

LIVERMORE
ELEMENTARY
SCHOOL

POUDRE SCHOOL DISTRICT LIVERMORE ELEMENTARY SCHOOL

FACILITY CONDITION ASSESSMENT

LIVERMORE, CO

OCTOBER 2023



Together, Building a Thriving Planet

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Contacts

Key Contact Information

McKinstry Contacts

Devin Boyce
Program Manager, Facility Condition Assessments
720.408.4573
devinb@mckinstry.com

Roger Noonan
Senior Facility Assessment Consultant
970.531.1527
rogern@mckinstry.com

Josh Phillips
Facility Assessment Consultant
719.480.1372
joshph@mckinstry.com

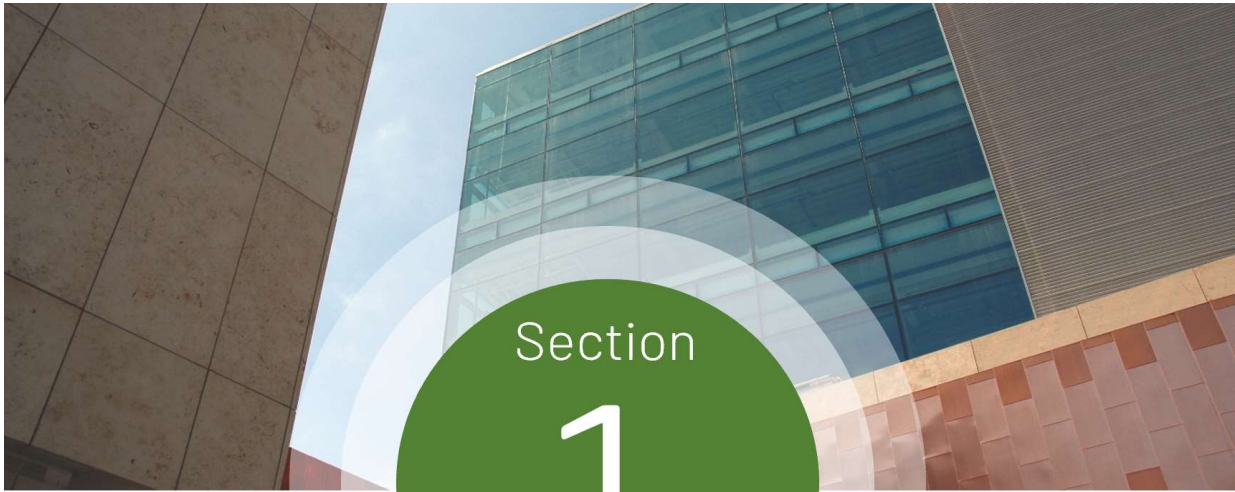
Tracey Cousins
Strategic Account Manager
720.445.7608
traceyc@mckinstry.com

Jaime Villarino-Eilenberger
Project Manager - Technical Services
949.933.7996
jaimev@mckinstry.com

Poudre School District Contacts

Trudy Trimbath
Energy and Sustainability Manager
970.490.3502
ttrimbath@psdschools.org

Jessie Ericson
Administrative Assistant - Operations
970.490.3080
jericson@psdschools.org



Section

1

Executive Summary

Executive Summary

Project Goals

The contents of this report present the results of the Facility Condition Assessment (FCA) performed at Livermore ES within the Poudre School District (PSD) on July 26, 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
LIVERMORE ES	65,365	1953
TOTAL	65,365	

Facility Summary

Livermore ES

Livermore ES is located at 360 Red Feather Lakes Rd., Livermore, CO 80536. This 65,365 SF facility consists of two levels and was initially constructed in 1953. The equity index for this school is 0.63.



