

ASHLAND SCHOOL BOARD REGULAR MEETING
Ashland Elementary School – Cafeteria
Tuesday, February 7, 2023 @ 6:00 PM*

*Immediately Following Deliberative Session
No Policy Review Committee Meeting

AGENDA

I. CALL TO ORDER

II. RECORD ROLL

Members Present:

Members Absent:

Others Present:

III. PLEDGE OF ALLEGIENCE

IV. PUBLIC COMMENT – Open at: _____

V. MINUTES

A. Regular Meeting of January 3, 2023 (Action Item) Mrs. Moriarty (*Attachment #1*)

Motion to approve the minutes of the Regular Meeting of January 3, 2023.

Moved by: _____ Second: _____

Vote: _____

B. Special Meeting of January 6, 2023 (Action Item) Mrs. Moriarty (*Attachment #2*)

Motion to approve the minutes of the Special Meeting of January 6, 2023.

Moved by: _____ Second: _____

Vote: _____

C. Special Meeting of January 18, 2023 (Action Item) Mrs. Moriarty (*Attachment #3*)

Motion to approve the minutes of the Special Meeting of January 18, 2023.

Moved by: _____ Second: _____

Vote: _____

VI. NEW BUSINESS

A. Energy Grant Concept Paper (Information Item) Mr. Paul Bemis (*Attachment #4*)

VII. ADMINISTRATIVE REPORTS

A. Enrollment / Principal's Report (Information Item) Mrs. Avery (*Attachment #5*)

VIII. BUSINESS OF THE SUPERINTENDENT

A. General Operating Expenses (Action Item) Mrs. Moriarty (*Attachment #6*)

Motion to approve the payment of bills, manifest #2016.

Moved by: _____ Second: _____

Vote: _____

B. Financial Report (Information Item) Mrs. Moriarty

IX. PUBLIC COMMENT – Closed at: _____

X. ANNOUNCEMENTS

A. Tuesday, March 7, 2023

Ashland School Board @ Ashland Elementary School – Heffernan Media Center

- School Board Meeting – **6:00 p.m.**

B. Tuesday, March 14, 2023 – Town Elections / Voting

C. Tuesday, April 4, 2023

Policy Committee @ Ashland Elementary School – Heffernan Media Center

- Policy Committee Meeting – **5:00 p.m.**

Ashland School Board @ Ashland Elementary School – Heffernan Media Center

- School Board Meeting – **6:00 p.m.**

XI. ADJOURNMENT

Motion to adjourn the meeting at _____ p.m.

Moved by: _____ Second: _____

Vote: _____

**ASHLAND SCHOOL BOARD REGULAR MEETING
Ashland Elementary School - Heffernan Media Center
January 3, 2023**

MINUTES

CALL TO ORDER

Chair Heath called the meeting to order at 6:00 p.m.

RECORD ROLL

Members Present:

Mr. Stephen Heath, Chair
Ms. Sandra Coleman, Vice-Chair
Mr. Jesse Farris
Mr. Stephen Felton
Ms. Jennifer Foote

Members Absent:

--

Administrators Present:

Mrs. Mary Moriarty, Superintendent
Mrs. Kelly Avery, Principal

Others Present:

Mr. David Ruell
Attorney Chris Boldt, Representing the Library
Trustees
Members of the Public
Heather Bullimore, Recording Secretary

PLEDGE OF ALLEGIANCE

PUBLIC COMMENT

Public Comment was open at 6:00 p.m. – no comments.

BUSINESS OF THE BOARD

A. Library Request Regarding Library Warrant Article

Attorney Chris Boldt, representing the Library Trustees, presented for the Board's consideration a proposed Warrant Article concerning the right of first refusal on 41 School Street property. The Trustees ask that the School Board allow the article on the School District Warrant and not recommend the presented Warrant Article. The Ashland Selectmen were not persuaded that the Board's initial decision to refuse to exercise the right of first refusal was good enough. Attorney Bolt expects the voters to vote "no" on the article if the School Board does not recommend it. Discussion ensued.

Mr. Farris expressed concern that a vote to put the article on the warrant may act as waiver or estoppel of the School Board's understanding and corresponding position that a vote of the School Board is unnecessary and/or that the School Board need not exercise any right of first refusal in order for the Library to assume the 41 School Street Property. Attorney Boldt indicated that he hopes a vote by the School Board to not recommend the article, as well as explaining the situation at the deliberative session, will resolve this conflict.

Members of the School Board agreed that explaining to the community the need for the article and a desire for the article to not be approved by voters will be necessary. Members of the Library Trustees indicated they will assist with communication.

Mr. Farris moved, seconded by Mr. Felton, to approve the Warrant Article – Right of First Refusal on 41 School Street, Ashland NH as presented.

DRAFT

YES: Mr. Farris, Mr. Felton, Ms. Foote, Mr. Heath NO: Ms. Coleman

The motion carried 4-1.

Ms. Foote moved, seconded by Ms. Coleman, to vote if the Board should not recommend the Warrant Article as presented.

