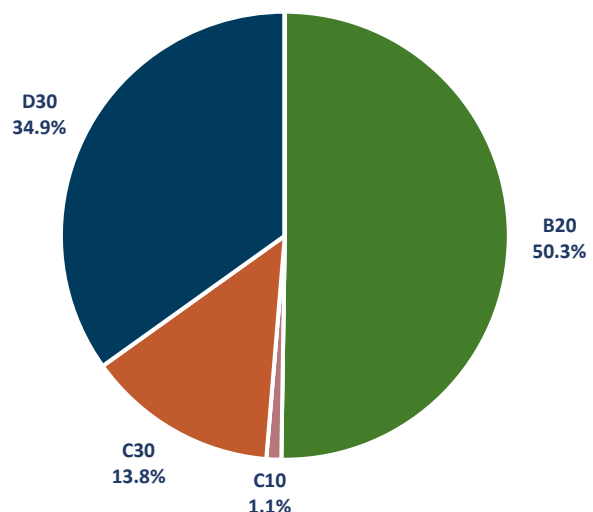
SUBSYSTEM	Years 1-3	Percent
A10 - Foundations	\$0	0%
B10 - Superstructure	\$0	0%
B20 - Exterior Enclosure	\$474,890	13%
B30 - Roofing	\$537,802	14%
C10 - Int. Construction	\$38,903	1%
C20 - Stairs	\$0	0%
C30 - Interior Finishes	\$693,326	18%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$0	0%
D30 - HVAC	\$834,873	22%
D40 - Fire Protection	\$0	0%
D50 - Electrical	\$1,196,363	32%
E10 - Equipment	\$0	0%
G20 - Site Improvements	\$0	0%
G40 - Site Electrical	\$0	0%



5-YEAR PLAN BREAKDOWN

The five-year plan includes the estimated capital expenditure needed to replace assets reaching end of life in years 4-5, or between 2027 and 2028. The sum of the anticipated capital needs is \$1,232,668. The specific assets that will reach end of life in this period are listed in Appendix A.

SUBSYSTEM	Years 4-5	Percent
A10 - Foundations	\$0	0%
B10 - Superstructure	\$0	0%
B20 - Exterior Enclosure	\$619,434	50%
B30 - Roofing	\$0	0%
C10 - Int. Construction	\$13,112	1%
C20 - Stairs	\$0	0%
C30 - Interior Finishes	\$170,222	14%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$0	0%
D30 - HVAC	\$429,899	35%
D40 - Fire Protection	\$0	0%
D50 - Electrical	\$0	0%
E10 - Equipment	\$0	0%
G20 - Site Improvements	\$0	0%
G40 - Site Electrical	\$0	0%

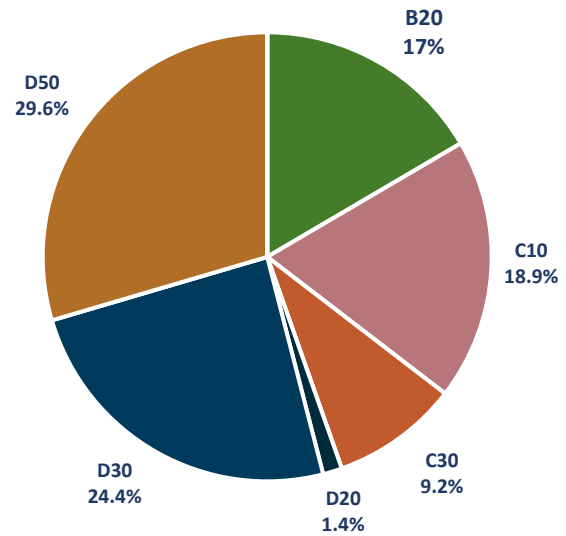


Condition Assessment

10-YEAR PLAN BREAKDOWN

The ten-year plan includes the estimated capital expenditure needed to replace assets reaching end of life in years 6-10, or between 2029 and 2033. The sum of the anticipated capital needs is \$2,688,408. The specific assets that will reach end of life in this period are listed in Appendix A.