Livermore ES

Executive Summary

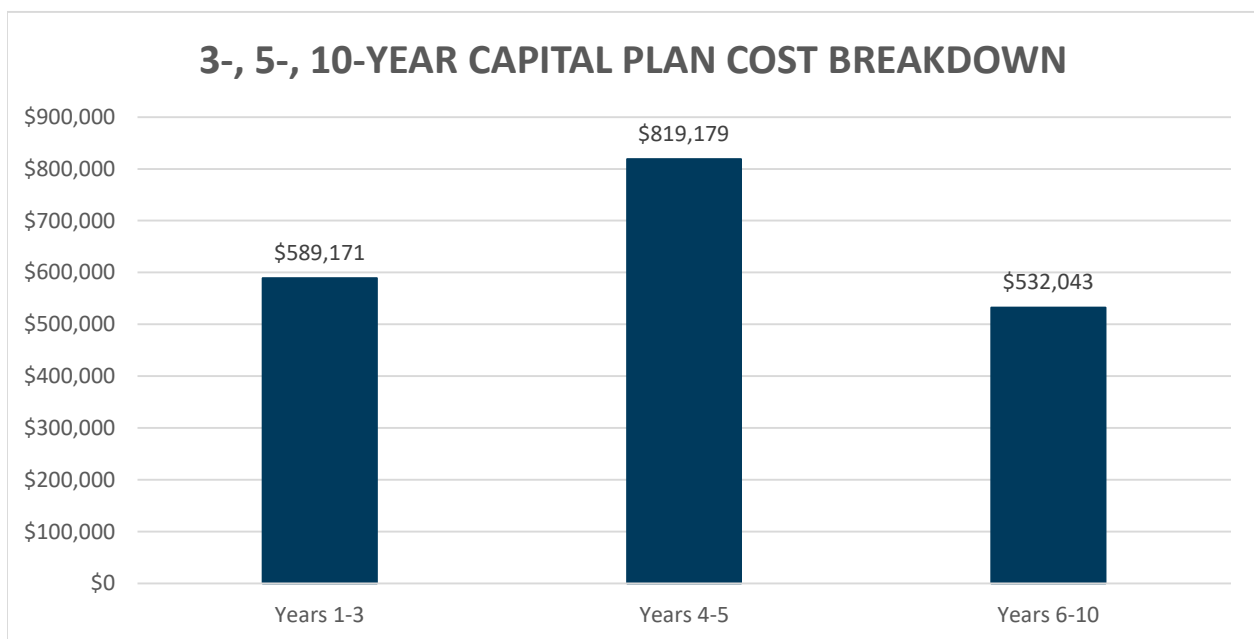
Assessment Summary

This section summarizes the building systems at the facility and describes the general condition observed based on the assessment performed on July 26, 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.



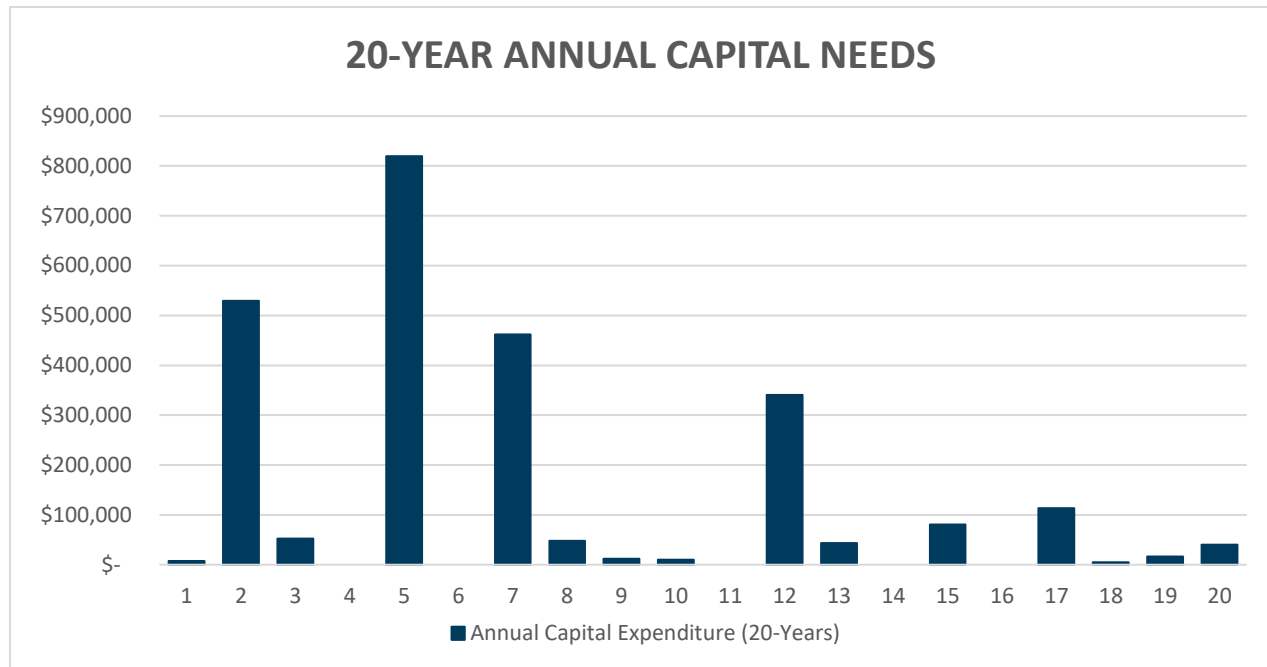
3-, 5-, 10-Year Capital Plan Cost Breakdown