YES: Mr. Farris, Mr. Felton, Ms. Coleman, Ms. Foote, Mr. Heath NO: --

The motion carried 5-0.

MINUTES

A. Special Meeting of December 16, 2022

Ms. Coleman moved, seconded by Mrs. Foote, to approve the minutes of the Special Meeting of December 16, 2022.

YES: Mr. Farris, Mr. Felton, Ms. Coleman, Ms. Foote, Mr. Heath NO: --

The motion carried 5-0.

COMMUNICATIONS

A. Energy Grants – “Invest in More Efficient, Energy-Saving School Buildings”

Mrs. Moriarty presented correspondence from Paul Bemis regarding investing in energy-efficient school buildings. Mr. Heath noted that if the money is available and people are willing to work with Mr. Bemis, the long-term savings would be worth at least applying. Mr. Felton noted that it is unlikely we would see an opportunity like this coming along again anytime soon.

The Board reached consensus to move forward with a proposal.

ADMINISTRATIVE REPORTS

A. Principal's Report

Mrs. Avery reported that as of January 2nd enrollment is at 160 students.

Staff members of the month are Jo Bickford and Nick Gagnon. Mrs. Bickford was a champion for literacy and reading, and is always one of the first to step in to volunteer whenever needed. Mr. Gagnon's enthusiasm for his subject area, science, is evident whenever you step into his classroom, and he always goes above and beyond.

See the attached Principals Report for detailed information regarding events and activities at Ashland Elementary School.

BUSINESS OF THE SUPERINTENDENT

A. General Operating Expenses

Mrs. Foote moved, seconded by Ms. Coleman, to approve the payment of bills, manifest #2014.

YES: Mr. Farris, Mr. Felton, Ms. Coleman, Ms. Foote, Mr. Heath NO: --

The motion carried 5-0.

DRAFT**OLD BUSINESS****A. Ashland Extraordinary Needs Grant Accountability Plan**

Mrs. Moriarty and Mrs. Avery presented an accountability plan with focus on improving the current fourth graders' mean score in mathematics on the New Hampshire SAS by 20 points by the time they are in 5th grade and by 50 points by the time they are in 8th grade. The plan has been submitted to the Department of Education and is awaiting final approval.

B. 2023-2024 Default Budget

Mrs. Moriarty explained the Default Budget requires further review.

Mrs. Foote moved, seconded by Mr. Felton, to table action on the 2023-2024 Default Budget until Friday, January 6th at 5:30.

YES: Mr. Farris, Mr. Felton, Ms. Coleman, Ms. Foote, Mr. Heath NO: --

The motion carried 5-0.

C. Warrant Articles

Ms. Coleman moved, seconded by Mr. Farris, to table discussion on the Warrant Articles until Friday, January 6th at 5:30.

YES: Mr. Farris, Mr. Felton, Ms. Coleman, Ms. Foote, Mr. Heath NO: --

The motion carried 5-0.

POLICY – No action required

PUBLIC COMMENT

Public Comment was closed at 6:50 PM – No comments

ANNOUNCEMENTS**A. Friday, January 6, 2023**

Ashland Elementary School – Library

- Budget Committee Meeting - **6:00 p.m.**

B. Tuesday, February 7, 2023

Ashland Elementary School – Cafeteria

- First Deliberative Session – **6:00 p.m.**
- **Special** School Board Meeting– *Immediately Following the Deliberative*

C. Tuesday, March 7, 2023 – Town Elections / Voting

Ashland School Board @ Ashland Elementary School – Heffernan Media Center

- School Board Meeting – **6:00 p.m.**

D. Tuesday, March 14, 2023 – Town Elections / Voting**ADJOURNMENT**

Mrs. Foote moved, seconded by Mr. Felton, to adjourn the meeting at 6:50 p.m.

YES: Mr. Farris, Mr. Felton, Ms. Coleman, Ms. Foote, Mr. Heath NO: --

DRAFT

The motion carried 5-0.

Respectfully submitted,

Heather Bullimore
Recording Secretary

DRAFT

ASHLAND SCHOOL BOARD SPECIAL MEETING
Ashland Elementary School – Conference Room
Friday, January 6, 2023 @ 5:30 PM
No Policy Review Committee Meeting

MINUTES

I. CALL TO ORDER

Chair Heath called the meeting to order at 5:30 PM.

II. RECORD ROLL

Members Present:

Mr. Stephen Heath, Chair
Ms. Sandra Coleman, Vice-Chair
Mr. Jesse Farris

Administrators Present:

Mrs. Mary Moriarty, Superintendent
Mrs. Kelly Avery, Principal

Members Absent:

Mr. Stephen Felton (with notice)
Ms. Jennifer Foote (with notice)

Others Present:

Mr. David Ruell

III. PUBLIC COMMENT – Open at 5:30 PM.

IV. MINUTES

- A. Regular Meeting of January 3, 2023 (Action Item) Mrs. Moriarty

The Board reached consensus to table voting to approve the minutes of the Regular Meeting on January 3, 2023 until the next School Board meeting.