SUBSYSTEM	Years 6-10	Percent
A10 - Foundations	\$0	0%
B10 - Superstructure	\$0	0%
B20 - Exterior Enclosure	\$444,952	17%
B30 - Roofing	\$0	0%
C10 - Int. Construction	\$507,520	19%
C20 - Stairs	\$0	0%
C30 - Interior Finishes	\$247,104	9%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$36,852	1%
D30 - HVAC	\$657,216	24%
D40 - Fire Protection	\$0	0%
D50 - Electrical	\$794,764	30%
E10 - Equipment	\$0	0%
G20 - Site Improvements	\$0	0%
G40 - Site Electrical	\$0	0%



Condition Assessment

PRIORITY SUMMARY

The summary below assigns a composite Overall Priority Score to the campus as of the assessment date. Priority Scores range from 6 (low priority) to 30 (high priority), and are based on asset condition, operating impact, student impact, energy impact, estimated replacement cost, and observed remaining life.

In addition to the Overall Priority Score, each Subsystem category within the site is assigned a Priority Score. This score can differentiate systems that may need more attention than others, due to condition or impact on occupants or operations. Each Subsystem category includes a general narrative section under the Description column.

Future Capital Plan

The Subsystem scores are color coded to reflect the level of priority: ≤ 12 = Green, 12.1-23.9 = Yellow, ≥ 24 = Red. Higher priority scores indicate that a system should be considered for maintenance or capital improvements before other systems with lower scores. The rating scale for Priority Score is visualized below.

LOW	MEDIUM-LOW	MEDIUM	MEDIUM-HIGH	HIGH
6	12	18	24	30

Condition Assessment

PRIORITY SCORE SUMMARY - PUTNAM ES

		PUTNAM ES	
		BUILDING TYPE:	Elementary School
		YEAR BUILT:	1956
		GROSS AREA (SF):	59,101
		DATE ASSESSED:	March 31, 2023
		PRIORITY SCORE:	17.5
SUBSYSTEM:	DESCRIPTION	PRIORITY SCORE	
B20 - Ext. Enclosure	The original building was constructed in 1956. Several major additions and renovations have occurred since initial construction including in 1966, 1986, 1998, 1999, 2001, and 2014. The exterior walls are primarily of brick construction but include composite masonry unit (CMU) construction in the 1997 addition. Windows are mostly of the original steel framed type but also include some 2002 aluminum framed windows. Exterior hollow metal doors are of six different ages of construction dating back to the 1956 construction.	16.6	
B30 - Roofing	Rollod asphalt roofing was replaced in 1997 and is present on the majority of the roof. The 1997 addition roofing is of the EPDM type. The metal flashing was also replaced in 1997. All three of these roofing components will require replacement in approximately three years.	17.2	
C10 - Int. Construction	The interior construction components of the building include 1956 and 1966 brick walls with a ceramic tile veneer. Interior doors were replaced in 1986 and 2001. The interior doors are primarily of the wood and hollow metal type. The majority of interior finishes were also updated in 1997, 2001, and 2014 and include including carpet and VCT flooring, and acoustical tile ceilings.	13.6	
C30 - Interior Finishes		14.8	
D20 - Plumbing	Plumbing assets include three gas-fired water heaters and two circulation pumps. Two 2014-built backflow preventers are also provided. All three GWs and the two associated circulation pumps were replaced in 2019-2022 and are in good condition.	10.0	
D30 - HVAC	The primary HVAC assets include ten 1997-built rooftop units and three 1998-built air handling units. The building is also provided twelve exhaust fans, one cabinet unit heater, (22) duct heating coils, and (3) gas-fired boilers. B-3 dates to 1991, and has an estimated three years of remaining life. Four associated heating pumps vary in age between 1998 and 2016 install. The 22 DHCs are expected to require replacement in approximately 4 years. In 2014 the BAS was upgraded. Expect to replace all ten of the RTUs within two years. [REDACTED]	18.4	
D40 - Fire Suppression	The fire alarm system was replaced in 2014. [REDACTED] The Fire Protection System appears to be well maintained and updated per fire code requirements. No deficiencies were noted with this system.	N/A	
D50 - Electrical	The building includes both 120/208V and 277/480V service. Electrical assets, including panelboards, transformers, and the main switchboard mostly date to 2012 and 2014. The 2012-built main switchboard is expected to require replacement in approximately 29 years. The back-up generator dates to 1998 and is expected to require replacement in three years. Emergency back-up lighting appears to date to 2014. The building's interior lighting system consists primarily of 2014-built fluorescent fixtures. Recommend replacement of the fluorescent lighting fixtures with LED lighting fixtures in approximately 10 years. However, the Gym and East Wing sections of the school are provided LED fixtures that were updated in 2014. The LED exterior lighting wall packs date to the 2014 renovation as well. [REDACTED] The fire alarm and security systems were updated in 2014.	21.3	
E10 - Equipment	The Kitchen area is provided a Walk-In Cooler and a Walk-In Freezer. Both units were replaced in 2016 as well as their associated condensing units.	13.0	