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	\$215,200	\$94,294	\$0	\$0
B30 - Roofing	\$509,034	\$0	\$0	\$0
C10 - Int. Construction	\$0	\$156,051	\$0	\$0
C20 - Stairs	\$0	\$10,086	\$0	\$0
C30 - Interior Finishes	\$204,266	\$119,083	\$172,628	\$0
D10 - Conveying	\$0	\$0	\$0	\$0
D20 - Plumbing	\$10,861	\$26,638	\$58,864	\$16,428
D30 - HVAC	\$235,839	\$71,251	\$44,337	\$44,966
D40 - Fire Suppression	\$0	\$0	\$0	\$0
D50 - Electrical	\$233,150	\$54,640	\$189,311	\$113,421
E10 - Equipment	\$0	\$0	\$0	\$0
Total:	\$1,408,350	\$532,043	\$465,139	\$174,816

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 Livermore ES is 0.63.

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 Livermore 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 1953, and received additions in 1980 and 2000. Renovations were made in 2001 and 2015. Exteriors of the school consist of brick, metal clapboard, and stucco. Vinyl windows were installed in 2000. Some 1980 doors remain.

Roofing

The roofing was upgraded to EPDM in 2000 and has an estimated 5 years of remaining life. original 1985 building roof was replaced with EPDM in 2013. Gutters and downspouts were also replaced in 2000.

Interior Construction and Finishes

Interior walls are primarily of original plaster and later sections of drywall and CMU. Many of the interior finish components were updated in 2000. However, 1953 original interior doors, ceramic tile flooring, and plaster ceilings and walls remain. Carpeting is expected to require replacement within two years.

Conveyance

The building is provided a second story in the original 1953 school. [REDACTED]
[REDACTED]

Electrical and Lighting

The building includes both 120/208V and 277/480V service. Electrical assets, including panelboards and transformers vary in age. Emergency back-up lighting dates to 2000, and all interior fluorescent lighting was updated in 2000. Recommend updating to LED fixtures within two years. Six exterior incandescent wall packs date to 1993. The security system and fire alarm system were replaced in 2020. Panelboard LP dates to 1980 but will not require replacement for 5 more years.

HVAC Systems

HVAC assets include two 2000-built propane-fired furnaces, two exhaust fans, one condensing unit, and (3) 1993-built AHUs [REDACTED]
[REDACTED] There are two propane-fired boilers serving the space. Though Boiler-1 was replaced in 2015, Boiler-2 dates to 1983 and is 5 years past expected life. The BAS was replaced in 2020 and is in good condition.

Plumbing

Numerous plumbing assets are provided in this building as there is a domestic well water system. There are two BFPs, two propane-fired water heaters, a pressurization pump, and (3) storage tanks. Well water system components date to 2011-2019. GWH-1 will require replacement in 5 years.

Fire Suppression

The fire alarm system was replaced in 2020 and is consistent with current fire code requirements. Anticipate replacement of the fire alarm system within 12 years.

