

FACILITY CONDITION ASSESSMENT



**BUREAU
VERITAS**

prepared for

**Vermont Agency of Education_FCA Phase Two
1 National Life Drive, Davis 5
Montpelier, VT 05620-2501**



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DATE OF REPORT:

May 18, 2023

ON SITE DATE:

May 3, 2023

**UNION ELEMENTARY SCHOOL - Main Building (PS308-SU009)
1 PARK AVENUE
MONTPELIER , VT 05602**

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1. Executive Summary

Property Overview and Assessment Details

General Information	
Property Type	School
School ID Number	PS308-SU009
Main Address	1 Park Avenue, Montpelier, VT 05602
E911 Address Verification	Zip 05031, Standardized, Fixed abbreviations, Matched Street and city and state, Confirmed entire address
GPS Location (Verified E911)	Main Building 44.25973, -72.5707
Site Developed	1939 Renovated: 1991
Site Area	2.6 acres
Parking Spaces	None
Building Square Footage	60,500 SF (Verified)
Number of Stories	2 above grade
Supervisory Union/ District	Montpelier Roxbury SD
Date(s) of Visit	May 3, 2023

Note: (Verified) in Square Foot signifies that the square footage of the facility has been verified to be accurate.

Significant/Systemic Findings and Deficiencies

Historical Summary

The building was first constructed in 1939 as an elementary school. The building was originally heated by coal but was eventually added to the city steam system with backup fuel oil boilers. In 1991 an addition with new cafeteria and classrooms were added. The district made a strong effort to design the addition with near matching bricks and windows to the rest of the building. In 2019 the landscaping was updated with new pavement and playground design.

Architectural

The building is a solid brick walled and wood floor structured building with an EPDM roof. The exterior brickwork is all original and in good condition with no mortar damage, and only some minor efflorescence around the building. The interior of the building has original Terrazzo and maple strip flooring that has been immaculately maintained. There is a small gym and a beautiful assembly hall original to the building. An accessible entrance was added in 2019 on the east side of the building.

Mechanical, Electrical, Plumbing and Fire (MEPF)

The building is heated off the city steam system and has a backup fuel oil boiler to heat the building when city steam is not running. The hydronic system feeds air handling units for the gym and theater as well as unit ventilators in all classrooms. There are additional hydronic cabinet, baseboard and unit ventilator systems throughout the building. The 91 addition is heated by unit ventilators in classrooms, and airflow in hallways and common areas is provided by aging air handler and make up air units. Supplemental domestic hot water is provided by a heat pump for most of the school and an electric water heater that supplies the kitchen and addition. New BAS and fire alarm/ security systems were installed during COVID.

Site

The site consists of manicured lawns at the front of the building with playgrounds and paved surfaces on the east and rear of the building. The landscaping was refreshed in 2019 by a landscape architecture firm that designed a gorgeous, but not fully functional space. There are around 400 kids at the school, but only about a dozen swings, no basketball court, and only one sports field.

Recommended Additional Studies

The hill south of the school appears to be slumping and could be a landslide risk. Trees on the hill are rotating, and there are what appear to be horizontal tears in the hill that suggest movement. A professional engineer or geoscientist must be retained to analyze the existing condition, provide recommendations and, if necessary, estimate the scope and cost of any required stabilization. The cost of this study and continued monitoring is included in the cost tables. Due to the ambiguity of the required stabilization at the time of this assessment, the cost for any possible subsequent work is not included

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate each building’s Facility Condition Index (FCI), which provides a theoretical objective indication of a building’s overall condition. The FCI is defined as the ratio of the cost of current needs divided by current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.

FCI Ranges and Descriptions	
0 – 5%	In new or well-maintained condition, with little or no visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.

The deficiencies and lifecycle needs identified in this assessment provide the basis for a portfolio-wide capital improvement funding strategy. In addition to the current FCI, extended FCI’s have been developed to provide owners the intelligence needed to plan and budget for the “keep-up costs” for their facilities. As such the 3-year, 5-year, and 10-year FCI’s are calculated by dividing the anticipated needs of those respective time periods by current replacement value. As a final point, the FCI’s ultimately provide more value when used to relatively compare facilities across a portfolio instead of being over-analyzed and scrutinized as stand-alone values. The table below summarizes the individual findings for this FCA:

FCI Analysis			
<i>Replacement Value</i>	<i>Total SF</i>	<i>Cost/SF</i>	
\$15,125,000	60,500	\$250	
Current		\$ 136,300	0.9 %
3-Year		\$ 1,724,000	11.4 %
5-Year		\$ 1,994,300	13.2 %
10-Year		\$ 3,102,700	20.5 %

Campus Level FCI:

The orange line in the graph below forecasts what would happen to the FCI (left Y axis) over time, assuming zero capital expenditures. The capital expenditures allocated for each year (blue bars) are associated with the dollar amounts along the right Y axis. If the school expends the average amount per year to maintain and replace systems, they will not incur the capital debt represented by the gray bars.

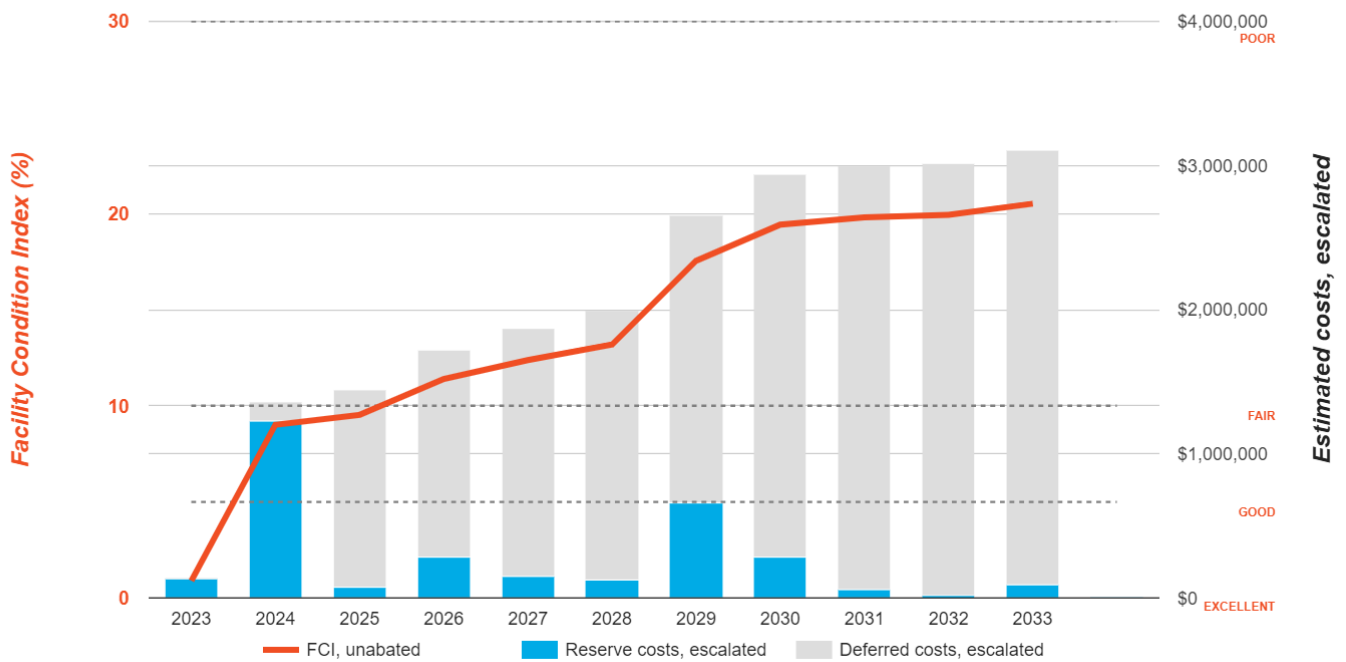
Needs by Year with Unaddressed FCI Over Time

FCI Analysis: UNION ELEMENTARY SCHOOL - Main Building

Replacement Value: \$15,125,000

Inflation Rate: 3.0%

Average Needs per Year: \$282,100



Needs by Year with Unaddressed FCI Over Time (Table)

The above graph is a visual representation of the information contained in the table below.

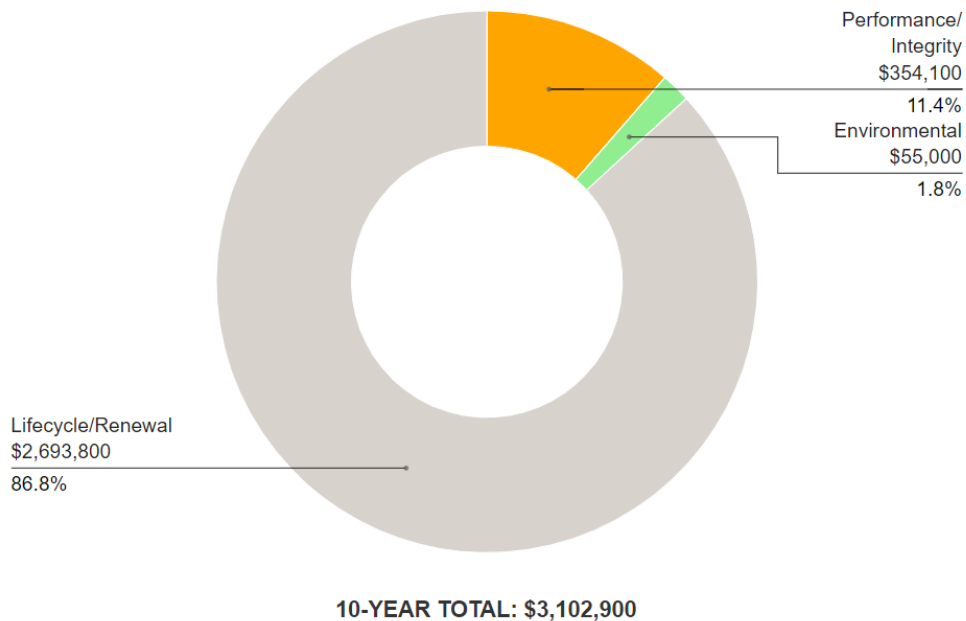
Year	Reserve	Reserve Escalation	Recurrence	Recurrence Escalation	Total Escalation	Deferred	FCI
2023	136,270	0	0	0	0	136,270	0.01
2024	1,191,450	35,744	0	0	35,744	1,363,464	0.09
2025	72,925	4,441	0	0	4,441	1,440,830	0.1
2026	245,100	22,727	14,000	1,298	24,025	1,708,657	0.11
2027	131,775	16,539	0	0	16,539	1,856,971	0.12
2028	105,200	16,756	0	0	16,756	1,978,927	0.13
2029	538,550	104,507	14,000	2,717	107,224	2,621,984	0.17
2030	223,025	51,268	7,425	1,707	52,975	2,896,277	0.19
2031	46,100	12,298	0	0	12,298	2,954,675	0.2
2032	0	0	14,000	4,267	4,267	2,954,675	0.2
2033	65,960	22,685	0	0	22,685	3,043,320	0.2
2034	15,770	6,059	93,000	35,734	41,793	3,065,149	0.2
2035	572,000	243,535	57,425	24,449	267,984	3,880,684	0.26
2036	51,600	24,176	32,700	15,321	39,497	3,956,460	0.26
2037	6,100	3,127	17,650	9,047	12,174	3,965,687	0.26
2038	327,300	182,623	58,270	32,513	215,136	4,475,610	0.3
2039	711,450	430,218	181,000	109,452	539,670	5,617,278	0.37
2040	511,000	333,605	224,250	146,401	480,006	6,461,883	0.43
2041	0	0	26,900	18,895	18,895	6,461,883	0.43
2042	669,700	504,623	900	678	505,301	7,636,206	0.5

Plan Types

Each line item in the cost database is assigned a Plan Type, which is the primary reason or rationale for the recommended replacement, repair, or other corrective action. This is the “why” part of the equation. A cost or line item may commonly have more than one applicable Plan Type; however, only one Plan Type will be assigned based on the “best” fit, typically the one with the greatest significance. Each of the Key Findings identified below are assigned a Plan Type.

Plan Type Descriptions	
Safety	■ An observed or reported unsafe condition that if left unaddressed could result in injury; a system or component that presents potential liability risk.
Performance/Integrity	■ Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses risk to overall system stability.
Accessibility	■ Does not meet ADA, UFAS, and/or other handicap accessibility requirements.
Environmental	■ Improvements to air or water quality, including removal of hazardous materials from the building or site.
Retrofit/Adaptation	■ Components, systems, or spaces recommended for upgrades in in order to meet current standards, facility usage, or client/occupant needs.
Lifecycle/Renewal	■ Any component or system that is not currently deficient or problematic but for which future replacement or repair is anticipated and budgeted.

Plan Type Distribution (by Cost)



Immediate Needs

ID	Location Description	UF Code	Description	Condition	Plan Type	Cost
6081104	1991 addition	C2030	Flooring, Vinyl Tile (VCT), Replace	Poor	Performance/Integrity	\$30,000
6081109	Basement	D2030	Pump, Sump, Replace	Failed	Performance/Integrity	\$4,300
6081140	Roof	D3050	Make-Up Air Unit, MUA or MAU, Replace	Poor	Performance/Integrity	\$48,000
6081182	Site	G2050	Playfield Surfaces, Chips Wood, 6" Depth, Replace	Poor	Performance/Integrity	\$14,000
6085550	Hill behind school	P2030	Engineering Study, Geoengineering, Hill Stability, Study and monitor	NA	Environmental	\$40,000
Total						\$136,300

Key Findings



Exterior Windows, steeple, and Trim in Poor condition.

any painted surface
UNION ELEMENTARY SCHOOL - Main Building Building exterior

Uniformat Code: B2010
Recommendation: **Prep & Paint in 2024**
Priority Score: **89.7**
Plan Type: Performance/Integrity
Cost Estimate: \$48,000

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Window trim and steeple are intricate areas requiring a lot of prep work and lifts. - AssetCALC ID: 6082526



Pump in Failed condition.