System priority scored from 6 (lowest priority) to 30 (highest priority) based on condition, operating impact, student/teacher impact, energy impact, estimated replacement cost, and observed remaining life. [≤12 = green, 12-24 = yellow, ≥24 = red]

Appendices

A. 3-YEAR PLAN ASSETS LIST

B. 5-YEAR PLAN ASSETS LIST

C.10-YEAR PLAN ASSETS LIST

Appendix A

APPENDIX A: 3-YEAR PLAN ASSETS LIST

The individual assets associated with the 3-Year Plan are shown below, sorted from highest to lowest priority score. The priority score key is shown below for convenience.

Note that these values represent current replacement costs expressed in 2023 dollar amounts and are not adjusted for inflation.

LOW	MEDIUM-LOW	MEDIUM	MEDIUM-HIGH	HIGH
6	12	18	24	30

The asset ID listed for each entry has been assigned during this assessment and reflects the corresponding asset in the FCA workbook.

PUTNAM ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING	REPLACEMENT COST	PRIORITY SCORE
FCAID-470049	AHU-1	D30 - HVAC	1	\$213,300	27
FCAID-470123	Interior Lighting: Fluorescent	D50 - Electrical	3	\$847,960	25
FCAID-470113	RTU-9	D30 - HVAC	2	\$45,410	21
FCAID-470111	RTU-7	D30 - HVAC	2	\$32,740	21
FCAID-470108	RTU-4	D30 - HVAC	2	\$35,380	21
FCAID-470109	RTU-5	D30 - HVAC	2	\$45,410	21
FCAID-470110	RTU-6	D30 - HVAC	2	\$45,410	21
FCAID-470105	RTU-1	D30 - HVAC	2	\$45,410	21
FCAID-470112	RTU-8	D30 - HVAC	2	\$47,000	21
FCAID-470106	RTU-2	D30 - HVAC	2	\$47,000	21
FCAID-470114	RTU-10	D30 - HVAC	2	\$31,160	21
FCAID-470107	RTU-3	D30 - HVAC	2	\$47,000	21
FCAID-470098	Boiler-3	D30 - HVAC	3	\$93,980	21
FCAID-470007	Exterior Doors: Hollow Metal, Double (195	B20 - Exterior Enclosu	1	\$357,120	20
FCAID-470120	Emergency Back-Up Lighting: Fluorescent	D50 - Electrical	2	\$225,170	20
FCAID-470082	EF - AHU-1	D30 - HVAC	2	\$27,120	18
FCAID-470011	Exterior Windows: Steel Framed	B20 - Exterior Enclosu	1	\$38,830	18
FCAID-470014	Roofing: Rolled Asphalt	B30 - Roofing	3	\$345,780	18
FCAID-470118	Back-Up Generator	D50 - Electrical	3	\$51,270	17
FCAID-470102	HWP-2	D30 - HVAC	2	\$11,900	17
FCAID-470001	Exterior Windows: Glass Block	B20 - Exterior Enclosu	1	\$19,420	17
FCAID-470008	Exterior Doors: Hollow Metal, Double (196	B20 - Exterior Enclosu	1	\$59,520	17
FCAID-470101	HWP-1	D30 - HVAC	2	\$11,900	17
FCAID-470034	Interior Flooring Finishes: Carpet	C30 - Interior Finishes	3	\$616,830	17
FCAID-470012	Roofing: EPDM	B30 - Roofing	3	\$136,470	16
FCAID-470084	EF-10	D30 - HVAC	2	\$8,190	16