V. OLD BUSINESS

- A. 2023-2024 Default Budget (Action Item) Mrs. Moriarty

Mrs. Moriarty presented the 2023-2024 Default Budget for the Board's consideration.

Ms. Coleman moved, seconded by Mr. Farris, to approve the 2023-2024 Default Budget as presented. The motion carried 3-0.

- B. Warrant Articles (Action Item) Mrs. Moriarty

Mrs. Moriarty presented Articles 2 and 3 for the Board's consideration. See attached Warranty Articles for detail.

Ms. Coleman moved, seconded by Mr. Farris, to approve Article 2 as presented. The motion carried 3-0.

Ms. Coleman moved, seconded by Mr. Farris to approve Article 3 as presented. The motion carried 3-0.

VI. PUBLIC COMMENT – Closed at 6:00 PM.

VII. ANNOUNCEMENTS

- A. Friday, January 6, 2023
Ashland Elementary School – Library
 - Budget Committee Meeting - 6:00 p.m.
- B. Tuesday, February 7, 2023
Ashland Elementary School – Cafeteria
 - First Deliberative Session – 6:00 p.m.
 - Special School Board Meeting– *Immediately Following the Deliberative*
- C. Tuesday, March 7, 2023 – Town Elections / Voting
Ashland School Board @ Ashland Elementary School – Heffernan Media Center
 - School Board Meeting – 6:00 p.m.
- D. Tuesday, March 14, 2023 – Town Elections / Voting

VIII. ADJOURNMENT

Ms. Coleman moved, seconded by Mr. Farris, to adjourn the meeting at 6:00 P.M. The motion carried 3-0.

Meeting adjourned at 6:00 P.M.

ASHLAND SCHOOL BOARD SPECIAL MEETING
Ashland Elementary School - Library
January 18, 2023

MINUTES

CALL TO ORDER

Chair Heath called the meeting to order at 6:04 p.m.

RECORD ROLL

Members Present:

Mr. Stephen Heath, Chair
Ms. Sandra Coleman, Vice-Chair
Mr. Jesse Farris
Mr. Stephen Felton
Ms. Jennifer Foote

Administrators Present:

Mrs. Mary Moriarty, Superintendent

Others Present:

--

Members Absent:

--

PLEDGE OF ALLEGIANCE

PUBLIC COMMENT

Public Comment was open at 6:04 p.m. – no comments.

BUSINESS OF THE BOARD

A. Operating Budget (Action Item) Mrs. Moriarty

Mrs. Moriarty shared that the Budget Committee added \$1 to the Homeless Transportation line.

Ms. Coleman moved, seconded by Mr. Farris, to amend the 2023/2024 Operating Budget to include \$1 for Homeless Transportation. The motion carried 5-0.

Ms. Coleman moved, seconded by Mr. Farris, to approve the 2023/2024 Operating Budget in the amount of \$4,296,866 for the Warrant Article. The motion carried 5-0.

Discussion ensued regarding fund balance and how unexpended fund balance impacts the tax rate. Mrs. Moriarty suggested that the Department of Revenue Administration may be willing to do a workshop. She will contact them to ask.

B. Clarification on School Board recommendation of Warrant Article 4 (Information Item) Mrs. Moriarty.

Mrs. Moriarty recommended adjusting Article 4 to read Ashland Budget Committee RECOMMENDS a NO Vote and Ashland School Board RECOMMENDS a NO Vote. Discussion ensued.

Ms. Coleman moved, seconded by Mr. Farris, to approve the language as presented. The motion carried 5-0.

DRAFT

C. Draft Explanation for Warrant Article 4 for Annual Brochure (Action Item) Mrs. Moriarty

Mrs. Moriarty shared a draft explanation for Warrant Article 4 for the School Board to consider including in the annual brochure regarding the School District Warrant Articles sent to the Ashland Residents. Discussion ensued with some adjustments to the language (see attached).

Ms. Foote moved, seconded by Mr. Felton, to approve the written explanation for Warrant Article 4. The motion carried 5-0.

PUBLIC COMMENT

Public Comment was closed at 6:40 p.m.

ADJOURNMENT

Mrs. Coleman moved, seconded by Mr. Foote, to adjourn the meeting at 6:40 p.m. The motion carried 5-0.

Respectfully submitted,

Heather Bullimore
Recording Secretary

Ashland Elementary School Energy, Health & Decarbonization Project**Control Number: 2756-25505**

Project Location: Ashland Elementary School, 16 Education Drive, Ashland, NH 03217
FOA Number: DE-FOA-0002756 – **Innovative Energy Technology Packages**
Applicant: Air Cleaners Inc.

Lead Organization: Air Cleaners Inc., project management, ventilation, and financing

Technical Contact	Business Contact
Paul Bemis President Air Cleaners Inc 85 Pleasant Street, PO Box 100 Bristol NH, 03222 603-369-6085 603-252-9322 Paul@AirCleanersInc.com	Chris Ames VP Operations Air Cleaners Inc 85 Pleasant Street Bristol NH 03222 813-679-9832 813-679-9832 Chris@AirCleanersInc.com

Project Team

Ashland Elementary School Board	Project Member	Don Bagley
DDH Energy Consulting	Energy efficiency consulting	Dick Henry
Dynamic Grid	Energy systems design	Kay Aikin

Project Description.