Sump
UNION ELEMENTARY SCHOOL - Main Building Basement

Uniformat Code: D2030
Recommendation: **Replace in 2023**
Priority Score: **85.9**
Plan Type: Performance/Integrity
Cost Estimate: \$4,300

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Unit doesn't work - AssetCALC ID: 6081109



Exhaust Fan in Poor condition.

Roof or Wall-Mounted, 24" Damper
UNION ELEMENTARY SCHOOL - Main Building Building Exterior

Uniformat Code: D3060

Recommendation: **Replace in 2024**

Priority Score: **85.8**

Plan Type: Performance/Integrity

Cost Estimate: \$3,000

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Unit is damaged but functional - AssetCALC ID: 6081086



Playfield Surfaces in Poor condition.

Chips Wood, 6" Depth
UNION ELEMENTARY SCHOOL - Main Building Site

Uniformat Code: G2050

Recommendation: **Replace in 2023**

Priority Score: **82.9**

Plan Type: Performance/Integrity

Cost Estimate: \$14,000

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Wood chips appear worn and and should be refreshed. - AssetCALC ID: 6081182



Flooring in Poor condition.

Vinyl Tile (VCT)

UNION ELEMENTARY SCHOOL - Main Building 1991 addition

Uniformat Code: C2030

Recommendation: **Replace in 2023**

Priority Score: **81.9**

Plan Type: Performance/Integrity

Cost Estimate: \$30,000

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areas of VCT are cracked and should be replaced - AssetCALC ID: 6081104



Make-Up Air Unit in Poor condition.

MUA or MAU

UNION ELEMENTARY SCHOOL - Main Building Roof

Uniformat Code: D3050

Recommendation: **Replace in 2023**

Priority Score: **81.9**

Plan Type: Performance/Integrity

Cost Estimate: \$48,000

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Make up air unit or heat exchanger unit is rusting and sounds to not be in optimal condition. Replacement is recommended. - AssetCALC ID: 6081140



Flooring in Poor condition.

Vinyl Tile (VCT), w/ Asbestos Abatement
UNION ELEMENTARY SCHOOL - Main Building Theater

Uniformat Code: C2030

Recommendation: **Replace in 2024**

Priority Score: **81.8**

Plan Type: Performance/Integrity

Cost Estimate: \$16,000

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Asbestos mastic in the theater is scratched and should be replaced before it becomes friable. - AssetCALC ID: 6081074



Fixed Seating in Poor condition.

Auditorium/Theater, Metal Cushioned Standard
UNION ELEMENTARY SCHOOL - Main Building Theater

Uniformat Code: E2010

Recommendation: **Replace in 2024**

Priority Score: **81.8**

Plan Type: Performance/Integrity

Cost Estimate: \$86,500

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Seating is original to the building, and, badly worn. It should be replaced the near future. - AssetCALC ID: 6081171



Signage in Poor condition.

Property, Monument
UNION ELEMENTARY SCHOOL - Main Building Site

Uniformat Code: G2060
Recommendation: **Replace/Install in 2024**
Priority Score: **81.8**
Plan Type: Performance/Integrity
Cost Estimate: \$3,000

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sign is aging and should be replaced - AssetCALC ID: 6081064



Wall Finishes in Poor condition.

any surface
UNION ELEMENTARY SCHOOL - Main Building Throughout Building

Uniformat Code: C2010
Recommendation: **Prep & Paint in 2024**
Priority Score: **81.7**
Plan Type: Performance/Integrity
Cost Estimate: \$45,000

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Paint in some the auditorium and some classrooms is peeling and should be redone - AssetCALC ID: 6082529



Recommended Follow-up Study: Geoengineering, Hill STability

Geoengineering, Hill STability
 UNION ELEMENTARY SCHOOL - Main Building Hill behind school

Uniformat Code: P2030
 Recommendation: **Study and monitor in 2023**
 Priority Score: **72.9**
 Plan Type: Environmental
 Cost Estimate: \$40,000

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The hill behind the school appears to be slumping. Tilted trees, and what appear to be small horizontal cracks or linear inconsistencies on the hill could be observed from the building roof. The hill appears to be sloped at or steeper than the natural angle of repose, and with the added weight of a parking lot and building above may have the potential for failure. The hill should be monitored for movement to prevent loss of life from a catastrophic failure. Study will likely need to be ongoing. - AssetCALC ID: 6085550



Recommended Follow-up Study: Environmental, ESA Phase II

Environmental, ESA Phase II
 UNION ELEMENTARY SCHOOL - Main Building Site

Uniformat Code: P2030
 Recommendation: **Evaluate/Report in 2029**
 Priority Score: **72.4**
 Plan Type: Environmental
 Cost Estimate: \$12,500

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A Phase II ESA should be conducted concurrent to the removal of the UST - AssetCALC ID: 6085551

2. Building and Site Information



System Summary

System	Description	Condition
Structure	Masonry bearing walls with wood roof deck supported by wood joists and poured concrete basement/crawlspace	Good
Facade	Primary Wall Finish : Brick Windows: Wood	Fair
Roof	Flat construction with Single-ply EPDM membrane with copper flashing	Good
Interiors	Walls: Painted gypsum board/lath & plaster, glazed CMU, ceramic tile acoustical panels, FRP Floors: Carpet, VCT, wood strip, terrazzo, coated concrete, stone, unfinished concrete Ceilings: Painted gypsum board, painted lath & plaster and ACT, unfinished/exposed	Fair
Elevators	Passenger: 1 hydraulic car serving all 2 floors	Good
Plumbing	Distribution: Copper supply and cast-iron waste & venting Hot Water: City steam to domestic hot water heat exchangers with supplemental Electric and heat pump Water heaters with integral tanks Fixtures: Toilets, urinals, water fountains and sinks	Fair
HVAC	Central System: Boilers, air handlers feeding wall mounted unit ventilators Non-Central System: None Supplemental components: Ductless split-systems	Fair
Safety and Security	Cameras, card readers, perimeter intrusion detection, security windows and doors, fencing, lighting, traffic gates. Multiple points of auto locking doors, main entry monitored, auto locking doors, internal locking on classroom doors, complete intercom system	Fair
Fire Suppression	Fire extinguishers only	Fair



Electrical	Source & Distribution: Main panel with copper wiring Interior Lighting: LED, linear fluorescent Emergency Power: None	Fair
Fire Alarm	Alarm panel with smoke detectors, alarms, strobes, pull stations, back-up emergency lights, and exit signs	Good
Equipment/Special	Commercial kitchen equipment	Fair
Site Pavement	Asphalt driveway and walkways.	Good
Site Development	Property entrance signage; chain link fencing. Playgrounds, sports field, and play structures Furnished with park benches, picnic tables, trash receptacles	Good
Landscaping & Topography	Significant landscaping features including lawns, trees, bushes, and planters, retaining walls and planned spaces. not present Concrete and Limestone block retaining walls Low to moderate site slopes throughout with severe slopes along the south and east boundaries	Good
Utilities	Municipal water and sewer Local utility-provided electric with city supplied steam heat and fuel oil tanks	Good
Site Lighting	Pole-mounted: LED Building-mounted: LED, and HPS lighting	Good
Ancillary Structures	Union Arena (ice rink) Union Supervisory Building, Bus Barn	Good
Accessibility	Presently it does not appear an accessibility study is needed for this property.	
Key Issues and Findings	<p>rusted entrance doors, leaking roof, sagging roof, suspect interior mold issues, galvanized or leaking supply piping, inadequate ventilation, antiquated HVAC components and infrastructure, building lacks fire suppression, aged electrical infrastructure, aluminum interior wiring, outdated fire alarm system, heavy asphalt wear, severe alligator cracking and potholes, significant sidewalk trip hazards, inadequate lot drainage, lack of property signage, widespread irrigation leaks, bulging retaining walls, inadequate site lighting</p>	

Square Foot Verification

We have reviewed the square footage of 60,500 square feet and it is in the range of square foot calculations as reported by the school district. This confirmation of the square footage of the facility is based on the exterior wall dimensions and number of stories measured from Google Earth and other publicly available internet searches. This measurement may not reflect the actual heated square footage but provides a general size of the heated square feet of the overall building.

PCB Air Indoor Testing

PCB air testing was conducted on 04/17/23 at this building and no results were found to be above the School Action Level (SAL). This information was gathered and verified through the Agency of Natural Resources PCB in Schools website <https://anrweb.vt.gov/DEC/PCBPublic/Home.aspx>.

School Educational Capacity and Programming Space

As part of the FCA report, school administrative staff were asked to conduct a self-assessment of whether their school building meets their space, operational needs and if they have sufficient building capacity and appropriate spaces to deliver educational programming. The school responses to the survey are reported in Appendix D. The respondents indicated that the following areas were inadequate to meet current needs:

A space needs self-assessment was conducted by the school administrative staff which identified space constraints in the following areas:

- Adequate number of classrooms.
- Adequate overall building space.
- Confidential space to maintain FERPA, HIPPA or IEP requirements.
- Administrative offices and/or office space for staff.
- Cafeteria, kitchen and/or gymnasium space.

The Depleted Value Facility Condition Index (FCI) is an estimate of a building's overall amount of consumed system life. The Depleted Value FCI ratings scale indicates the estimated condition of the system. Generally, the higher the Depleted Value FCI, the greater the need to repair or replace a system. Note that the FCI can also be calculated for system groups, building types and other aggregations. The estimated percentage of collective system life left in a building, also referred to as Remaining Useful Life (RUL). The higher the RUL, the newer the system. The sum of Depleted Value FCI and RUL will equal 100%.

Depleted Value Index	
Index Value	51.1%

System Expenditure Forecast						
System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Facade	-	\$1,069,100	\$18,200	\$49,700	\$90,900	\$1,227,900
Roofing	-	-	-	-	\$538,400	\$538,400
Interiors	\$30,000	\$101,000	\$145,500	\$437,400	\$904,900	\$1,618,800
Conveying	-	-	-	-	\$21,200	\$21,200
Plumbing	\$4,300	-	\$1,000	\$3,200	\$1,199,700	\$1,208,200
HVAC	\$48,000	\$3,100	\$11,100	\$428,000	\$420,100	\$910,300
Electrical	-	-	\$15,100	\$62,600	\$537,400	\$615,100
Fire Alarm & Electronic Systems	-	-	\$112,400	-	\$1,332,800	\$1,445,200
Equipment & Furnishings	-	\$120,300	\$165,200	\$36,700	\$131,500	\$453,700
Special Construction & Demo	-	-	-	-	-	-
Site Utilities	-	-	\$69,600	\$8,600	\$39,700	\$117,800
Site Development	\$14,000	\$3,100	\$15,300	\$58,300	\$699,500	\$790,200
Site Pavement	-	\$7,900	-	\$9,100	\$22,900	\$39,900
Follow-up Studies	\$40,000	-	-	\$14,900	-	\$54,900
TOTALS	\$136,300	\$1,304,500	\$553,400	\$1,108,500	\$5,939,000	\$9,041,600

3. Property Space Use and Observed Areas

Areas Observed

The interior spaces were observed to gain a clear understanding of the property's overall condition. Other areas accessed included the site within the property boundaries, the exterior of the property and the roofs.

Key Spaces Not Observed

All key areas of the property were accessible and observed.

4. ADA Accessibility

Generally, Title II of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of “areas of public accommodations” and “public facilities” on the basis of disability. Regardless of their age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

A public entity (i.e. city governments) shall operate each service, program, or activity so that the service, program, or activity, when viewed in its entirety, is readily accessible to and usable by individuals with disabilities.

However, this does not:

1. Necessarily require a public entity to make each of its existing facilities accessible to and usable by individuals with disabilities;
2. Require a public entity to take any action that would threaten or destroy the historic significance of an historic property; or
3. Require a public entity to take any action that it can demonstrate would result in a fundamental alteration in the nature of a service, program, or activity or in undue financial and administrative burdens. In those circumstances where personnel of the public entity believe that the proposed action would fundamentally alter the service, program, or activity or would result in undue financial and administrative burdens, a public entity has the burden of proving that compliance with 35.150(a) of this part would result in such alteration or burdens. The decision that compliance would result in such alteration or burdens must be made by the head of a public entity or his or her designee after considering all resources available for use in the funding and operation of the service, program, or activity, and must be accompanied by a written statement of the reasons for reaching that conclusion. If an action would result in such an alteration or such burdens, a public entity shall take any other action that would not result in such an alteration or such burdens but would nevertheless ensure that individuals with disabilities receive the benefits or services provided by the public entity.

Removal of barriers to accessibility should be addressed from a liability standpoint in order to comply with federal law, but the barriers may or may not be building code violations. The Americans with Disabilities Act Accessibility Guidelines are part of the ADA federal civil rights law pertaining to the disabled and are not a construction code. State and local jurisdictions have adopted the ADA Guidelines or have adopted other standards for accessibility as part of their construction codes.