FCAID-470088	EF-4	D30 - HVAC	2	\$1,260	16
FCAID-470035	Interior Flooring Finishes: Carpet	C30 - Interior Finishes	1	\$3,730	16
FCAID-470085	EF-11	D30 - HVAC	2	\$8,190	16
FCAID-470048	Air Compressor-1	D30 - HVAC	2	\$3,820	15
FCAID-470147	VFD-AHU-1-Supply Fan	D50 - Electrical	1	\$5,840	15
FCAID-470019	Interior Walls: Drywall	C10 - Interior Constr	2	\$8,500	14
FCAID-470020	Interior Walls: Drywall	C10 - Interior Constr	2	\$15,680	14
FCAID-470057	Air Dryer-1	D30 - HVAC	2	\$2,510	14
FCAID-470027	Interior Windows: Metal Framed	C10 - Interior Constr	2	\$13,590	14
FCAID-470117	ATS-1	D50 - Electrical	3	\$4,340	13
FCAID-470038	Interior Flooring: VCT	C30 - Interior Finishes	3	\$33,180	13
FCAID-470013	Roofing: Metal Flashing	B30 - Roofing	3	\$24,680	13
FCAID-470053	AS-1	D30 - HVAC	2	\$9,860	13

Appendix B

APPENDIX B: 5-YEAR PLAN ASSETS LIST

The individual assets associated with the 5-Year Plan are shown below, sorted from highest to lowest priority score. The priority score key is shown below for convenience.

Note that these values represent current replacement costs expressed in 2023 dollar amounts and are not adjusted for inflation.

LOW	MEDIUM-LOW	MEDIUM	MEDIUM-HIGH	HIGH
6	12	18	24	30

The asset ID listed for each entry has been assigned during this assessment and reflects the corresponding asset in the FCA workbook.

PUTNAM ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING LIFE	REPLACEMENT COST	PRIORITY SCORE
FCAID-470009	Exterior Doors: Hollow Metal, Single (1997	B20 - Exterior Enclosu	4	\$178,570	18
FCAID-470010	Exterior Windows: Aluminum Framed	B20 - Exterior Enclosu	4	\$349,470	18
FCAID-470080	Duct Heating Coil HWC-8-1	D30 - HVAC	4	\$34,990	16
FCAID-470061	Duct Heating Coil HWC-10-2	D30 - HVAC	4	\$52,480	16
FCAID-470060	Duct Heating Coil HWC-10-1	D30 - HVAC	4	\$52,480	16
FCAID-470081	Duct Heating Coil HWC-9-1	D30 - HVAC	4	\$24,060	16
FCAID-470078	Duct Heating Coil HWC-7-1	D30 - HVAC	4	\$19,240	15
FCAID-470074	Duct Heating Coil HWC-5-2	D30 - HVAC	4	\$3,300	15
FCAID-470002	Exterior Windows: Glass Block	B20 - Exterior Enclosu	4	\$38,830	15
FCAID-470064	Duct Heating Coil HWC-2-1	D30 - HVAC	4	\$8,900	15
FCAID-470076	Duct Heating Coil HWC-5-4	D30 - HVAC	4	\$8,900	15
FCAID-470065	Duct Heating Coil HWC-2-2	D30 - HVAC	4	\$7,270	15
FCAID-470063	Duct Heating Coil HWC-1-2	D30 - HVAC	4	\$8,900	15
FCAID-470066	Duct Heating Coil HWC-3-1	D30 - HVAC	4	\$7,270	15
FCAID-470073	Duct Heating Coil HWC-5-1	D30 - HVAC	4	\$8,900	15
FCAID-470067	Duct Heating Coil HWC-3-2	D30 - HVAC	4	\$8,900	15
FCAID-470075	Duct Heating Coil HWC-5-3	D30 - HVAC	4	\$3,300	15
FCAID-470062	Duct Heating Coil HWC-1-1	D30 - HVAC	4	\$5,640	15
FCAID-470077	Duct Heating Coil HWC-6-1	D30 - HVAC	4	\$8,900	15
FCAID-470069	Duct Heating Coil HWC-4-2	D30 - HVAC	4	\$4,700	15
FCAID-470079	Duct Heating Coil HWC-7-2	D30 - HVAC	4	\$4,700	15
FCAID-470070	Duct Heating Coil HWC-4-3	D30 - HVAC	4	\$5,640	15
FCAID-470071	Duct Heating Coil HWC-4-4	D30 - HVAC	4	\$3,300	15
FCAID-470068	Duct Heating Coil HWC-4-1	D30 - HVAC	4	\$7,270	15
FCAID-470072	Duct Heating Coil HWC-4-5	D30 - HVAC	4	\$3,300	15