Equipment

No Equipment assets were noted at the time of inspection.

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.

Livermore ES

Replace AHU-1, AHU-2, & AHU-3

AHU-1, AHU-2, and AHU-3 are 1993-built AHUs in poor condition. These are Magic Aire Fan Coil Units labeled as AHUs. These include pneumatic valves and dampers and are 5 years past expected life. [REDACTED]



The following assets are included within this measure:

FCAID-350044 through FCAID-350046



Priority Level:	2
Estimated Cost:	\$117,320
Remaining Life:	2 years

Condition Assessment

Replace Boiler-2

Though Boiler-1 was replaced in 2015, Boiler-2 dates to 1983 and is 5 years past expected life. [REDACTED]

The following assets are included within this measure:

FCAID-350055



Priority Level: 2
Estimated Cost: \$37,000
Remaining Life: 2 years

Replace (6) Incandescent Exterior Wall Packs

Six exterior incandescent wall packs date to 1993 and are 10 years past expected life. Recommend upgrading to LED fixtures within two years.

The following assets are included within this measure:

FCAID-350064



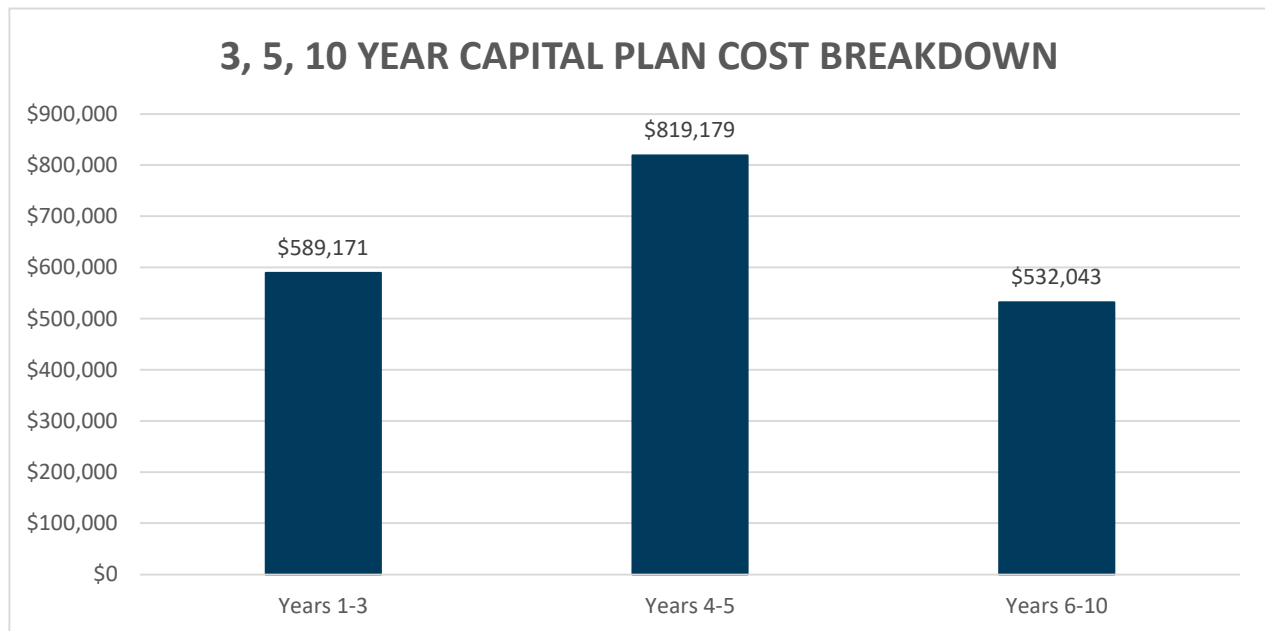
Priority Level: 2
Estimated Cost: \$3,640
Remaining Life: 1 year

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.