During the FCA, Bureau Veritas performed a limited high-level accessibility review of the facility non-specific to any local regulations or codes. The scope of the visual observation was limited to the same areas observed while performing the FCA and the categories set forth in the appendix. It is understood by the Client that the limited observations described herein do not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of this particular assessment. A full measured ADA survey would be required to identify any and all specific potential accessibility issues. Additional clarifications of this limited survey:

- This survey was visual in nature and actual measurements were not taken to verify compliance.
- Only a representative sample of areas was observed.
- Two overview photos were taken for each subsection regardless of perceived compliance or non-compliance.
- Itemized costs for individual non-compliant items are not included in the dataset.
- For any “none” boxes checked or reference to “no issues” identified, that alone does not guarantee full compliance

The facility was originally constructed in 1956. The facility was renovated in 1994 and widespread accessibility.

No information about complaints or pending litigation associated with potential accessibility issues was provided during the interview process.

A detailed follow-up accessibility study is included as a recommendation based on the potential that specific ADA violations, not in this scope of services, may exist. Reference the appendix for specific data, photos, and tables or checklists associated with this limited accessibility survey

5. Purpose and Scope

Purpose

Bureau Veritas was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record, which affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives. The physical condition of building systems and related components are typically defined as being in one of five condition ratings. For the purposes of this report, the following definitions are used:

Condition Ratings	
Excellent	New or very close to new; component or system typically has been installed within the past year, sound and performing its function. Eventual repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Good	Satisfactory as-is. Component or system is sound and performing its function, typically within the first third of its lifecycle. However, it may show minor signs of normal wear and tear. Repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Fair	Showing signs of wear and use but still satisfactory as-is, typically near the median of its estimated useful life. Component or system is performing adequately at this time but may exhibit some signs of wear, deferred maintenance, or evidence of previous repairs. Repair or replacement will be required due to the component or system's condition and/or its estimated remaining useful life.
Poor	Component or system is significantly aged, flawed, functioning intermittently or unreliably; displays obvious signs of deferred maintenance; shows evidence of previous repair or workmanship not in compliance with commonly accepted standards; has become obsolete; or exhibits an inherent deficiency. The present condition could contribute to or cause the deterioration of contiguous elements or systems. Either full component replacement is needed, or repairs are required to restore to good condition, prevent premature failure, and/or prolong useful life.
Failed	Component or system has ceased functioning or performing as intended. Replacement, repair, or other significant corrective action is recommended or required.
Not Applicable	Assigning a condition does not apply or make logical sense, most commonly due to the item in question not being present.

Scope

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general-built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate Costs and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a high-level categorical general statement regarding the subject Property's compliance to Title III of the Americans with Disabilities Act. This will not constitute a full ADA survey but will help identify exposure to issues and the need for further review.
- Obtain background and historical information about the facility from a building engineer, property manager, maintenance staff, or other knowledgeable source. The preferred methodology is to have the client representative or building occupant complete a Pre-Survey Questionnaire (PSQ) in advance of the site visit. Common alternatives include a verbal interview just prior to or during the walk-through portion of the assessment.
- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior spaces/units, including vacant spaces/units, to gain a clear understanding of the property's overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and the significant mechanical, electrical and elevator equipment rooms.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Provide an Executive Summary at the beginning of this report, which highlights key findings and includes a Facility Condition Index as a basis for comparing the relative conditions of the buildings within the portfolio.

6. Opinions of Probable Costs

Cost estimates are attached throughout this report, with the Replacement Reserves in the appendix.

These estimates are based on Invoice or Bid Document/s provided either by the Owner/facility and construction costs developed by construction resources such as *R.S. Means*, *CBRE Whitestone*, and *Marshall & Swift*, Bureau Veritas's experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing or bundling of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, use of subcontractors, and whether competitive pricing is solicited, etc. Certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the FCA.

Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, Bureau Veritas opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its *effective age*, whether explicitly or implicitly stated. Projections of Remaining Useful Life (RUL) are based primarily on age and condition with the presumption of continued use and maintenance of the Property similar to the observed and reported past use and maintenance practices, in conjunction with the professional judgment of Bureau Veritas's assessors. Significant changes in occupants and/or usage may affect the service life of some systems or components.

Where quantities could not be or were not derived from an actual construction document take-off or facility walk-through, and/or where systemic costs are more applicable or provide more intrinsic value, budgetary square foot and gross square foot costs are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

Definitions

Immediate Needs

Immediate Needs are line items that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) failed or imminent failure of mission critical building systems or components, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

For database and reporting purposes the line items with RUL=0, and commonly associated with *Safety* or *Performance/Integrity* Plan Types, are considered Immediate Needs.

Replacement Reserves

Cost line items traditionally called Replacement Reserves (equivalently referred to as Lifecycle/Renewals) are for recurring probable renewals or expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves generally exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, Bureau Veritas's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

Bureau Veritas's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system's or component's respective replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined as Immediate Needs.

For the purposes of 'bucketizing' the System Expenditure Forecasts in this report, the Replacement Reserves have been subdivided and grouped as follows: Short Term (years 1-3), Near Term (years 4-5), Medium Term (years 6-10), and Long Term (years 11-20).

Key Findings

In an effort to highlight the most significant cost items and not be overwhelmed by the Replacement Reserves report in its totality, a subsection of Key Findings is included within the Executive Summary section of this report. Key Findings typically include repairs or replacements of deficient items within the first five-year window, as well as the most significant high-dollar line items that fall anywhere within the ten-year term. Note that while there is some subjectivity associated with identifying the Key Findings, the Immediate Needs are always included as a subset.

Exceedingly Aged

A common scenario encountered during the assessment process, and a frequent source of debate, occurs when classifying and describing "very old" systems or components that are still functioning adequately and do not appear nor were reported to be in any way deficient. To help provide some additional intelligence on these items, such components will be tagged in the database as Exceedingly Aged. This designation will be reserved for mechanical or electrical systems or components that have aged well beyond their industry standard lifecycles, typically at least 15 years beyond and/or twice their Estimated Useful Life (EUL). In tandem with this designation, these items will be assigned a Remaining Useful Life (RUL) not less than two years but not greater than 1/3 of their standard EUL. As such the recommended replacement time for these components will reside outside the typical Short-Term window but will not be pushed 'irresponsibly' (too far) into the future.

7. STEM/STEAM Assessment

STEM and STEAM education is an integrated curriculum that is driven by exploratory project-based learning and student-centered development of ideas and solutions. BV has evaluated the facility for the existence of spaces and systems to provide STEM/STEAM education based on input from the point of contact for the school. The below table identifies the required standards and to what degree the requirements have been met for the facility.

STEM/STEAM Evaluations				
Property Name	STEM/STEAM Suitability Score	Project Number	School Type	Square Footage
Union Elementary School - Main Building	5%	158982.22R000-340.379	Elementary	60,500

Suitability Classification	Scale
Compares Poorly	Score 0 - 25
Compares Marginally	Score 25-50
Compares Fairly	Score 50-75
Compares Well	Score 75 - 100

Score Value	Score Impact
1- Meets	100%
2- Partial	50%
3- Missing	0%

Details of the STEM/STEAM evaluation are included in the appendix of this report. Reference this appendix for specific data associated with this limited survey.

8. Energy Audit

The purpose of this Energy Audit is to provide Union Elementary School with a baseline of energy usage, the relative energy efficiency of the facility, and specific recommendations for Energy Conservation Measures. Information obtained from these analyses may be used to support a future application to an Energy Conservation Program, Federal and Utility grants towards energy conservation, as well as support performance contracting, justify a municipal bond-funded improvement program, or as a basis for replacement of equipment or systems.

The energy audit consisted of an on-site visual assessment to determine current conditions, itemize the energy consuming equipment (i.e. Boilers, Make-Up Air Units, DWH equipment); review lighting systems both exterior and interior; and review efficiency of all such equipment. The study also included interviews and consultation with operational and maintenance personnel. The following is a summary of the tasks and reporting that make up the Energy Audit portion of the report.

The following is a summary of the tasks and reporting that make up the Energy Audit portion of the report.

Energy and Water Using Equipment

- Bureau Veritas has surveyed the common areas, offices, maintenance facilities and mechanical rooms to document utility-related equipment, including heating systems, cooling systems, air handling systems and lighting systems.

Building Envelope

- Bureau Veritas has reviewed the characteristics and conditions of the building envelope, checking insulation values and conditions. This review also includes an inspection of the condition of walls, windows, doors, roof areas, insulation and special use areas.

Recommendations for Energy Savings Opportunities

- Based on the information gathered during the on-site assessment, the utility rates, as well as recent consumption data and engineering analysis, Bureau Veritas has identified opportunities to save energy and provide probable construction costs, projected energy/utility savings and provide a simple payback analysis.

Analysis of Energy Consumption

- Based on the information gathered during the on-site assessment, Bureau Veritas has conducted an analysis of the energy usage of all equipment, and identified which equipment is using the most energy and what equipment upgrades may be necessary. As a result, equipment upgrades, or replacements are identified that may provide a reasonable return on the investment and improve maintenance reliability.

Energy Audit Process

- Interviewing staff and review plans and past upgrades
- Performing an energy audit for each use type
- Performing a preliminary evaluation of the utility system
- Analyzing findings, utilizing ECM cost-benefit worksheets
- Making preliminary recommendations for system energy improvements and measures
- Estimating initial cost and changes in operating and maintenance costs based on implementation of energy efficiency measures
- Ranking recommended cost measures, based on the criticality of the project and the largest payback

9. Historical Energy and Water Performance Metrics

Utility Data Tabulation Methodology

Establishing the energy baseline begins with an analysis of the utility cost and consumption of the facility. Utilizing the historical energy data and local weather information, we evaluate the existing utility consumption and assign it to the various end-uses throughout the buildings. The Historical Data Analysis breaks down utilities by consumption, cost and annual profile.

This data is analyzed using standard engineering assumptions and practices. The analysis serves the following functions:

- Allows our engineers to benchmark the energy and water consumption of the facilities against consumption of efficient buildings of similar construction, use and occupancy.
- Generates the historical and current unit costs for energy and water
- Provides an indication of how well changes in energy consumption correlate to changes in weather.
- Reveals potential opportunities for energy consumption and/or cost reduction. For example, the analysis may indicate that there is excessive, simultaneous heating and cooling, which may mean that there is an opportunity to improve the control of the heating and cooling systems.

By performing this analysis and leveraging our experience, our engineers prioritize buildings and pinpoint systems for additional investigation during the site visit, thereby maximizing the benefit of their time spent on-site and minimizing time and effort by the customer’s personnel.

Based upon the utility bills provided, the following energy rates have been calculated and utilized in determining existing and proposed energy costs. Only partial utility data was received by Bureau Veritas from the client at the time of report compilation. As a result, Bureau Veritas has used average utility costs from other VT Agency of Education properties to approximate utility costs for this property for utilities where data was not received. Bureau Veritas will update the report on receipt of the actual data from the client. In addition, the electric data provided by the client consists of net metering usage that was calculated after deducting the export units from import units based on the distribution generation by PV system installed at the property. To estimate the electric costs prior to solar being factored in, an averaged electric utility cost was used.

Utilities Metering at a Glance	
Number of electric meters observed	One
Number of gas meters observed	None
Number of central steam meters observed	One
Number of domestic water meter observed	One

Average Utility Rates		
Electricity	No. 2 Oil	Water & Sewer
Average Rate	Average Rate	Blended Rate
\$0.18 / kWh (est.)	\$2.78 / Gal (est.)	\$16.11 / kGal (est.)



Electricity

Green Mountain Power provides electrical service to the facility.

The consumption pattern for the period under consideration remains relatively constant. The seasonal variation in consumption is primarily attributed to periods when school is out of session, while the static base load primarily consists of domestic water heating, lighting, and appliances. Electric consumption was provided by the client, but pre-solar cost data was not. Based on the 2022 electric usage provided, an estimated average price of \$0.18 per kWh was used to complete the chart below.

The total annual electricity consumption for the 12-month period analyzed is 221,781 kWh for a total pre-solar cost of \$39,921.

Electricity Consumption & Cost Data			
Billing Month	Consumption (kWh)	Unit Cost (per kWh)	Total Cost
January,22	17,520	\$0.18	\$3,154
February,22	20,129	\$0.18	\$3,623
March,22	15,997	\$0.18	\$2,879
April,22	18,890	\$0.18	\$3,400
May,22	18,653	\$0.18	\$3,358
June,22	20,705	\$0.18	\$3,727
July,22	15,789	\$0.18	\$2,842
August,22	14,670	\$0.18	\$2,641
September,22	18,339	\$0.18	\$3,301
October,22	19,226	\$0.18	\$3,461
November,22	22,437	\$0.18	\$4,039
December,22	19,426	\$0.18	\$3,497
TOTAL/AVERAGE	221,781	\$0.18	\$39,921

Propane or Fuel Oil

Champlain Valley Plumbing and Heating provides fuel oil to the facility. The deliveries are made on an as-needed basis. A 10,000 gallon storage tank is located at the facility.

The primary use of fuel oil is for space heating. The consumption pattern for the period under consideration varies seasonally. The seasonal variation in consumption is primarily attributed to the heating loads.

Based on the 2022 fuel oil usage and costs provided, the estimated average price paid during the year was \$2.78 per gallon of fuel oil. The total annual consumption for the 12-month period analyzed is 1,616 gallons for an estimated total cost of \$4,492.