The Project

The Ashland Elementary School consists of two buildings, the main classroom/cafeteria building, and the gymnasium. The main building is a 39,600-square-foot single-level structure constructed in phases beginning in 1955. The gymnasium is a 9,700 square foot building single-level structure. The buildings are constructed utilizing masonry exteriors with no insulation and are heated by oil. The project consists of a deep energy retrofit with air sealing, roof insulation, exterior wall insulation, high-performance energy recovery ventilation (ERV), and LED lighting. It replaces fossil fuels with efficient cold-weather heat pumps. This all-electric project includes a microgrid with solar generation, energy storage for resilience, and an advanced machine-learning Energy Resource Management System to optimize energy use.

This project is an example of integrated design, balancing energy efficiency, thermal comfort, superior ventilation, improved indoor air quality (IAQ), electric production, and storage. It demonstrates that even a variety of older schools can be successfully and economically brought to modern thermal standards and eliminate fossil fuels. The project also explores creative financing combining investment tax credits (ITC), federal energy rebates, and bank financing to monetize the energy efficiency/generation savings, covering some of the project financings within existing Operational Expenses (OPEX). The aim is to make the project cash flow positive to the school district. Due to Ashland's limited tax base, we cannot do this without federal grant support for a majority of the \$ 3.4 to \$3.7 million in design and construction costs.

Energy Efficiency, Health, and Safety Benefits

The AES currently has a high source Energy Utilization Intensity (EUI) of 171 (42% above the state average). The high cost of oil contributes to excessive operational costs for the school taking resources away from the community's primary goal of education. We are targeting a source EUI below 60 without on-site generation and will achieve close to net zero with the solar/storage/microgrid components.

We expect OPEX savings of nearly 75%, which will provide more resources for education as well as eliminate the exposure to fossil fuel cost volatility. Benefits to climate include a dramatic reduction in fossil fuels and using a low embedded carbon neutral wood fiber exterior insulation, such as the locally sourced TimberHP product (-9.2 lbs. CO₂/ft³), which will further lower the school's carbon footprint.

We are currently installing high-performance ERVs to improve IAQ to benefit both teacher and student health, and comfort. Improved thermal comfort, LED lighting, and air quality have also been shown to improve student performance and reduce absenteeism.

The addition of a solar + storage microgrid and intelligent controls optimizes system performance, manages demand, and provides a highly resilient public building that can be islanded from the grid, serving the community beyond just education as an emergency shelter.

Technology Innovation and Scalability

By integrating a whole-system approach and balancing improvements across the building envelope, ventilation, power generation, system controls, and innovative financing, the project provides value to this school campus and demonstrates scalability across other schools. The project is designed to maximize the benefits of the technologies integrated as a whole, to form a resilient integrated system providing high energy performance and return on investment.

The project team has provided a similar integrated energy-efficient approach to other schools prior to the IRA and the BIL. We propose to establish a public/private partnership that stacks investment returns for patient capital investors and equity/bank ESG funds while passing on the savings to school districts. The aim is to provide a scalable demonstration for other small communities that are constrained by a limited tax base.

Financing Innovation

Disadvantaged schools, typically in rural and inner-city communities, have limited tax bases and older, less energy-efficient buildings. This limits their ability to finance education and invest in plant improvements for operational savings. These buildings have low thermal comfort, are energy inefficient, with poor indoor air quality, and negatively affect the educational environment. Because of limited financial resources, it makes it almost impossible for these communities to bond projects or raise taxes. This creates an opportunity for new financing innovations.

We plan to develop an investor-owned “Green Bank” focused on schools to reduce energy operating costs, and improve IAQ, while lowering each building’s carbon footprint. Utilizing patient capital expecting comparatively low returns, we will install thermal improvements combined with onsite energy generation and storage. The key is providing integrated energy efficiency and electric generation savings that provide investment returns in long-term contracts. The ESCO would partner with the following groups within an evergreen (a permanent fund without a set ending date focused on steady returns) investment fund.

- Third-party tax-advantaged investors that can use Investment Tax Credits (ITC) and depreciation tax deductions,
- Community Development Finance Authorities (CDFAs) with a commitment to supporting lower-income communities,
- Commercial bank’s Environment, Social, and Government (ESG) focused loan vehicles and
- Government grants

This creative financing allows the monetization of energy efficiency/generation savings to cover project financing within existing Operational Expenses (OPEX). The aim is to make the project cash flow positive to the school district. Tax-advantaged investors would provide equity to the ESCO receiving tax credits and depreciation benefits; Community Development funds would provide loan guarantees lowering loan rates; Commercial Banks would provide long-term loan funds, and the ESCO would facilitate the application process for available government grants.