FCAID-470056	CUH-1	D30 - HVAC	4	\$6,360	14
FCAID-470091	EF-7	D30 - HVAC	5	\$27,120	14
FCAID-470090	EF-6	D30 - HVAC	5	\$16,270	13
FCAID-470087	EF-3	D30 - HVAC	5	\$1,260	13
FCAID-470092	EF-8	D30 - HVAC	5	\$16,270	13
FCAID-470031	Interior Ceiling Finishes: Acoustic Tile	C30 - Interior Finishes	5	\$149,110	13
FCAID-470093	EF-9	D30 - HVAC	5	\$1,260	13
FCAID-470086	EF-2	D30 - HVAC	5	\$6,210	13
FCAID-470089	EF-5	D30 - HVAC	5	\$6,210	13
FCAID-470115	GUH-1	D30 - HVAC	5	\$3,520	12
FCAID-470083	EF-1	D30 - HVAC	5	\$6,210	12
FCAID-470116	UH-1	D30 - HVAC	5	\$3,520	12
FCAID-470033	Interior Ceiling Finishes: Acoustic Tile	C30 - Interior Finishes	5	\$2,130	11
FCAID-470028	Interior Windows: Metal Framed	C10 - Interior Construc	5	\$11,650	11
FCAID-470095	ET-2	D30 - HVAC	5	\$4,110	10

Appendix C

APPENDIX C: 10-YEAR PLAN ASSETS LIST

The individual assets associated with the 10-Year Plan are shown below, sorted from highest to lowest priority score. The priority score key is shown below for convenience.

Note that these values represent current replacement costs expressed in 2023 dollar amounts and are not adjusted for inflation.

LOW	MEDIUM-LOW	MEDIUM	MEDIUM-HIGH	HIGH
6	12	18	24	30

The asset ID listed for each entry has been assigned during this assessment and reflects the corresponding asset in the FCA workbook.

PUTNAM ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING LIFE	REPLACEMENT COST	PRIORITY SCORE
FCAID-470122	Fire Alarm System	D50 - Electrical	6	\$460,400	22
FCAID-470096	Boiler-1	D30 - HVAC	10	\$127,750	20
FCAID-470051	AHU-3	D30 - HVAC	7	\$117,740	20
FCAID-470140	Security System	D50 - Electrical	6	\$225,170	20
FCAID-470097	Boiler-2	D30 - HVAC	9	\$93,980	19
FCAID-470052	AHU-4	D30 - HVAC	7	\$77,930	19
FCAID-470050	AHU-2	D30 - HVAC	7	\$71,100	19
FCAID-470015	Interior Walls: CMU	C10 - Interior Constr	7	\$381,200	15
FCAID-470004	Exterior Walls: Brick (1955)	B20 - Exterior Enclosu	7	\$241,120	15
FCAID-470059	CU-2-Walk-In Freezer	D30 - HVAC	8	\$15,080	14
FCAID-470058	CU-1-Walk-In Cooler	D30 - HVAC	8	\$10,050	14
FCAID-470036	Interior Flooring: Ceramic Tile	C30 - Interior Finishes	7	\$78,150	13
FCAID-470005	Exterior Walls: Brick (1966)	B20 - Exterior Enclosu	7	\$113,980	13
FCAID-470037	Interior Finishes: VCT	C30 - Interior Finishes	6	\$132,660	13
FCAID-470047	GWH-3	D20 - Plumbing	6	\$9,650	13
FCAID-470024	Interior Walls: Brick	C10 - Interior Constr	7	\$43,840	12
FCAID-470006	Exterior Walls: Brick (1997)	B20 - Exterior Enclosu	7	\$17,540	11
FCAID-470045	GWH-1	D20 - Plumbing	9	\$10,610	10
FCAID-470099	Glycol Feeder-1	D30 - HVAC	6	\$1,780	10
FCAID-470054	AS-2	D30 - HVAC	6	\$6,390	10
FCAID-470046	GWH-2	D20 - Plumbing	9	\$9,650	10
FCAID-470094	ET-1	D30 - HVAC	10	\$9,630	8