Fuel Oil Consumption & Cost Data			
Delivery Month	Delivery (gallons)	Unit Cost (per gallon)	Total Cost
December,22	1,616	\$2.78	\$4,492
Total	1,616	\$2.78	\$4,492

Water and Sewer

The City of Montpelier satisfies the water and sewer requirements of the facility.

The water consumption pattern most likely remains more or less flat over the 10-month period that school is in session.

Note: No utility data was received by Bureau Veritas from the client at the time of report compilation. As a result, Bureau Veritas has used the utility rate from other properties within the same geographical region having similar construction layout and usage patterns. Bureau Veritas will update the report on receipt of the actual data from the client.

10. Energy Conservation Measures

Bureau Veritas has conducted an Energy Audit on Union Elementary School. The study included a review of the building's construction features, historical energy and water consumption and costs, review of the building envelope, HVAC equipment, heat distribution systems, lighting, and the building's operational and maintenance practices.

Bureau Veritas has evaluated four Energy Conservation Measures (ECMs) for this property. The savings for each measure are calculated using standard engineering methods followed in the industry, and detailed calculations for ECM are provided in Appendix H for reference. A 10% discount in energy savings was applied to account for the interactive effects amongst the ECMs. In addition to the consideration of the interactive effects, Bureau Veritas has applied a 15% contingency to the implementation costs to account for potential cost overruns during the implementation of the ECMs.

The following table summarizes the recommended ECMs in terms of description, investment cost, energy consumption reduction, and cost savings.

Recommended Non- Renewable Energy Conservation Measures: Financial Impact	
Total Projected Initial ECM Investment	\$213,733
Estimated Annual Cost Savings Related to ECMs	\$27,818
Net Effective ECM Payback	7.68 Years

Key Metrics to Benchmark the Subject Property's Energy Usage Profile

- **Building Site Energy Use Intensity** - The sum of the total site energy use in thousands of Btu per unit of gross building area. Site energy accounts for all energy consumed at the building location only not the energy consumed during generation and transmission of the energy to the site.
- **Building Source Energy Use Intensity** – The sum of the total source energy use in thousands of Btu per unit of gross building area. Source energy is the energy consumed during generation and transmission in supplying the energy to your site.
- **Building Cost Intensity** - This metric is the sum of all energy use costs in dollars per unit of gross building area.
- **Greenhouse Gas Emissions** - Although there are numerous gases that are classified as contributors to the total for Greenhouse Emissions, the scope of this energy audit focuses on carbon dioxide (CO₂). Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement).

Energy Conservation Measures Screening:

Bureau Veritas screens ECMs using the financial methodology below. ECMs which are considered financially viable must meet this criteria

1. Simple Payback Period –The number of years required for the cumulative value of energy or water cost savings less future non-fuel or non-water costs to equal the investment costs of the building energy or water system, without consideration of discount rates. ECMs with a payback period greater than the Expected Useful Life (EUL) of the project are not typically recommended, as the cost of the project will not be recovered during the lifespan of the equipment. These ECMs are recommended for implementation during future system replacement. At that time, replacement may be evaluated based on the premium cost of installing energy efficient equipment.

Union Elementary School

Energy Conservation Measures

Description of ECM		Location	Net Projected Initial Investment (\$)	Estimated Annual Savings #2 Oil (Gal)	Estimated Annual Savings Electricity (kWh)	Estimated Annual Savings Water (KGal)	Total Energy Savings (MMBTU)	Total Green House Gas Savings (MtCO ² /Yr.)	Estimated Utility Cost Savings (\$)	Estimated Annual O&M Savings (\$)	Total Estimated Annual Cost Savings (\$)	Simple Payback (Yrs)	Life Cycle Savings (\$)	Expected Useful Life (EUL) (Yrs)
1	Install Lighting Controls; Install 40x Wall Mounted Occupancy Sensor on LED45 Fixtures	Location: Building interiors at existing LED lighting	\$7,075	0.0	12,960.0	0.0	44.2	3.1	\$2,333	\$0	\$2,333	3.0	\$12,824	10
2	Replace Existing Linear Fluorescent Lamps; Replace 30x F42T8 with F22LED; Replace 30x F42T8 with F22LED	Location: Building interiors	\$5,768	0.0	6,642.0	0.0	22.7	1.6	\$1,196	\$169	\$1,364	4.2	\$10,519	15
3	Replace External Windows; Replace Metal Frame & Single Glazing windows with new double pane windows rated at U-0.31	Location: Building exteriors	\$121,960	8,200.1	0.0	0.0	1,135.7	83.1	\$22,796	\$114	\$22,910	5.3	\$327,090	30
4	Replace Inefficient Heating Plant; Replace (1x) Cast Iron boiler(s) with (1x) 95% efficient Condensing Boiler	Location: Boiler room	\$51,051	1,473.7	0.0	0.0	204.1	14.9	\$4,097	\$205	\$4,302	11.9	\$23,854	25
Totals for no/low cost items			\$0	0.0	0.0	0.0	0.0	0.0	\$0	\$0	\$0	0.0		
Total for capital cost			\$185,855	9,673.8	19,602.0	0.0	1,406.7	102.6	\$30,421	\$488	\$30,909	6.0		
Interactive Savings Discount @10%				-967.4	-1,960.2	0.0	-140.7	-10.3	-\$3,042	-\$49	-\$3,091			
Total Contingency Expenses @ 15%			\$27,878											
Totals for improvements			\$213,733	8,706.4	17,641.8	0.0	1,266.0	92.4	\$27,379	\$439	\$27,818	7.7		

11. Certification

Vermont Agency of Education, Phase Two (the Client) retained Bureau Veritas to perform this Facility Condition Assessment in connection with its continued operation of Union Elementary School - Main Building, 1 Park Avenue, Montpelier, VT 05602, the "Property". It is our understanding that the primary interest of the Client is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager's walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling, or operating of equipment or in-depth studies were performed unless specifically required under the *Purpose and Scope* section of this report. This assessment did not include engineering calculations to determine the adequacy of the Property's original design or existing systems. Although walk-through observations were performed, not all areas may have been observed (see Section 1 for specific details). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

This report has been prepared on behalf of and exclusively for the use of the Client for the purpose stated within the *Purpose and Scope* section of this report. The report, or any excerpt thereof, shall not be used by any party other than the Client or for any other purpose than that specifically stated in our agreement or within the *Purpose and Scope* section of this report without the express written consent of Bureau Veritas.

Any reuse or distribution of this report without such consent shall be at the Client and the recipient's sole risk, without liability to Bureau Veritas.

Prepared by: Bureau Veritas Technical Assessments

12. Appendices

- Appendix A: Photographic Record
- Appendix B: Site Plans
- Appendix C: Stem/Steam Assessment
- Appendix D: School Educational Capacity and Programming Space
- Appendix E: Accessibility Review & Photos
- Appendix F: Component Condition Report
- Appendix G: Replacement Reserves
- Appendix H: Depleted Value Report