Project Execution and Continued Operations

Air Cleaners inc. is serving as the prime recipient and project manager. They have a good working relationship with the school district as well as the other team members, DDH Energy Consulting, and Dynamic Grid. Additional team members include professional design professionals, construction management, and systems commissioning experienced in “Integrated Project Delivery” approaches. Similar projects have been designed, built, and commissioned for other net-zero schools in New Hampshire that were directly financed by more affluent schools.

A key component of operational efficiency benefits for schools is the continued maintenance of the improvements. This initial demonstration project relies on contracting with qualified local service providers for preventive maintenance and service agreements. Training on the equipment with a sequence of operation manuals will also be developed and delivered to the school district. Regular maintenance is paid for through reduced operational energy costs.

Statement of Needs

Community Need

The town of Ashland is an economically challenged community of 1,959 (2021 census) residents located 38 miles north of the capital of Concord. Ashland Elementary School ranks as the 1st most needy school district of 175 in NH and is designated a Rural District 42 community. It has the tenth lowest per capita income in the state out of the 234 towns in New Hampshire.

New Hampshire schools obtain almost all their funding from local property taxes because the state has no income tax or sales tax. NH is last in the nation in providing support to its schools. Small NH towns are challenged to meet the cost of public education, not having the fiscal capacity to increase taxes or float bonds to carry out energy improvements to their school facilities and are therefore partnering with our project team to design, build and finance these improvements.

Energy Justice Mapping

Schools in New Hampshire derive almost all their funding from local property taxes due to the absence of a state income or sale tax. NH State aid to schools is the lowest in the United States. The State provides \$3,800 per pupil, which meets only 16% of Ashland's average expenditure of \$24,000. New Hampshire's small towns like Ashland are severely challenged to meet the cost of public education. Ashland Elementary School (AES) is a **Title 1 school located in the Interlake's Cooperative School District (3301560) which is a designated DAC community (see DAC attachment)**. It serves 160 students in grades K-8. It is the largest public building in Ashland and is a designated community shelter. Students in grades 9-12 are transported by bus to the Plymouth Area School located in Plymouth, New Hampshire, approximately 10 miles northwest of Ashland.

The town of Ashland is governed by an elected Board of Selectman and an annual Town Meeting. The municipal budget is approximately \$8M, and the school appropriations are approximately \$3.9M per year. Total homes in Ashland are approximately 1,383 units, and the tax rate was \$27.47 per thousand in 2021. Per capita income for 2021 was \$24,901, and Median household income was \$32,333, which is 56% lower than the state average, and the poverty rate is 22.7%. There is very little opportunity for employment in Ashland, resulting in 30% of workers commuting to jobs outside of the town. The largest employer in Ashland is Freudenberg-NOK which employs 50 people. The cost per pupil for education was \$19,408 in the 2021-22 school year. Approximately 45% of the students are eligible for free or reduced lunch (FRL) programs.

The Ashland Village School represents the center of the community. Nearly all public functions are performed at the school, including town meetings, select board meetings, clubs and group meetings, and voting. The gymnasium is equipped with bathrooms and a shower and is an emergency shelter and disaster recovery shelter. The building has a full cafeteria and can be used as both a shelter and food preparation area for the town.

The primary issue with the Ashland Elementary School (AES) is the cost of energy related to heating and cooling the buildings. The main building containing classrooms and the cafeteria has been built in stages beginning in 1955, with the most recent addition in 1994. The construction is primarily masonry block-on-slab construction with very little insulation in any of these sections. The gym is older than the main classroom building and dates back to its original construction in 1945. It is constructed primarily of block and brick with no insulation. The ceiling is a cathedral

design with wood on steel framing and no insulation. The (supposed) benefit of this design is that the snow is melted by the internal heat of the building to shed the load from the roof. Structural improvements will be required to add insulation and a solar array to the roof of this building. However, the importance of this building to the town cannot be overstated. It is utilized for nearly every town function, from voting to sports and theatre.

The issue for the Ashland community is one of cost. The current school budget represents nearly 50% of the annual town budget. Major improvements such as those outlined below are typically “out of the question” for many of the town residents as the impact on the local property tax would be substantial. School budgets are reviewed and passed at the annual town meeting. As residents get older, they often become reluctant to support facility improvements to the local school. The result is a “catch-22” of ever-increasing energy costs with no way to reduce them. By succeeding in this project, we can illustrate the cost-benefit of lowering energy costs, reducing dependence on carbon-based fuels, and creating a highly resilient emergency recovery shelter, all while doing our part to reduce global warming. Furthermore, this project will be representative of many of the schools in New Hampshire and become a model for how to decarbonize our school buildings in a highly energy-efficient, resilient, and scalable manner.

Conclusion

The Ashland Elementary School is in a rural, under-resourced, low-income community without the fiscal capacity to affect these energy improvements. This project supports the community, strengthening the educational experience, the school’s primary objective. It cannot be accomplished without federal support.

Facility Needs Assessment

The Facility Needs Assessment is divided into two components; improvements to the main educational facility, and improvements to the gymnasium. The Department of Energy's online needs calculator was run, but the results don't seem to reflect local knowledge of the subject building or local knowledge by the project team of similar buildings that have been done previously.