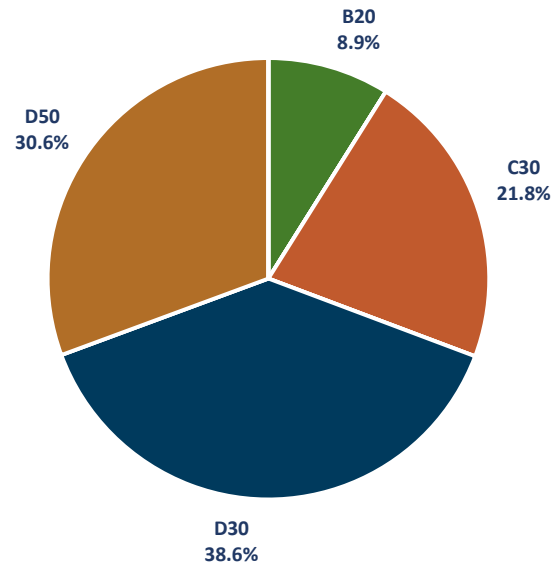
REPLACEMENT PERIOD	ASSET QUANTITY	CUMULATIVE REPLACEMENT COST
3-Year Plan	12	\$589,171
5-Year Plan	9	\$819,179
10-Year Plan	27	\$532,043
Total	48	\$1,940,393

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 \$589,171. The specific assets that will reach end of life in this period are listed in Appendix A.

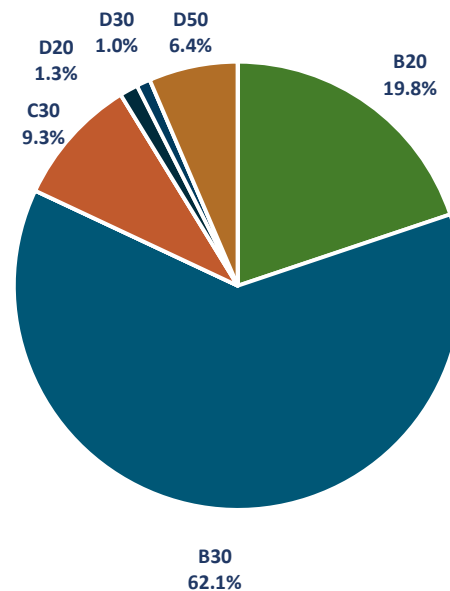
SUBSYSTEM	Years 1-3	Percent
A10 - Foundations	\$0	0%
B10 - Superstructure	\$0	0%
B20 - Exterior Enclosure	\$52,621	9%
B30 - Roofing	\$0	0%
C10 - Int. Construction	\$0	0%
C20 - Stairs	\$0	0%
C30 - Interior Finishes	\$128,451	22%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$0	0%
D30 - HVAC	\$227,691	39%
D40 - Fire Protection	\$0	0%
D50 - Electrical	\$180,409	31%
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 \$819,179. 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	\$162,580	20%
B30 - Roofing	\$509,034	62%
C10 - Int. Construction	\$0	0%
C20 - Stairs	\$0	0%
C30 - Interior Finishes	\$75,814	9%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$10,861	1%
D30 - HVAC	\$8,149	1%
D40 - Fire Protection	\$0	0%
D50 - Electrical	\$52,741	6%
E10 - Equipment	\$0	0%
G20 - Site Improvements	\$0	0%
G40 - Site Electrical	\$0	0%

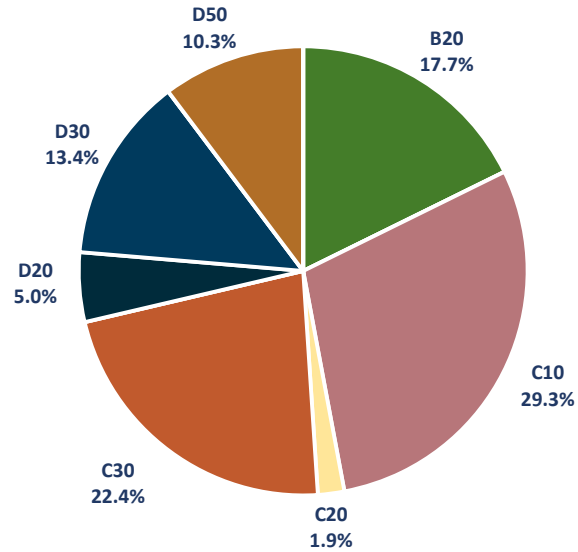


Condition Assessment

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 \$532,043. 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	\$94,294	18%
B30 - Roofing	\$0	0%
C10 - Int. Construction	\$156,051	29%
C20 - Stairs	\$10,086	2%
C30 - Interior Finishes	\$119,083	22%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$26,638	5%
D30 - HVAC	\$71,251	13%
D40 - Fire Protection	\$0	0%
D50 - Electrical	\$54,640	10%
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 - LIVERMORE ES