Appendix A: Photographic Record

Photographic Overview



1 - FRONT ELEVATION



2 - LEFT ELEVATION



3 - REAR ELEVATION



4 - RIGHT ELEVATION



5 - ENTRANCE STEEPLE FROM ROOF



6 - OVERVIEW OF EXTERIOR WINDOWS

Photographic Overview



7 - BRICK MORTAR JOINTS OVERVIEW



8 - RECENTLY ADDED ACCESSIBLE ENTRANCE



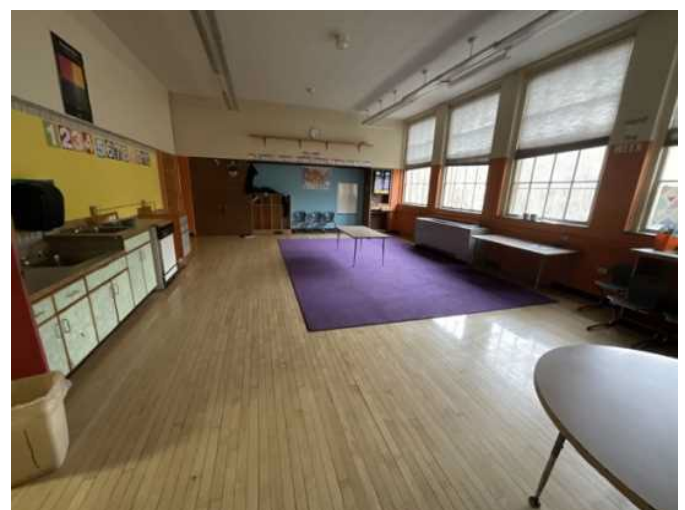
9 - FLAT EPDM ROOF OVERVIEW



10 - ELEVATOR CAB INTERIOR OVERVIEW



11 - OVERVIEW OF HALLWAY SURFACES



12 - ORIGINAL BUILDING CLASSROOM

Photographic Overview



13 - PHYSICAL THERAPY/ MOVEMENT ROOM



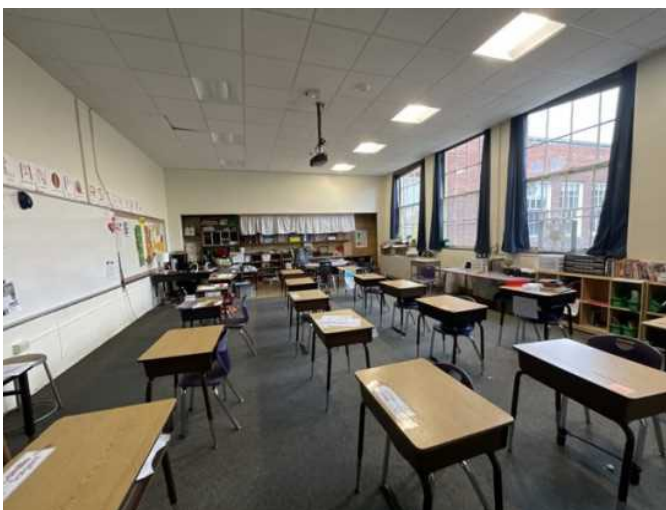
14 - AMPATHEATER FACING THE STAGE



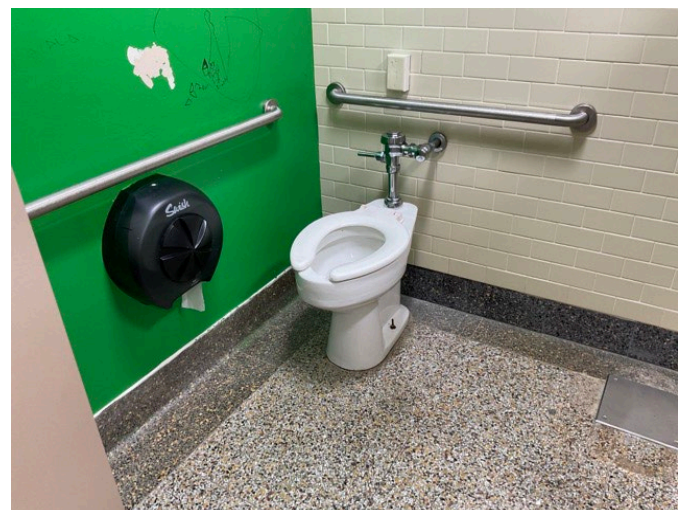
15 - BASEMENT BOILER ROOM OVERVIEW



16 - INDOOR GYM SPACE OVERVIEW

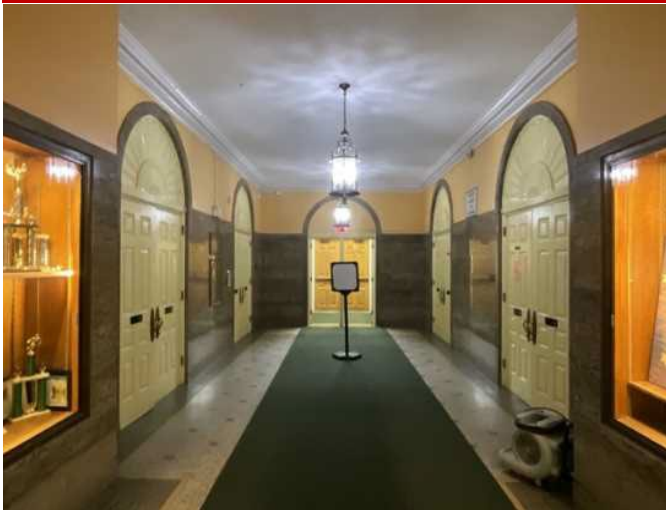


17 - CLASSROOM WITH OLD CARPET



18 - ACCESSIBLE TOILET STALL OVERVIEW

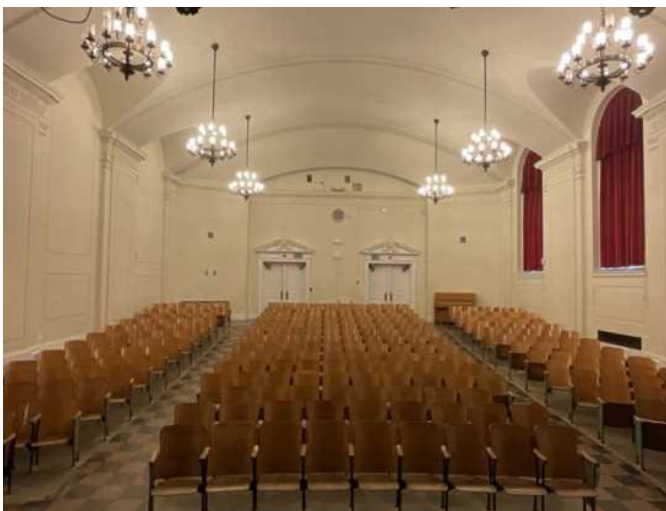
Photographic Overview



19 - ENTRY HALL SPACE PHOTO



20 - WIDE ANGLE KITCHEN OVERVIEW



21 - AMPATHEATRE SEATING AND ARCHITECTURE



22 - ELECTRICAL ROOM WITH STORAGE



23 - TYPICAL CLASSROOM UNIT VENTILATOR



24 - ELEVATOR CONTROLS AND HYDRAULICS

Photographic Overview



25 - CITY STEAM HEAT EXCHANGE



26 - UNION ELEMENTARY SCHOOL - MAIN RI III DING



27 - FUEL OIL BOILER OVERVIEW



28 - DRAINABLE CONCRETE RETAINING WALL



29 - UNDERGROUND STORAGE TANK ACCESS



30 - SPORT FIELD

Photographic Overview



31 - INTERIOR OF PLAY STRUCTURE

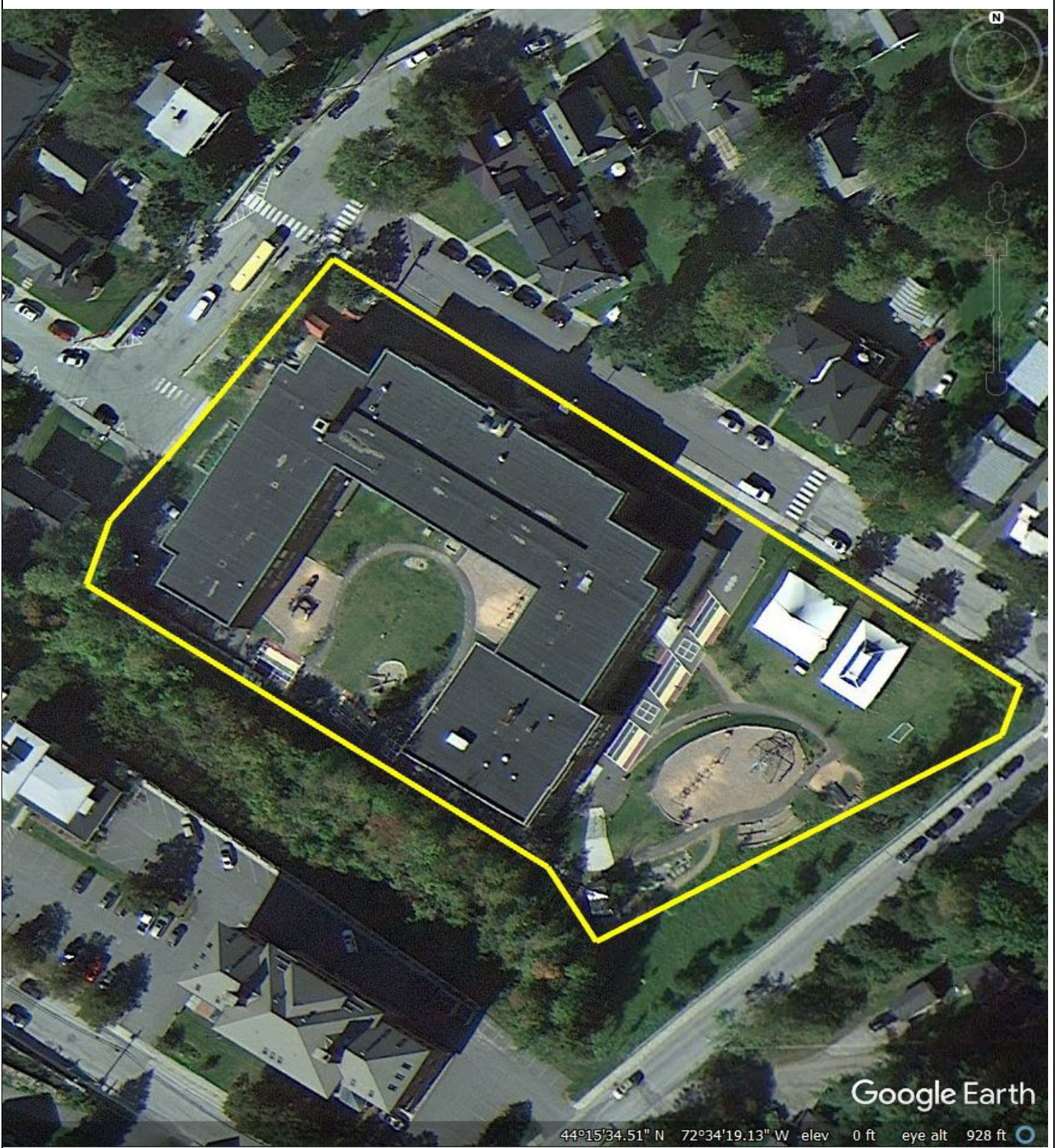


32 - EASTERN PLAYGROUND EQUIPMENT

Appendix B:

Site Plans

Site Plan



Project Name	Project Number
Vermont Agency of Education	158982.22R000-340.379 Union Elementary School
Source	On-Site Date
Google MyMaps	May 3, 2023

Appendix C: Stem/Steam Assessment

STEM/STEAM Evaluation

Property Name	STEM/STEAM Suitability Score	Project Number	School Type	Square Footage
Union Elementary School - Main Building	5%	158982.22R000-340.379	Elementary	60,500

Suitability Classification	Scale
Compares Poorly	Score 0 - 25
Compares Marginally	Score 25-50
Compares Fairly	Score 50-75
Compares Well	Score 75 - 100

Score Value	Score Impact
1- Meets	100%
2- Partial	50%
3- Missing	0%

Rooms to support STEM/STEAM Curriculum - X= Required by School Type

Room Types	Room Present (Yes/No)	Elementary School	Middle School	High School
Does the facility have an Art Room?	Yes	X	X	X
Does the facility have a Science Lab?	No		X	X
Does the facility have a Shop (Machine, Wood, Metal, etc.)?	No		X	X
Does the facility have a Computer Lab?	No	X	X	X
Does the facility have a dedicated STEM/STEAM Room?	No	X	X	X

Overall Compliance					
Questions	Art Room	Science Labs	Shops	Computer Labs	STEM/STEAM
Does the room have chemical resilient perimeter counters with a minimum of two sinks, one being ADA accessible?	2- Partial				
Does the room have electrical outlet distribution along perimeter walls and from the ceiling?	2- Partial				
Does the room have open shelving and lockable storage cabinets?	1- Meets				
Does the room have technology connectivity and an interactive display?	2- Partial				
Does the room have appropriate wet floor finishes?	1- Meets				
Does the room have visual display boards?	1- Meets				
Does the room have Prep/Storage Room?	1- Meets				
Does the room have direct access to the exterior?	3- Missing				
Does the room have the ability to structurally suspend items from the ceiling?	1- Meets				
Does the room have goggle cabinets, fire extinguisher, eye wash and deluge shower?	3- Missing				
Room Type Score	65%	65%	0%	0%	0%

Appendix D: School Educational Capacity and Programming Space

School Educational Capacity and Programming Space

As part of Act 72, AOE has contracted with Bureau Veritas (BVNA) to complete a Facility Condition Assessment (FCA) of very public school building in Vermont. One component of the FCA report will be to identify whether the size and configuration of your current facility is meeting your school's educational and operational needs. In order for us to accurately capture your facility space needs, it is necessary for the AOE and BVNA to receive your input. To complete this brief survey, we recommend that you consult with school building leadership and facilities/custodial staff.

School Name

Union Elementary School

SU/SD

Mount Mansfield Unified Union School District (Supervisory)

Does the school have an adequate number of classrooms to meet student enrollment needs?

Yes

Please provide some explanation and/or context (known needs, barriers, other constraints outside of space, etc.):

Space has changed to a PreK and works well

Does the school have adequate space to accommodate all the current educational programs being offered?

Yes

The space works well

Would the school provide additional programming if available space was provided?

No

Not sure

Does the school have adequate confidential space to provide 1:1 services to students as required to maintain FERPA, HIPPA or IEP requirements?

Yes

Please describe:

As required

Do the school have adequate administrative offices and/or office space for staff?

Yes

Please describe:

Admin staff remained the same

Based on the size of enrollment does the size of the cafeteria, kitchen and gymnasium meet the current and future enrollment needs?

Yes

Please describe:

The space works

Appendix E: Accessibility Review & Photos

Visual Survey - ADA Standards for Accessible Design

Property Name: Union Elementary School

BV Project Number: 158985.22R000-390.379

Facility History & Interview				
Question	Yes	No	Unk	Comments
1. ADA: Has an accessibility study been performed at the site? If so, when?			X	
2. ADA: If a study has occurred, have the associated recommendations been addressed? In full or in part?			X	
3. ADA: Have there been regular complaints about accessibility issues, or previous or pending litigation?			X	

Building : Accessibility Issues				
Category	Major Issues (ADA study recommended)	Moderate Issues (ADA study recommended)	Minor Issues	None*
Exterior Route				X
Building Entrances				X
Interior Route				X
Elevators				X
Public Restrooms				X

**be cognizant that if the "None" box is marked that does not guarantee full compliance; this study is limited in nature*



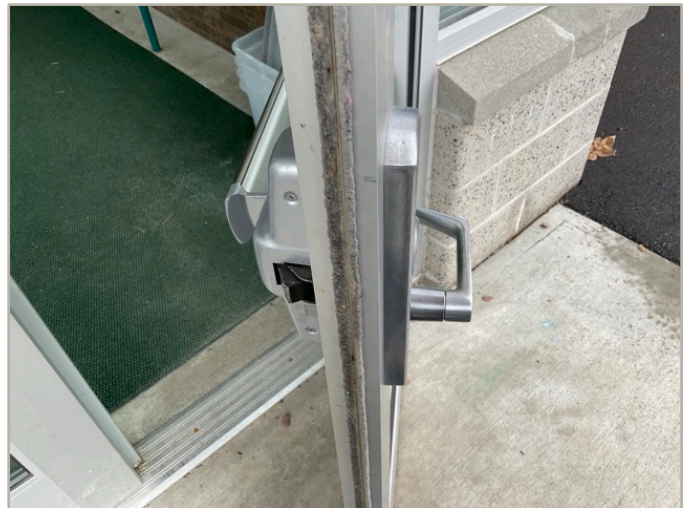
1 - EXT RAMP or PRIMARY PATH OF TRAVEL



2 - CURB CUT or 2ND PATH OF TRAVEL



3 - MAIN ACCESSIBLE ENTRANCE



4 - 2ND ENTRANCE or SIGNAGE/HARDWARE



5 - ACCESSIBLE INTERIOR PATH (RAMP/LIFT)



6 - HARDWARE, STAIR RAILS or SELF-SERVICE AREA



7 - TOILET STALL OVERVIEW



8 - SINK, FAUCET HANDLES or ACCESSORIES



9 - ACCESSIBLE ROUTE TO PLAYGROUND



10 - OVERVIEW OF PLAYGROUND



11 - LOBBY VIEW OF CABS, WITH DOORS OPEN



12 - IN-CAB CONTROLS/EMERGENCY CALL PANEL

The table below is intended to be used as a general reference guide to help differentiate the orders of magnitude between some of the more commonly observed accessibility issues. The table is not intended to be all-inclusive, and boxes checked in the tables above do not necessarily mean those specific problems or shortcomings cited as examples below exist at the subject buildings and sites. Reference the data and photos above and/or the *Key Findings* section in the body of the report for visuals and/or more specifics about the particular subject site conditions.