Main Educational Building

The main AES is a 39,600-square-foot single-story education facility created in three sections over a period of time beginning in the 1950s. It is primarily a masonry block structure with a steel interior frame. The oldest section of the building is referred to as the "Ober Wing" and was built in 1955. The "Glidden" wing was added in 1965, the "Vocational" added in 1970, and the "Middle School Wing" added in 1994. Modest improvements to the building have been done over the years, including the replacement of the original windows in 1996. A photo of the building can be seen in Figure 1 below:



Figure 1
Aerial view of Ashland Elementary School

Existing Conditions

- The primary heating source for the entire building consists of three inefficient <80% 500 MBTU oil-fired hot water boilers located at the end of the building.
- A hydronic loop circulates hot water to all classrooms and cafeteria. This creates a problem heating the Middle School Wing at the far end of the building due to substantial temperature loss.
- There are two rooftop air conditioning units, each with approximately 5 tons of capacity. One is located on top of the Glidden Wing, and the other on the Middle School Wing. The other sections of the building have no air conditioning, which is problematic in the spring and fall periods.
- Fuel oil consumption for this building average approximately 12,000 gallons per year.
- Electricity consumption is approximately 178,500 KWH per year.

- The entire building is CMU block construction – the majority of the building has a brick veneer, with the Middle School Wing having metal cladding over the block.
- The roof is not air sealed in almost all parts of the school and has very little, if any, insulation.
- The walls have no insulation.
- In many places, the hydronic fin tube radiators are covered by desks and bookcases.
- Windows were last upgraded in 1996, making them 27 years old.
- Lighting is almost all 32W T-8s.
- Slab edge is exposed above grade around the entire school.
- Given the age of the building, there is likely no vapor barrier or slab insulation
- There is no capillary break between the foundation and the block, as can be seen from instances of rising damp.
- The building is very poorly ventilated. A project was initiated in 2021 to add 3 Energy Recovery Ventilation (ERV) systems to the building. This work includes adding internal ducts to supply the air from the rooftop units.
- The electrical system was also enhanced to supply sufficient power to the rooftop ERVs. This project is scheduled to be completed in 2023.

The building does not meet modern energy codes adding extensively to operational costs and constraining the school's educational budget. Due to the age and poor construction of the building, a deep energy retrofit is warranted. This should include:

- Exterior wall insulation of R32 to R40 (due to the extreme climate in New Hampshire)
- Remove current attic insulation, air seal and replace with R60 blown-in insulation
- Eliminate thermal bridges as required
- Replace all windows with triple pane high-efficiency windows
- Install Energy Recovery Ventilators to improve air quality
- Eliminate fossil fuel
- Electrify heating with cold weather heat pumps
- Add solar microgrid to offset electrical use and
- Energy storage to provide demand charge reductions and resilience benefits

Gymnasium Building

The gymnasium building consists of a 9,700 SF brick and masonry structure initially built in approximately 1945. The roof is referenced as a "Space Frame" steel structure with a wood exterior covered by asphalt shingles. There is no visible insulation in this building. The design assumes heat from the building will melt the snow from the roof, reducing the snow load. The heating system for this building consists of one 400 MBTU oil-fired boiler and consumes approximately 8,000 gallons of heating oil per year. The electrical load for this building averages 14,000 KWH per year.

The project requires the following:

- The building envelope needs to be enhanced to reduce air leakage and conductive heat loss. This includes addressing the roof insulation and ensuring the windows currently in use are sufficient to meet the overall building energy goals. The addition of insulation to the roof of this building will require structural reinforcement to account for the added snow load. The wall portions of the building with little to no insulation will be brought up to R-40. Roof insulation, once air sealed, should be brought up to R-60 as the coldest day in the last few years was -27°F. The windows will be replaced with triple-glazed energy-efficient windows with a value of R-6.
- The fossil fuel-based heating system needs to be replaced with a “Hyper-heat” type of heat pumps that can operate down to -30°F. This will provide both cooling and heating to the building and therefore expand the use of the building. In its current form, the building is both too hot in the summer, and too cold in the winter.
- ERV’s will need to be added to the building to provide sufficient clean air. Currently, there is one wall-mounted exhaust fan, along with a mechanically louvered make-up air unit. 2 ERVs will be added to provide fresh, clean air to all the building occupants.
- A rooftop solar system needs to be added to offset the incremental cost of operating the heat pumps and ERVs. This step will also reduce the demand on the local electrical distribution system.
- A battery storage system needs to be added to the building to reduce electrical demand charges and also improve the overall resiliency of the building. This will become important when the facility is used as an emergency shelter.
- Our efforts will improve the overall resiliency of the building. This is an important benefit as the facility is used as an emergency shelter.
- Lights throughout the building will be replaced with LED’s creating about a 65% reduction in the use of energy for lighting.