 LIVERMORE ES BUILDING TYPE: Elementary School YEAR BUILT: 1953 GROSS AREA (SF): 65,365 DATE ASSESSED: July 25, 2023 PRIORITY SCORE: 15.1		
SUBSYSTEM:	DESCRIPTION	PRIORITY SCORE
B20 - Ext. Enclosure	The original building was constructed in 1953, and received additions in 1980 and 2000. Renovations were made in 2001 and 2015. Exteriors of the school consist of brick, metal clapboard, and stucco. Vinyl windows were installed in 2000. Some 1980 doors remain.	11.8
B30 - Roofing	The roofing was upgraded to EPDM in 2000 and has an estimated 5 years of remaining life. original 1985 building roof was replaced with EPDM in 2013. Gutters and downspouts were also replaced in 2000.	17.0
C10 - Int. Construction	Interior walls are primarily of original plaster and later sections of drywall and CMU. Many of the interior finish components were updated in 2000. However, 1953 original interior doors, ceramic tile flooring, and plaster ceilings and walls remain. Carpeting is expected to require replacement within two years.	12.4
C30 - Interior Finishes		14.1
D20 - Plumbing	Numerous plumbing assets are provided in this building as there is a domestic well water system. There are two BFPs, two propane-fired water heaters, a pressurization pump, and (3) storage tanks. Well water system components date to 2011-2019. GWH-1 will require replacement in 5 years.	10.7
D30 - HVAC	HVAC assets include two 2000-built propane-fired furnaces, two exhaust fans, one condensing unit, and (3) 1993-built AHUs. There are two propane-fired boilers serving the space. Though Boiler-1 was replaced in 2015, Boiler-2 dates to 1983 and is 5 years past expected life. The BAS was replaced in 2020 and is in good condition.	16.0
D40 - Fire Suppression	The fire alarm system was replaced in 2020 and is consistent with current fire code requirements. Anticipate replacement of the fire alarm system within 12 years.	N/A
D50 - Electrical	The building includes both 120/208V and 277/480V service. Electrical assets, including panelboards and transformers vary in age. Emergency back-up lighting dates to 2000, and all interior fluorescent lighting was updated in 2000. Recommend updating to LED fixtures within two years. Six exterior incandescent wall packs date to 1993. The security system and fire alarm system were replaced in 2020. Panelboard LP dates to 1980 but will not require replacement for 5 more years.	20.9
E10 - Equipment	No Equipment assets were noted at the time of inspection.	N/A

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.

LIVERMORE ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING	REPLACEMENT COST	PRIORITY SCORE
FCAID-350067	Interior Lighting: Fluorescent	D50 - Electrical	2	\$171,620	26
FCAID-350044	AHU-1	D30 - HVAC	2	\$42,660	21
FCAID-350045	AHU-2	D30 - HVAC	2	\$32,000	21
FCAID-350055	Boiler-2	D30 - HVAC	2	\$37,000	21
FCAID-350046	AHU-3	D30 - HVAC	2	\$42,660	21
FCAID-350049	CU-1	D30 - HVAC	2	\$20,110	19
FCAID-350015	Interior Flooring: Carpet	C30 - Int. Finishes	2	\$124,710	17
FCAID-350061	BBR-1	D30 - HVAC	2	\$42,920	17
FCAID-350064	Exterior Lighting: Wall Packs, Incandescent	D50 - Electrical	1	\$3,640	17
FCAID-350043	Air Compressor-1	D30 - HVAC	1	\$3,820	16
FCAID-350008	Exterior Doors: Hollow Metal, Single 1980	B20 - Ext. Enclosure	3	\$29,760	14
FCAID-350007	Exterior Doors: Hollow Metal, Double 1980	B20 - Ext. Enclosure	3	\$19,840	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.