Reference Guide			
	Major Issues <i>(ADA study recommended)</i>	Moderate Issues <i>(ADA study recommended)</i>	Minor Issues
Parking	<ul style="list-style-type: none"> - Needs full reconstruction - Excessive slopes over 3% require major re-grading - No level locations to add required spaces 	<ul style="list-style-type: none"> - No or non-compliant curb cuts - Moderate difficulty to add required accessible spaces - Slopes close to compliant 	<ul style="list-style-type: none"> - Painting of markings needed - Signage height non-compliant - Signage missing
Exterior Route	<ul style="list-style-type: none"> - Large areas of sidewalks with excessive slopes - No ramp when needed - Ramps with excessive slopes 	<ul style="list-style-type: none"> - Ramps need rails - Ramps need rail extensions - All or most entrance door exterior maneuvering clearance areas with excessive slopes 	<ul style="list-style-type: none"> - One entrance door exterior maneuvering clearance area with excessive slope - Non-compliant signage
Building Entrances	<ul style="list-style-type: none"> - No compliant entrance exists - Exterior entry door/s not wide enough - Entrance vestibule requires complete reconstruction / reconfiguration due to clearance 	<ul style="list-style-type: none"> - Need significant # of lever handles - Need to add or modify automatic door opener - Entrance vestibule requires limited reconfigurations 	<ul style="list-style-type: none"> - A few door knobs instead of lever handles - Non-compliant door threshold
Interior Route	<ul style="list-style-type: none"> - All or most interior doors appear less than 32" wide - Corridors less than 36" wide - No ramp when needed - Ramps with excessive slopes - Non-compliant treads/risers at means of egress stairways 	<ul style="list-style-type: none"> - Single height drinking fountains - Drinking fountain too high or protrudes into accessible route - Ramps need rails - Ramps need rail extensions - Need significant # of lever handles - Non-compliant rail extensions at egress stairways - All/most door thresholds high 	<ul style="list-style-type: none"> - One door threshold too high - A few door knobs instead of lever handles - Non-compliant door pressures - Non-compliant signage - Switches not within reach range
Elevators	<ul style="list-style-type: none"> - No elevator present when required - Elevator cab too small 	<ul style="list-style-type: none"> - Panel control buttons not at compliant height - No hands-free emergency communication system - Elevator only has mechanical stops 	<ul style="list-style-type: none"> - Audible/visual signals at every floor may be lacking - Minor signage / Braille issues
Public Restrooms	<ul style="list-style-type: none"> - No ADA RR on each accessible floor - Restroom(s) too small - Entire restroom(s) requires renovation - Water closet clearance requires moving walls 	<ul style="list-style-type: none"> - Interior doors appear less than 32" wide - Missing or non-compliant grab bars - Easily fixable clearance issues 	<ul style="list-style-type: none"> - Minor height adjustments required - Non-compliant door pressures - Missing a visual strobe (only required if audible fire alarm already present) - Missing lavatory pipe wraps - Signage not compliant

	Major Issues <i>(ADA study recommended)</i>	Moderate Issues <i>(ADA study recommended)</i>	Minor Issues
Kitchens/Kitchenettes	<ul style="list-style-type: none"> - Clear space for each appliance not present - Clearance between opposing counters too narrow 	<ul style="list-style-type: none"> - Sink and counter too high - Sink knee and toe clearance not provided where required (built-in) - Less than 50% of cabinetry within reach range 	<ul style="list-style-type: none"> - Dispensers not within reach range - Switches not within reach range - Missing sink pipe wraps if knee and toe clearance required
Playgrounds & Pools	<ul style="list-style-type: none"> - Large areas of surfacing non-compliant - Install compliant play structures - No pool lift provided 	<ul style="list-style-type: none"> - Small area/s of surfacing or equipment non-compliant - Moderate issues with path of travel to playground/pool 	<ul style="list-style-type: none"> - Minor issues with path of travel to playground/pool

Appendix F:

Component Condition Report

Component Condition Report | UNION ELEMENTARY SCHOOL - Main Building

UF L3 Code	Location	Category	Condition	Asset/Component/Repair	Quantity	Unit	RUL	ID
Facade								
B2010	Building exterior	Facade	Poor	Exterior Windows, steeple and Trim, any painted surface, Prep & Paint	4,000	SF	1	6082526
B2010	Building Exterior	Facade	Fair	Exterior Walls/ storage sheds, any painted surface, Prep & Paint	2,000	SF	4	6081173
B2010	Roof	Facade	Fair	Roof Caulking, Joints, 0" to 1/2"	2,900	LF	4	6081180
B2010	Building Exterior	Facade	Good	Exterior Walls, Brick Veneer	9,000	SF	35	6081137
B2010	Building Exterior	Facade	Fair	Exterior Walls, Brick	21,000	SF	25	6081089
B2020	Building Exterior	Facade	Fair	Glazing, Historical Wood Windows	6,000	SF	1	6117653
B2050	Building Exterior	Facade	Fair	Exterior Door, Wood, Solid-Core Decorative High-End w/ Glazing	8		10	6081117
Roofing								
B3010	Roof	Roofing	Good	Roofing, Single-Ply Membrane, EPDM	30,500	SF	16	6081094
B3010	Roof	Roofing	Good	Roofing, Asphalt Shingle, 30-Year Premium	300	SF	25	6081144
Interiors								
C1010	Throughout Building	Interiors	Fair	Interior Wall, Brick	25,000	SF	21	6081061
C1030	Throughout building	Interiors	Fair	Interior Door, Wood, Solid-Core Decorative High-End w/ Glazing	45		3	6081178
C1030	Throughout building	Interiors	Fair	Interior Door, Steel, Fire-Rated at 90 Minutes or Over	16		25	6081128
C1030	Throughout building	Interiors	Fair	Interior Door, Wood, Solid-Core	40		20	6081177
C1070	Throughout building	Interiors	Fair	Suspended Ceilings, Hard Tile, Replacement w/ ACT	3,100	SF	6	6081066
C1070	Throughout building	Interiors	Good	Suspended Ceilings, Acoustical Tile (ACT)	50,000	SF	22	6081163
C2010	Throughout Building	Interiors	Good	Wall Finishes, Laminated Paneling (FRP)	2,000	SF	21	6081167
C2010	Restrooms	Interiors	Good	Wall Finishes, Ceramic Tile	7,000	SF	33	6082530
C2010	Throughout Building	Interiors	Good	Wall Finishes, any surface, Prep & Paint	110,000	SF	6	6082527
C2010	Throughout Building	Interiors	Poor	Wall Finishes, any surface, Prep & Paint	30,000	SF	1	6082529
C2010	Throughout Building	Interiors	Fair	Wall Finishes, Acoustical Tile (ACT), Standard	3,000	SF	13	6081174
C2030	Throughout building	Interiors	Fair	Flooring, Vinyl Tile (VCT)	5,000	SF	5	6081096
C2030	Throughout Building	Interiors	Fair	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	1,000	SF	4	6081164
C2030	Throughout building	Interiors	Fair	Flooring, Maple Sports Floor, Refinish	2,000	SF	5	6081135
C2030	1991 addition	Interiors	Poor	Flooring, Vinyl Tile (VCT)	6,000	SF	0	6081104
C2030	Stairways	Interiors	Fair	Flooring, Stone	500	SF	6	6081101
C2030	Classrooms	Interiors	Good	Flooring, Wood, Strip, Refinish	32,000	SF	7	6081107
C2030	Throughout Building	Interiors	Fair	Flooring, Carpet, Commercial Standard	4,800	SF	2	6081166
C2030	Throughout Building	Interiors	Fair	Flooring, Terrazzo	7,000	SF	25	6081067
C2030	Theater	Interiors	Poor	Flooring, Vinyl Tile (VCT), w/ Asbestos Abatement	2,000	SF	1	6081074
C2050	Throughout building	Interiors	Good	Ceiling Finishes, any flat surface, Prep & Paint	10,000	SF	7	6081124
Conveying								
D1010	Elevator	Conveying	Good	Elevator Cab Finishes, Standard	1		13	6081161
D1010	Elevator	Conveying	Good	Elevator Controls, Automatic, 1 Car	1		16	6081063
D1010	Elevator	Conveying	Good	Passenger Elevator, Hydraulic, 2 Floors, Renovate	1		26	6081131
Plumbing								
D2010	Kitchen	Plumbing	Good	Sink/Lavatory, Commercial Kitchen, 3-Bowl	1		21	6081121
D2010	Basement	Plumbing	Good	Water Heater, Electric, Heat pump	1		16	6081058

UF L3 Code	Location	Category	Condition	Asset/Component/Repair	Quantity	Unit	RUL	ID
D2010	Throughout building	Plumbing	Fair	Plumbing System, Supply & Sanitary, Medium Density (excludes fixtures)	60,500	SF	19	6081062
D2010	Classrooms	Plumbing	Fair	Sink/Lavatory, Trough Style, Solid Surface	1		14	6081172
D2010	Restrooms	Plumbing	Good	Toilet, Commercial Water Closet	25		26	6081072
D2010	Mechanical room	Plumbing	Fair	Water Heater, Electric, Residential	1		4	6081069
D2010	1991 addition	Plumbing	Good	Pump, Circulation, Domestic Water	1		11	6081078
D2010	Maintenance Closet	Plumbing	Fair	Sink/Lavatory, Service Sink, Floor	5		21	6081105
D2010	Restrooms	Plumbing	Good	Urinal, Standard	6		26	6081103
D2010	Restrooms	Plumbing	Good	Sink/Lavatory, Wall-Hung, Enameled Steel	1		26	6081147
D2010	Boiler room	Plumbing	Fair	Sink/Lavatory, Service Sink, Wall-Hung	3		19	6081179
D2010	Mechanical room	Plumbing	Fair	Storage Tank, Domestic Water, 80 to 150 GAL	1		10	6081080
D2030	Boiler room	Plumbing	Good	Pump, Sump	1		11	6081134
D2030	Basement	Plumbing	Failed	Pump, Sump	1		0	6081109
HVAC								
D3010	Basement	HVAC	Fair	Supplemental Components, Tank Monitoring System, Fuel Oil	1		7	6081097
D3020	Basement	HVAC	Fair	Unit Heater, Hydronic	1		7	6081181
D3020	Boiler room	HVAC	Good	Boiler Supplemental Components, Expansion Tank	1		30	6081138
D3020	Boiler room	HVAC	Good	Boiler Supplemental Components, Expansion Tank	1		30	6081060
D3020	Boiler room	HVAC	Good	Heat Exchanger, Plate & Frame, HVAC	4		29	6081071
D3020	Boiler room	HVAC	Good	Boiler Supplemental Components, Expansion Tank	1		30	6081112
D3020	Throughout building	HVAC	Fair	Radiator, Hydronic, Baseboard (per LF)	450	LF	16	6081100
D3020	Boiler room	HVAC	Good	Boiler Supplemental Components, Expansion Tank	1		30	6081153
D3020	Boiler Room	HVAC	Fair	Boiler, Oil, HVAC, 1501 to 2000 MBH	1		12	6081130
D3020	Boiler room	HVAC	Good	Boiler Supplemental Components, Expansion Tank	1		30	6081091
D3020	Boiler room	HVAC	Good	Boiler Supplemental Components, Expansion Tank	1		30	6081077
D3020	Kitchen	HVAC	Fair	Unit Heater, Hydronic	1		8	6081160
D3030	Office	HVAC	Fair	Unit Ventilator, approx/nominal 2 Ton	4		8	6081093
D3030	Data Room	HVAC	Good	Split System, Fan Coil Unit, DX	1		11	6081085
D3030	Throughout building	HVAC	Fair	Unit Ventilator, approx/nominal 2 Ton	35		6	6081092
D3030	Building Exterior	HVAC	Good	Split System, Condensing Unit/Heat Pump	1		11	6081170
D3050	Roof	HVAC	Poor	Make-Up Air Unit, MUA or MAU	1		0	6081140
D3050	Mechanical room	HVAC	Good	Air Handler, Interior AHU, Easy/Moderate Access	1		17	6081087
D3050	Boiler room	HVAC	Fair	Pump, Distribution, HVAC Heating Water [Pump-3]	1		16	6081148
D3050	Throughout building	HVAC	Fair	HVAC System, Hydronic Piping, 2-Pipe	60,500	SF	22	6081125
D3050	Boiler room	HVAC	Fair	Pump, Distribution, HVAC Heating Water [Pump-5]	1		16	6081073
D3050	Mechanical room	HVAC	Good	Air Handler, Interior AHU, Easy/Moderate Access	1		17	6081129
D3050	Boiler room	HVAC	Fair	Pump, Distribution, HVAC Heating Water	1		3	6081162
D3050	Boiler room	HVAC	Fair	Pump, Distribution, HVAC Heating Water [Pump-4]	1		16	6081157
D3050	Roof	HVAC	Fair	Air Handler, Interior AHU, Easy/Moderate Access	1		6	6081084
D3050	Boiler room	HVAC	Fair	Pump, Distribution, HVAC Heating Water [Pump-1]	1		16	6081142
D3050	Boiler room	HVAC	Fair	Pump, Distribution, HVAC Heating Water	1		3	6081083
D3060	Roof	HVAC	Good	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [EF-1]	1		16	6081098
D3060	Roof	HVAC	Fair	Exhaust Fan, Roof or Wall-Mounted, 28" Damper	1		10	6081116
D3060	Roof	HVAC	Good	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [FF-2]	1		16	6081154

UF L3 Code	Location	Category	Condition	Asset/Component/Repair	Quantity	Unit	RUL	ID
D3060	Roof	HVAC	Fair	Exhaust Fan, Roof or Wall-Mounted, 28" Damper [EF-4]	1		10	6081056
D3060	Roof	HVAC	Fair	Exhaust Fan, Roof or Wall-Mounted, 28" Damper [EF-1]	1		7	6081088
D3060	Roof	HVAC	Fair	Exhaust Fan, Roof or Wall-Mounted, 28" Damper	1		10	6081165
D3060	Building Exterior	HVAC	Poor	Exhaust Fan, Roof or Wall-Mounted, 24" Damper	1		1	6081086
D3060	Roof	HVAC	Fair	Exhaust Fan, Roof or Wall-Mounted, 28" Damper	1		10	6081055
Electrical								
D5020	Basement	Electrical	Good	Distribution Panel, 277/480 V	1		21	6081057
D5030	Mechanical room	Electrical	Fair	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install	1		10	6081059
D5030	Boiler room	Electrical	Fair	Motor, AHU or Pump	1		4	6081108
D5030	Throughout Building	Electrical	Fair	Electrical System, Wiring & Switches, Average or Low Density/Complexity	60,500	SF	23	6085547
D5030	Boiler room	Electrical	Fair	Motor, AHU or Pump [Pump-3]	1		4	6081095
D5030	Boiler room	Electrical	Fair	Motor, AHU or Pump	1		4	6081127
D5030	Mechanical room	Electrical	Fair	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install	1		10	6081136
D5030	Boiler room	Electrical	Good	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install [Pump-1]	1		13	6081169
D5030	Boiler room	Electrical	Good	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install	1		15	6081076
D5030	Boiler room	Electrical	Fair	Motor, AHU or Pump [Pump-1]	1		4	6081156
D5030	Boiler room	Electrical	Fair	Motor, AHU or Pump [Pump-5]	1		4	6081120
D5030	Boiler room	Electrical	Good	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install [Pump-4]	1		13	6081102
D5030	Boiler room	Electrical	Good	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install [Pump-3]	1		13	6081143
D5030	Boiler room	Electrical	Fair	Motor, AHU or Pump [Pump-4]	1		4	6081113
D5040	Throughout building	Electrical	Good	Emergency & Exit Lighting, Full Interior Upgrade, to LED, Modernize	60,500	SF	7	6081141
D5040	Throughout Building	Electrical	Good	Interior Lighting System, Full Upgrade, Medium Density & Standard Fixtures	60,500	SF	16	6085548
Fire Alarm & Electronic Systems								
D6060	Throughout building	Fire Alarm & Electronic Systems	Fair	Intercom/PA System, Public Address Upgrade, Facility-Wide	60,500	SF	4	6081158
D7030	Throughout Building	Fire Alarm & Electronic Systems	Good	Security/Surveillance System, Full System Upgrade, Average Density	60,500	SF	12	6081139
D7050	Throughout building	Fire Alarm & Electronic Systems	Good	Fire Alarm Panel, Fully Addressable	1		12	6081146
D7050	Throughout building	Fire Alarm & Electronic Systems	Good	Fire Alarm System, Full System Upgrade, Advanced Addressable, Upgrade/Install	60,500	SF	17	6081183
D7050	Throughout building	Fire Alarm & Electronic Systems	Good	Fire Alarm Panel, Fully Addressable	1		12	6081075
D8010	Throughout Building	Fire Alarm & Electronic Systems	Good	BAS/HVAC Controls, Extensive/Robust BMS or Smart Building System, Install	60,500	SF	12	6081115
Equipment & Furnishings								
E1030	Kitchen	Equipment & Furnishings	Fair	Foodservice Equipment, Freezer, 2-Door Reach-In	1		8	6081145
E1030	Kitchen	Equipment & Furnishings	Fair	Foodservice Equipment, Freezer, 2-Door Reach-In	1		8	6081155