Ashland Elementary School Enrollment Report
January 23, 2023 for February School Board Meeting

2022-2023 MONTHLY ENROLLMENTS	K VLACS	K	1 VLACS	1	2 VLACS	2	3 VLACS	3	4 VLACS	4	5 VLACS	5	K - 5 Total	6 VLACS	6	7 VLACS	7	8 VLACS	8	6-8 Total	TOTAL K- 8
August 29, 2022	N/A	12	N/A	19	N/A	18	N/A	19	N/A	23	N/A	15	106	N/A	22	N/A	15	N/A	17	54	160
September 23, 2022	N/A	14	N/A	18	N/A	19	N/A	19	N/A	23	N/A	14	107	N/A	23	N/A	14	N/A	16	53	160
October 20, 2022	N/A	14	N/A	18	N/A	19	N/A	19	N/A	23	N/A	15	108	N/A	22	N/A	14	N/A	16	52	160
November 22, 2022	N/A	14	N/A	18	N/A	19	N/A	19	N/A	23	N/A	15	108	N/A	22	N/A	14	N/A	16	52	160
December 23, 2022	N/A	14	N/A	17	N/A	19	N/A	19	N/A	24	N/A	15	108	N/A	22	N/A	14	N/A	16	52	160
January 23, 2023	N/A	14	N/A	17	N/A	19	N/A	19	N/A	24	N/A	16	109	N/A	22	N/A	14	NA	16	52	161

COMPARISONS (FROM JUNE	K VLACS	K	1 VLACS	1	2 VLACS	2	3 VLACS	3	4 VLACS	4	5 VLACS	S-TOT K - 5	6 VLACS	7 VLACS	8 VLACS	8 S-TOT 6-8	TOTAL K-8
2012-2013		19		26		15		18		18		114		17			171
2013-2014		20		18		29		13		17		117		17		57	168
2014-2015		18		18		17		23		12		104		20		51	142
2015-2016		20		12		16		17		22		98		17		38	132
2016-2017		26		21		18		14		17		119		11		34	148
2017-2018		21		22		16		14		12		100		19		29	128
2018-2019		28		19		26		17		15		120		13		28	163
2019-2020		23		22		14		28		14		118		11		43	143
2020-2021		20		23		27		14		24		125		18		25	172
2021-2022	1	19	1	17	0	20	2	20	0	13	0	114	0	17	0	47	161

**Ashland Accounts Payable Manifest
2022-2023 Fiscal Year**

Manifest #: 2016 Manifest Date: 2/7/2023 Prepared By: Eric LaPierre

The Ashland School District is hereby authorized to draw checks against Ashland School District fund for the sum of \$ 209,256.12 on account of obligations incurred for value received in services and materials as shown and dated on the following check listings:

ASHLAND BOARD

Sandra Coleman, Vice Chairman _____

Jesse Farris _____

Steve Felton _____

Jennifer Foote _____

Stephen Heath, Chairman _____

Fund	Amount
GENERAL FUND	\$ 191,257.86
FOOD SERVICE	\$ 11,932.40
FEDERAL FUNDS	\$ 6,065.86
OTHER FUNDS (TRUST FUND)	<u>\$</u>
	\$ 209,256.12