LIVERMORE ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING LIFE	REPLACEMENT COST	PRIORITY SCORE
FCAID-350066	Emergency Back-Up Lighting	D50 - Electrical	5	\$43,590	21
FCAID-350011	Roofing: EPDM	B30 - Roofing	5	\$450,260	17
FCAID-350003	Exterior Walls: Brick 1953	B20 - Ext. Enclosure	5	\$144,450	13
FCAID-350012	Roofing: Gutters & Downspouts	B30 - Roofing	5	\$2,010	13
FCAID-350041	GWH-1	D20 - Plumbing	5	\$9,650	13
FCAID-350071	Panel LP	D50 - Electrical	5	\$3,270	13
FCAID-350063	UH-1	D30 - HVAC	5	\$3,220	12
FCAID-350014	Interior Ceilings: Acoustic Tile	C30 - Int. Finishes	5	\$67,360	12
FCAID-350062	GUH-1	D30 - HVAC	5	\$4,020	12

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.

LIVERMORE ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING LIFE	REPLACEMENT COST	PRIORITY SCORE
FCAID-350074	Security System	D50 - Electrical	7	\$45,760	17
FCAID-350029	Interior Doors: Wood, Single 1953	C10 - Int. Construct.	7	\$21,360	15
FCAID-350028	Interior Doors: Wood, Double	C10 - Int. Construct.	7	\$10,680	14
FCAID-350056	Furnace-Classrooms	D30 - HVAC	8	\$13,520	14
FCAID-350010	Exterior Windows: Vinyl, Operable	B20 - Ext. Enclosure	7	\$69,050	14
FCAID-350020	Interior Doors: Hollow Metal, Double	C10 - Int. Construct.	7	\$9,920	14
FCAID-350021	Interior Doors: Hollow Metal, Single	C10 - Int. Construct.	7	\$14,880	14
FCAID-350057	Furnace-Computer Room	D30 - HVAC	8	\$13,520	14
FCAID-350019	Interior Flooring: Sealed Concrete	C30 - Int. Finishes	7	\$25,900	13
FCAID-350050	EF-1	D30 - HVAC	7	\$11,230	13
FCAID-350052	TEF-1	D30 - HVAC	7	\$6,210	13
FCAID-350051	RH-1	D30 - HVAC	7	\$6,210	13
FCAID-350026	Interior Flooring: Ceramic Tile	C30 - Int. Finishes	7	\$7,130	12
FCAID-350035	DHWCP-1	D20 - Plumbing	8	\$4,630	12
FCAID-350009	Exterior Doors: Hollow Metal, Single 2000	B20 - Ext. Enclosure	7	\$9,920	12
FCAID-350025	Interior Walls: Ceramic Tile	C30 - Int. Finishes	7	\$28,760	12
FCAID-350013	Interior Stairwell	C20 - Stairs	10	\$7,730	12
FCAID-350036	Pressurization Pump-1	D20 - Plumbing	8	\$6,690	12
FCAID-350023	Interior Walls: Plaster	C10 - Int. Construct.	7	\$36,470	12
FCAID-350018	Interior Ceilings: Plaster	C10 - Int. Construct.	7	\$22,430	12
FCAID-350016	Interior Ceilings: Drywall	C10 - Int. Construct.	7	\$14,950	11
FCAID-350027	Interior Flooring: Rolled VCT	C30 - Int. Finishes	7	\$18,870	11
FCAID-350042	GWH-2	D20 - Plumbing	9	\$9,650	11
FCAID-350024	Interior Walls: Wood Paneling	C30 - Int. Finishes	7	\$19,070	11
FCAID-350034	GF-1	D30 - HVAC	7	\$1,780	10

FCAID-350047	AS-1	D30 - HVAC	7	\$6,390	10
FCAID-350031	BFP-DCWS-1	D20 - Plumbing	8	\$400	10