UF L3 Code	Location	Category	Condition	Asset/Component/Repair	Quantity	Unit	RUL	ID
E1030	Kitchen	Equipment & Furnishings	Fair	Foodservice Equipment, Walk-In, Evaporator for Refrigerator/Freezer	1		8	6081111
E1030	Kitchen	Equipment & Furnishings	Fair	Foodservice Equipment, Dishwasher Commercial	1		3	6081133
E1030	Kitchen	Equipment & Furnishings	Fair	Foodservice Equipment, Food Warmer, Tabletop Drawers (Set of 4)	1		2	6081184
E1030	Kitchen	Equipment & Furnishings	Fair	Foodservice Equipment, Convection Oven, Single	1		3	6081070
E1030	Kitchen	Equipment & Furnishings	Excellent	Foodservice Equipment, Dairy Cooler/Wells	1		14	6081068
E1030	Kitchen	Equipment & Furnishings	Fair	Foodservice Equipment, Refrigerator, 1-Door Reach-In	1		3	6081152
E1030	Kitchen	Equipment & Furnishings	Good	Foodservice Equipment, Exhaust Hood, 8 to 10 LF	1		11	6081168
E1030	Kitchen	Equipment & Furnishings	Fair	Foodservice Equipment, Range/Oven, 6-Burner w/ Griddle	1		5	6081065
E1030	Kitchen	Equipment & Furnishings	Fair	Foodservice Equipment, Walk-In, Condenser for Refrigerator/Freezer	1		2	6081122
E1030	Kitchen	Equipment & Furnishings	Fair	Foodservice Equipment, Convection Oven, Single	1		3	6081099
E1030	Kitchen	Equipment & Furnishings	Fair	Foodservice Equipment, Walk-In, Refrigerator	1		6	6081118
E2010	Classrooms	Equipment & Furnishings	Fair	Casework, Countertop, Plastic Laminate	350	LF	2	6081159
E2010	Classrooms	Equipment & Furnishings	Fair	Casework, Cabinetry, Hardwood Standard	350	LF	3	6081054
E2010	Theater	Equipment & Furnishings	Poor	Fixed Seating, Auditorium/Theater, Metal Cushioned Standard	247		1	6081171
Special Construction & Demo								
F1020	Site	Special Construction & Demo	Good	Ancillary Building, Shed	60	SF	31	6081079
Pedestrian Plazas & Walkways								
G2020	Site	Pedestrian Plazas & Walkways	Good	Parking Lots, Pavement, Asphalt, Mill & Overlay	16,500	SF	22	6081090
G2020	Site	Pedestrian Plazas & Walkways	Fair	Parking Lots, Pavement, Asphalt, Seal & Stripe	16,500	SF	2	6081707
G2030	Site	Pedestrian Plazas & Walkways	Good	Sidewalk, Asphalt	4,000	SF	21	6081150
Athletic, Recreational & Playfield Areas								
G2050	Site	Athletic, Recreational & Playfield Areas	Good	Play Structure, Multipurpose, Medium	4		17	6081149
G2050	Gymnasium	Athletic, Recreational & Playfield Areas	Fair	Sports Apparatus, Basketball, Backboard/Rim/Pole	2		7	6081186
G2050	Site	Athletic, Recreational & Playfield Areas	Poor	Playfield Surfaces, Chips Wood, 6" Depth	7,000	SF	0	6081182
Sitework								
G2060	Site	Sitework	Good	Fences & Gates, Fence, Chain Link 4'	840	LF	37	6081175
G2060	Site	Sitework	Poor	Signage, Property, Monument, Replace/Install	1		1	6081064
G2060	Site	Sitework	Fair	Retaining Wall, Brick/Stone	2,300	SF	15	6081123
G4050	Site	Sitework	Good	Pole Light Fixture w/ Lamps, any type 20' High, w/ LED Replacement, 400 W	6		17	6081151
G4050	Building exterior	Sitework	Fair	Exterior Fixture w/ Lamp, any type, w/ LED Replacement	12		6	6081126
Utilities								
G3060	Site	Utilities	Fair	Storage Tank, Site Fuel, Underground, Replace/Install	1		5	6081119
Follow-up Studies								
P2030	Hill behind school	Follow-up Studies	NA	Engineering Study, Geoengineering, Hill STability, Study and monitor	1		0	6085550
P2030	Site	Follow-up Studies	NA	Engineering Study, Environmental, ESA Phase II, Evaluate/Report	1		0	6085551

Appendix G: Replacement Reserves

Uniformat Code	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Deficiency Repair Estimate
D3030	6081085	Split System, Fan Coil Unit, DX, Replace	15	4	11	1	EA	\$2,100.00	\$2,100												\$2,100										\$2,100
D3030	6081170	Split System, Condensing Unit/Heat Pump, Replace	15	4	11	1	EA	\$2,300.00	\$2,300												\$2,300										\$2,300
D3050	6081162	Pump, Distribution, HVAC Heating Water, Replace	15	12	3	1	EA	\$5,100.00	\$5,100				\$5,100																	\$5,100	\$10,200
D3050	6081083	Pump, Distribution, HVAC Heating Water, Replace	15	12	3	1	EA	\$5,100.00	\$5,100				\$5,100																	\$5,100	\$10,200
D3050	6081148	Pump, Distribution, HVAC Heating Water, Replace	25	9	16	1	EA	\$6,500.00	\$6,500																	\$6,500					\$6,500
D3050	6081073	Pump, Distribution, HVAC Heating Water, Replace	25	9	16	1	EA	\$6,500.00	\$6,500																	\$6,500					\$6,500
D3050	6081157	Pump, Distribution, HVAC Heating Water, Replace	25	9	16	1	EA	\$6,500.00	\$6,500																	\$6,500					\$6,500
D3050	6081142	Pump, Distribution, HVAC Heating Water, Replace	25	9	16	1	EA	\$6,500.00	\$6,500																	\$6,500					\$6,500
D3050	6081140	Make-Up Air Unit, MUA or MAU, Replace	20	20	0	1	EA	\$48,000.00	\$48,000	\$48,000																				\$48,000	\$96,000
D3050	6081084	Air Handler, Interior AHU, Easy/Moderate Access, Replace	30	24	6	1	EA	\$31,000.00	\$31,000							\$31,000															\$31,000
D3050	6081087	Air Handler, Interior AHU, Easy/Moderate Access, Replace	25	8	17	1	EA	\$22,000.00	\$22,000																		\$22,000				\$22,000
D3050	6081129	Air Handler, Interior AHU, Easy/Moderate Access, Replace	25	8	17	1	EA	\$22,000.00	\$22,000																		\$22,000				\$22,000
D3060	6081086	Exhaust Fan, Roof or Wall-Mounted, 24" Damper, Replace	20	19	1	1	EA	\$3,000.00	\$3,000		\$3,000																				\$3,000
D3060	6081088	Exhaust Fan, Roof or Wall-Mounted, 28" Damper, Replace	20	13	7	1	EA	\$4,000.00	\$4,000								\$4,000														\$4,000
D3060	6081116	Exhaust Fan, Roof or Wall-Mounted, 28" Damper, Replace	20	10	10	1	EA	\$4,000.00	\$4,000											\$4,000											\$4,000
D3060	6081056	Exhaust Fan, Roof or Wall-Mounted, 28" Damper, Replace	20	10	10	1	EA	\$4,000.00	\$4,000											\$4,000											\$4,000
D3060	6081165	Exhaust Fan, Roof or Wall-Mounted, 28" Damper, Replace	20	10	10	1	EA	\$4,000.00	\$4,000											\$4,000											\$4,000
D3060	6081055	Exhaust Fan, Roof or Wall-Mounted, 28" Damper, Replace	20	10	10	1	EA	\$4,000.00	\$4,000											\$4,000											\$4,000
D3060	6081098	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	4	16	1	EA	\$1,400.00	\$1,400																	\$1,400					\$1,400
D3060	6081154	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	4	16	1	EA	\$1,400.00	\$1,400																	\$1,400					\$1,400
D5030	6081108	Motor, AHU or Pump, Replace	18	14	4	1	EA	\$1,500.00	\$1,500					\$1,500																	\$1,500
D5030	6081095	Motor, AHU or Pump, Replace	18	14	4	1	EA	\$2,600.00	\$2,600					\$2,600																	\$2,600
D5030	6081127	Motor, AHU or Pump, Replace	18	14	4	1	EA	\$1,500.00	\$1,500					\$1,500																	\$1,500
D5030	6081156	Motor, AHU or Pump, Replace	18	14	4	1	EA	\$2,600.00	\$2,600					\$2,600																	\$2,600
D5030	6081120	Motor, AHU or Pump, Replace	18	14	4	1	EA	\$2,600.00	\$2,600					\$2,600																	\$2,600
D5030	6081113	Motor, AHU or Pump, Replace	18	14	4	1	EA	\$2,600.00	\$2,600					\$2,600																	\$2,600
D5030	6081059	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install	20	10	10	1	EA	\$5,300.00	\$5,300											\$5,300											\$5,300
D5030	6081136	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install	20	10	10	1	EA	\$5,300.00	\$5,300											\$5,300											\$5,300
D5030	6081169	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install	20	7	13	1	EA	\$6,200.00	\$6,200													\$6,200									\$6,200
D5030	6081102	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install	20	7	13	1	EA	\$6,200.00	\$6,200													\$6,200									\$6,200
D5030	6081143	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install	20	7	13	1	EA	\$6,200.00	\$6,200													\$6,200									\$6,200
D5030	6081076	Variable Frequency Drive, VFD, by HP of Motor, Replace/Install	20	5	15	1	EA	\$5,300.00	\$5,300																\$5,300						\$5,300
D5040	6081141	Emergency & Exit Lighting, Full Interior Upgrade, to LED, Modernize	10	3	7	60500	SF	\$0.65	\$39,325								\$39,325										\$39,325				\$78,650
D5040	6085548	Interior Lighting System, Full Upgrade, Medium Density & Standard Fixtures, Replace	20	4	16	60500	SF	\$4.50	\$272,250																	\$272,250					\$272,250
D6060	6081158	Intercom/PA System, Public Address Upgrade, Facility-Wide, Replace	20	16	4	60500	SF	\$1.65	\$99,825					\$99,825																	\$99,825
D7030	6081139	Security/Surveillance System, Full System Upgrade, Average Density, Replace	15	3	12	60500	SF	\$2.00	\$121,000												\$121,000										\$121,000
D7050	6081146	Fire Alarm Panel, Fully Addressable, Replace	15	3	12	1	EA	\$15,000.00	\$15,000												\$15,000										\$15,000
D7050	6081075	Fire Alarm Panel, Fully Addressable, Replace	15	3	12	1	EA	\$15,000.00	\$15,000												\$15,000										\$15,000
D7050	6081183	Fire Alarm System, Full System Upgrade, Advanced Addressable, Upgrade/Install	20	3	17	60500	SF	\$6.00	\$363,000																	\$363,000					\$363,000