Ashland School District

Date	2/7/2023				
Manifest #	2016		2022-2023		
CHECK NUMBER	CHECK DATE	VENDOR NUMBER	VENDOR NAME	AMOUNT	DESCRIPTION
30754	02/07/2023	20616	3 LAKES LANDSCAPING	2,950.00	December 2022 Snow Removal
30755	02/07/2023	21019	A.C.E. MECHANICAL LLC	1,348.24	Repair Toilet and Washing Machine
30756	02/07/2023	20959	WILLIAM G. ABBOTT V	139.00	12/6 & 12/9/22 Basketball Official
30757	02/07/2023	20197	SYNCB/AMAZON	1,038.80	Miscellaneous Supplies as Needed by T. Paquette, J. McGettigan, M. Lambert, R. Tryder, C. Tower and C. Busnach
30758	02/07/2023	20011	ASHLAND ELECTRIC DEPARTMENT	2,132.50	11/10-12/9/22 Electric
30759	02/07/2023	20013	BELLETETES INC	436.42	Miscellaneous Building Supplies
30760	02/07/2023	20015	ASHLAND STUDENT FUNDS	2,083.75	Student Funds Reimbursement for Winter Rec Activities
30761	02/07/2023	20245	TRUSTEES OF THE TRUST FUNDS	75,000.00	Deposits to Sped Trust Fund (\$20k), Maintenance Fund (\$50k) and Homeless Transportation Fund (\$5k)
30762	02/07/2023	20016	ASHLAND WATER & SEWER DEPARTMENT	40.00	Backflow Inspection
30763	02/07/2023	21129	KELLY AVERY, PETTY CASH	32.29	Petty Cash Reimbursement
30764	02/07/2023	20018	BENEFIT STRATEGIES LLC	19.00	January FSA Administration Fees
30765	02/07/2023	20019	VOYA CLAIMS FUNDING	1,746.55	December 2022 Claims Billing
30766	02/07/2023	20046	BLICK ART MATERIALS	17.68	Art Supplies
30767	02/07/2023	21240	CHRISTINE BUHRMAN	46.00	1/6/23 Basketball Official
30768	02/07/2023	20581	BUREAU OF EDUCATION & RESEARCH	1,116.00	Teacher Workshops
30769	02/07/2023	20672	FRESH PICKS CAFE LLC	11,932.40	February 2023 Food Service
30770	02/07/2023	20675	CONNECTION FINANCIAL SERVICES	683.26	Chromebook Lease Payment
30771	02/07/2023	20036	CONWAY GROUP	770.65	Copier Contract 7/15/22-4/6/23
30772	02/07/2023	21151	DRUMMOND WOODSUM	326.56	December Legal Fees
30773	02/07/2023	20568	DUNSTAN PEDIATRIC SERVICES	5,475.00	November Occupational Therapy
30774	02/07/2023	20944	DURHAM SCHOOL SERVICES	6,993.27	December Transportation
30775	02/07/2023	20054	ENGRAVING & AWARDS OF NE, INC.	282.22	Student Warrior Awards
30776	02/07/2023	20162	CONSOLIDATED COMMUNICATIONS	133.54	12/12/22-1/11/23 Phone Service
30777	02/07/2023	20925	FIRSTLIGHT FIBER	505.79	January 2023 Internet Service
30778	02/07/2023	20058	FOLLETT LIBRARY RESOURCES	504.83	Library/Classroom Books
30779	02/07/2023	20614	GREATAMERICA FINANCIAL SERVICES	300.84	January 2023 Phone Lease
30780	02/07/2023	21156	STACEY KEELER HAGGETT	4,988.75	Sept - Nov 2022 Teacher of the Deaf Services
30781	02/07/2023	20086	HEALTHTRUST	50,396.92	February 2023 Health/Dental Insurance
30782	02/07/2023	21199	HEAR TO LEARN	177.50	December Audiology Services
30783	02/07/2023	21236	PAUL HOGAN	93.00	12/12/22 Basketball Official
30784	02/07/2023	20644	INSTITUTE FOR EDUCATIONAL DEVELOPMENT	279.00	Teacher Workshop
30785	02/07/2023	20079	JW PEPPER & SON, INC.	165.00	Sheet Music
30786	02/07/2023	21239	ARLENE KEARNS	720.00	NHTI Course Reimbursement
30787	02/07/2023	20943	MAURA KING	122.50	January Mileage Reimbursement
30788	02/07/2023	20510	LEN LAVIN	93.00	1/4/23 Basketball Official
30789	02/07/2023	21073	MICHAEL LIVERNOIS	93.00	12/6/22 Basketball Official
30790	02/07/2023	20500	SCOTT W MILLER	93.00	1/4/23 Basketball Official
30791	02/07/2023	20172	NH RETIREMENT SYSTEM	4,325.37	NHRS Payment
30792	02/07/2023	21237	MICHELLE NOLAN	232.00	12/8, 12/12 & 1/6/23 Basketball Official
30793	02/07/2023	20997	NORTHEAST RECORD RETENTION, LLC	45.50	January Shredding Service
30794	02/07/2023	21068	GREG PAQUETTE	4,000.00	Deposit for Structural Support for Ventilation Units
30795	02/07/2023	20492	PEDIATRIC PHYSICAL THERAPY, INC.	3,995.68	November and December 2022 Physical Therapy
30796	02/07/2023	20127	PRIMEX	112.06	Jan 2023 Unemployment Compensation
30797	02/07/2023	21154	RIVISTAS SUBSCRIPTION SERVICES	77.80	Magazine Subscriptions
30798	02/07/2023	21085	ROBERGE AND COMPANY, PC	1,237.50	Audit Services
30799	02/07/2023	20950	PHILLIP SANGUEDOLCE	5,520.00	November & December Psychological Services
30800	02/07/2023	20136	SAU #2	592.15	December Indirect Costs and 12/24/22-1/23/23 Principle Cell Phone
30801	02/07/2023	20140	SCHOOL SPECIALTY, INC.	135.01	School Supplies
30802	02/07/2023	20846	SOUTHERN NEW HAMPSHIRE UNIVERSITY	1,350.00	Teacher Coursework Registration
30803	02/07/2023	20143	SOULE, LESLIE, KIDDER	1,053.00	December Legal Fees
30804	02/07/2023	20557	SQUAM LAKES NATURAL SCIENCE CENTER	225.00	Field Trip - January
30805	02/07/2023	20110	STATE OF NH-CRIMINAL RECORDS	48.25	Criminal Background Check
30806	02/07/2023	21177	STONE ROAD ENERGY LLC	10,263.78	January Fuel
30807	02/07/2023	20804	KYLE R. UNDERWOOD	139.00	12/8 & 12/9/22 Basketball Official
30808	02/07/2023	20877	WASTE MANAGEMENT OF	433.57	Feb 2023 Waste Removal Services
30809	02/07/2023	20743	WILLIAM J. WHITE EDUCATIONAL & BEHAVIORAL CNS	1,527.53	January 2023 Behavioral Services
30810	02/07/2023	21206	XEROX FINANCIAL SERVICES	666.66	11/15/22-1/14/23 Copier Lease

209,256.12