Uniformat Code	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost *	Subtotal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Deficiency Repair Estimate
D8010	6081115	BAS/HVAC Controls, Extensive/Robust BMS or Smart Building System, Install	15	3	12	60500	SF	\$6.00	\$363,000													\$363,000									\$363,000
E1030	6081184	Foodservice Equipment, Food Warmer, Tabletop Drawers (Set of 4), Replace	15	13	2	1	EA	\$5,700.00	\$5,700			\$5,700															\$5,700				\$11,400
E1030	6081122	Foodservice Equipment, Walk-In, Condenser for Refrigerator/Freezer, Replace	15	13	2	1	EA	\$6,300.00	\$6,300			\$6,300															\$6,300				\$12,600
E1030	6081133	Foodservice Equipment, Dishwasher Commercial, Replace	10	7	3	1	EA	\$21,500.00	\$21,500				\$21,500										\$21,500								\$43,000
E1030	6081070	Foodservice Equipment, Convection Oven, Single, Replace	10	7	3	1	EA	\$5,600.00	\$5,600				\$5,600										\$5,600								\$11,200
E1030	6081152	Foodservice Equipment, Refrigerator, 1-Door Reach-In, Replace	15	12	3	1	EA	\$2,700.00	\$2,700				\$2,700														\$2,700				\$5,400
E1030	6081099	Foodservice Equipment, Convection Oven, Single, Replace	10	7	3	1	EA	\$5,600.00	\$5,600				\$5,600										\$5,600								\$11,200
E1030	6081065	Foodservice Equipment, Range/Oven, 6-Burner w/ Griddle, Replace	15	10	5	1	EA	\$10,200.00	\$10,200						\$10,200														\$10,200		\$20,400
E1030	6081118	Foodservice Equipment, Walk-In, Refrigerator, Replace	20	14	6	1	EA	\$15,000.00	\$15,000							\$15,000															\$15,000
E1030	6081145	Foodservice Equipment, Freezer, 2-Door Reach-In, Replace	15	7	8	1	EA	\$5,100.00	\$5,100									\$5,100													\$5,100
E1030	6081155	Foodservice Equipment, Freezer, 2-Door Reach-In, Replace	15	7	8	1	EA	\$5,100.00	\$5,100									\$5,100													\$5,100
E1030	6081111	Foodservice Equipment, Walk-In, Evaporator for Refrigerator/Freezer, Replace	15	7	8	1	EA	\$4,600.00	\$4,600									\$4,600													\$4,600
E1030	6081168	Foodservice Equipment, Exhaust Hood, 8 to 10 LF, Replace	15	4	11	1	EA	\$4,500.00	\$4,500												\$4,500										\$4,500
E1030	6081068	Foodservice Equipment, Dairy Cooler/Wells, Replace	15	1	14	1	EA	\$3,600.00	\$3,600														\$3,600								\$3,600
E2010	6081159	Casework, Countertop, Plastic Laminate, Replace	15	13	2	350	LF	\$50.00	\$17,500			\$17,500															\$17,500				\$35,000
E2010	6081054	Casework, Cabinetry, Hardwood Standard, Replace	20	17	3	350	LF	\$300.00	\$105,000				\$105,000																		\$105,000
E2010	6081171	Fixed Seating, Auditorium/Theater, Metal Cushioned Standard, Replace	20	19	1	247	EA	\$350.00	\$86,450		\$86,450																				\$86,450
G2020	6081707	Parking Lots, Pavement, Asphalt, Seal & Stripe	5	3	2	16500	SF	\$0.45	\$7,425			\$7,425					\$7,425					\$7,425					\$7,425				\$29,700
G2050	6081186	Sports Apparatus, Basketball, Backboard/Rim/Pole, Replace	25	18	7	2	EA	\$9,500.00	\$19,000								\$19,000														\$19,000
G2050	6081182	Playfield Surfaces, Chips Wood, 6" Depth, Replace	3	3	0	7000	SF	\$2.00	\$14,000	\$14,000			\$14,000						\$14,000			\$14,000			\$14,000		\$14,000				\$98,000
G2050	6081149	Play Structure, Multipurpose, Medium, Replace	20	3	17	4	EA	\$20,000.00	\$80,000																		\$80,000				\$80,000
G2060	6081064	Signage, Property, Monument, Replace/Install	20	19	1	1	EA	\$3,000.00	\$3,000		\$3,000																				\$3,000
G2060	6081123	Retaining Wall, Brick/Stone, Replace	40	25	15	2300	SF	\$140.00	\$322,000															\$322,000							\$322,000
G3060	6081119	Storage Tank, Site Fuel, Underground, Replace/Install	25	20	5	1	EA	\$60,000.00	\$60,000						\$60,000																\$60,000
G4050	6081151	Pole Light Fixture w/ Lamps, any type 20' High, w/ LED Replacement, 400 W, Replace	20	3	17	6	EA	\$4,000.00	\$24,000																		\$24,000				\$24,000
G4050	6081126	Exterior Fixture w/ Lamp, any type, w/ LED Replacement, Replace	20	14	6	12	EA	\$600.00	\$7,200						\$7,200																\$7,200
P2030	6085550	Engineering Study, Geoengineering, Hill Stability, Study and monitor	0	0	0	1	EA	\$40,000.00	\$40,000	\$40,000																					\$40,000
P2030	6085551	Engineering Study, Environmental, ESA Phase II, Evaluate/Report	0	0	* 0	1	EA	\$12,500.00	\$12,500							\$12,500															\$12,500
Totals, Unescalated										\$136,270	\$1,191,450	\$72,925	\$259,100	\$131,775	\$105,200	\$552,550	\$230,450	\$46,100	\$14,000	\$65,960	\$108,770	\$629,425	\$84,300	\$23,750	\$385,570	\$892,450	\$735,250	\$26,900	\$670,600	\$144,800	\$6,507,595
Totals, Escalated (3.0% inflation, compounded annually)										\$136,270	\$1,227,194	\$77,366	\$283,126	\$148,314	\$121,956	\$659,774	\$283,424	\$58,398	\$18,267	\$88,645	\$150,563	\$897,410	\$123,797	\$35,924	\$600,705	\$1,432,120	\$1,215,256	\$45,795	\$1,175,901	\$261,525	\$9,041,730

Appendix H: Depleted Value Report

UNION ELEMENTARY SCHOOL - Main Building

Depleted Value Index

51.1%

System	System Contribution	System Value
Air Handler	\$ 5,500	\$ 22,000
Air Handler	\$ 19,067	\$ 22,000
Air Handler	\$ 26,350	\$ 31,000
Ancillary Building	\$ 1,080	\$ 3,600
BAS/HVAC Controls	\$ 108,900	\$ 363,000
Boiler	\$ 24,650	\$ 58,000
Boiler Supplemental Components	\$ 587	\$ 4,400
Boiler Supplemental Components	\$ 436	\$ 2,180
Boiler Supplemental Components	\$ 1,320	\$ 4,400
Boiler Supplemental Components	\$ -	\$ 4,400
Boiler Supplemental Components	\$ -	\$ 3,540
Boiler Supplemental Components	\$ 880	\$ 4,400
Casework	\$ 8,750	\$ 17,500
Casework	\$ 21,000	\$ 105,000
Ceiling Finishes	\$ 10,000	\$ 20,000
Distribution Panel	\$ 9,100	\$ 14,000
Electrical System	\$ 75,625	\$ 151,250
Elevator Cab Finishes	\$ 8,550	\$ 9,000
Elevator Controls	\$ 2,500	\$ 5,000
Emergency & Exit Lighting	\$ 23,595	\$ 39,325
Engineering Study	\$ 28,000	\$ 40,000
Engineering Study	\$ 3,750	\$ 12,500
Exhaust Fan	\$ 700	\$ 1,400
Exhaust Fan	\$ 2,400	\$ 4,000
Exhaust Fan	\$ 1,260	\$ 1,400
Exhaust Fan	\$ 300	\$ 4,000
Exhaust Fan	\$ 800	\$ 4,000
Exhaust Fan	\$ 800	\$ 4,000
Exhaust Fan	\$ 450	\$ 3,000
Exhaust Fan	\$ 3,800	\$ 4,000
Exterior Door	\$ 24,640	\$ 36,960
Exterior Fixture w/ Lamp	\$ 4,320	\$ 7,200
Exterior Walls	\$ 121,500	\$ 243,000
Exterior Walls	\$ 1,113,000	\$ 1,113,000
Exterior Walls/ storage sheds	\$ 5,280	\$ 6,000
Exterior Windows, steeple and Trim	\$ 14,400	\$ 48,000

System	System Contribution	System Value
Fences & Gates	\$ 12,096	\$ 15,120
Fire Alarm Panel	\$ 7,500	\$ 15,000
Fire Alarm Panel	\$ 14,000	\$ 15,000
Fire Alarm System	\$ 169,400	\$ 363,000
Fixed Seating	\$ 40,343	\$ 86,450
Flooring	\$ 11,667	\$ 25,000
Flooring	\$ 1,050	\$ 1,500
Flooring	\$ 8,667	\$ 10,000
Flooring	\$ 21,000	\$ 30,000
Flooring	\$ 2,533	\$ 38,000
Flooring	\$ 102,400	\$ 128,000
Flooring	\$ 9,600	\$ 36,000
Flooring	\$ 65,333	\$ 98,000
Flooring	\$ 13,867	\$ 16,000
Foodservice Equipment	\$ 3,570	\$ 5,100
Foodservice Equipment	\$ 3,570	\$ 5,100
Foodservice Equipment	\$ 4,447	\$ 4,600
Foodservice Equipment	\$ 3,686	\$ 21,500
Foodservice Equipment	\$ 2,565	\$ 5,700
Foodservice Equipment	\$ 4,480	\$ 5,600
Foodservice Equipment	\$ 3,330	\$ 3,600
Foodservice Equipment	\$ 1,013	\$ 2,700
Foodservice Equipment	\$ 2,250	\$ 4,500
Foodservice Equipment	\$ 2,040	\$ 10,200
Foodservice Equipment	\$ 3,654	\$ 6,300
Foodservice Equipment	\$ 5,600	\$ 5,600
Foodservice Equipment	\$ 11,667	\$ 15,000
Glazing	\$ 770,000	\$ 990,000
Heat Exchanger	\$ 18,667	\$ 24,000
HVAC System	\$ 235,278	\$ 302,500
Intercom/PA System	\$ 77,642	\$ 99,825
Interior Door	\$ 73,500	\$ 94,500
Interior Door	\$ 1,824	\$ 15,200
Interior Door	\$ 36,960	\$ 61,600
Interior Lighting System	\$ 36,300	\$ 272,250
Interior Wall	\$ 198,750	\$ 1,325,000
Make-Up Air Unit	\$ 48,000	\$ 48,000
Motor	\$ 788	\$ 1,500
Motor	\$ 390	\$ 2,600
Motor	\$ 400	\$ 1,500
Motor	\$ 2,600	\$ 2,600
Motor	\$ 936	\$ 2,600
Motor	\$ 936	\$ 2,600

System	System Contribution	System Value
Parking Lots	\$ 15,400	\$ 57,750
Parking Lots	\$ 5,940	\$ 7,425
Passenger Elevator	\$ 19,800	\$ 55,000
Play Structure	\$ 28,800	\$ 80,000
Playfield Surfaces	\$ 11,200	\$ 14,000
Plumbing System	\$ 310,567	\$ 665,500
Pole Light Fixture w/ Lamps	\$ 15,000	\$ 24,000
Pump	\$ 2,562	\$ 4,270
Pump	\$ 854	\$ 4,270
Pump	\$ 1,083	\$ 6,500
Pump	\$ 1,300	\$ 6,500
Pump	\$ 416	\$ 2,600
Pump	\$ 4,845	\$ 5,100
Pump	\$ 1,950	\$ 6,500
Pump	\$ 3,467	\$ 6,500
Pump	\$ 2,040	\$ 5,100
Radiator	\$ 9,000	\$ 67,500
Retaining Wall	\$ 147,200	\$ 322,000
Roof Caulking	\$ 2,707	\$ 10,150
Roofing	\$ 89,467	\$ 335,500
Roofing	\$ 1,188	\$ 1,650
Security/Surveillance System	\$ 96,800	\$ 121,000
Sidewalk	\$ 14,667	\$ 22,000
Signage	\$ 1,950	\$ 3,000
Sink/Lavatory	\$ 1,900	\$ 2,500
Sink/Lavatory	\$ 300	\$ 2,500
Sink/Lavatory	\$ 533	\$ 4,000
Sink/Lavatory	\$ 1,105	\$ 1,700
Sink/Lavatory	\$ 2,520	\$ 4,200
Split System	\$ 1,260	\$ 2,100
Split System	\$ 1,610	\$ 2,300
Sports Apparatus	\$ 2,533	\$ 19,000
Storage Tank	\$ 30,000	\$ 60,000
Storage Tank	\$ 1,200	\$ 2,400
Supplemental Components	\$ 3,850	\$ 11,000
Suspended Ceilings	\$ 2,713	\$ 10,850
Suspended Ceilings	\$ 61,250	\$ 175,000
Toilet	\$ 11,375	\$ 32,500
Unit Heater	\$ 510	\$ 1,700
Unit Heater	\$ 298	\$ 1,700
Unit Ventilator	\$ 11,840	\$ 29,600
Unit Ventilator	\$ 233,100	\$ 259,000
Urinal	\$ 3,168	\$ 6,600

System	System Contribution	System Value
Variable Frequency Drive	\$ 1,060	\$ 5,300
Variable Frequency Drive	\$ 3,887	\$ 5,300
Variable Frequency Drive	\$ -	\$ 6,200
Variable Frequency Drive	\$ -	\$ 5,300
Variable Frequency Drive	\$ -	\$ 6,200
Variable Frequency Drive	\$ -	\$ 6,200
Wall Finishes	\$ -	\$ 32,000
Wall Finishes	\$ -	\$ 126,000
Wall Finishes	\$ -	\$ 165,000
Wall Finishes	\$ -	\$ 45,000
Wall Finishes	\$ -	\$ 24,000
Water Heater	\$ -	\$ 2,400
Water Heater	\$ -	\$ 900
Totals	\$ 4,871,798	\$ 9,527,565