

Request for Bids (RFB)

Engine Exhaust Removal System for Brandon Fire District No. 1

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ISSUED: June 15, 2026 @ 9 AM
DEADLINE: July 6, 2026 @ 12 PM
BID OPENING: July 9, 2026 @ 6:30 PM

I. Introduction

The Brandon Fire District No. 1 (hereby “BFD No. 1”) has received funding through the Municipal Energy Resilience Program (MERP), administered by the State of Vermont Department of Buildings and General Services (BGS), to implement energy efficiency and resiliency measures at the **Fire Department Station (61 Franklin Street)** and the **Fire District Office (59 Franklin Street)**. Part of the BFD’s No. 1 Scope of Work for MERP involves installing an exhaust airflow removal system, which will include sufficient Energy Recovery Ventilation (ERV) units to cover 70,200 cubic feet of space in the Fire Department truck bays. The task is based on an April 2026 evaluation of how existing inefficient ventilation procedures affect current heating loads.

Sealed hardcopy bids are due by 12:00 noon on July 6, 2026, and must be delivered to the Fire District Office at 59 Franklin Street, Brandon, VT 05733. Sealed envelopes must be addressed to the attention of the Prudential Committee. The bid title and bid opening time must be clearly marked on the outside of the envelope.

Every bid received prior to the stated bid submission deadline will be publicly opened and read aloud by the Prudential Committee at its regular meeting on Thursday, July 9, 2026. Bidders need not be present at bid opening; however, the Prudential Committee will consider and award the contract to the successful bidder at this time. The awarded bidder will be notified in writing (by email or physical letter) as soon as possible after the July 9 meeting.

II. Project Overview

This work consists of installing Energy Recovery Ventilation (ERV) units to remove exhaust airflow in the Fire Department truck bays. Before submitting a proposal, bidders should fully inform themselves of all existing conditions, including a review of the Scope of Work from the MERP Implementation Grant award (see Appendix A) and the Fire Department Heating Load Impact Report (see Appendix B). A copy of the MERP Energy Assessment Report is available as a separate attachment and can be provided via email upon request.

Construction must be completed no later than November 30, 2026.

III. Scope of Work

The items in italics are the reportable tasks to be performed through this contract. See the Fire Department Heating Load Impact Report (Appendix B) for more details.

Brandon Fire District No. 1 Fire Department

1. *Installation of a makeup Air Unit (MAU): A mechanically supplied and tempered makeup air system that preheats incoming air would significant reduce current existing effective temperature differentials and the associated heating load.*
2. *Air Intake Improvements: If funding allows, replace the ad hoc door opening with a dedicated intake louver or ducted system to improve airflow distribution and occupant comfort.*
3. *Heat Recovery: If funding allows (and where feasible) installation of a heat recovery system (e.g., air-to-air heat exchanger) to potentially reduce ventilation-related heat loss by 50-70%*



IV. Proposal Requirements

All responses to the RFB shall include the following information:

1. **Cover Letter** – A letter of interest and a summary of qualifications, including a brief description of the firm and recommended approaches, processes, and deliverables for the project.
2. **Proposed Schedule** – Provide a schedule that includes completion of work tasks and deliverables, including key meetings, and complies with the timeframe provided above.
3. **Project Budget** – Provide a detailed budget itemized by task and team member, including a not-to-exceed fee for the proposed scope of work. Each task should be listed separately as a line item, including soft costs. The Cost Proposal must include:
 - a. Detailed breakdown of costs per unit, including design, equipment, installation,
 - b. Permitting fees and/or any additional anticipated expenses.
 - c. Information on potential financing options, incentives, or rebates that may apply.
 - d. Acknowledgment of milestones and deadlines.
 - e. Statement of warranties: manufacturers and installers.

In addition, it is required that the proposal contain a bid guarantee of 5% (\$60,000) and performance and payment bonds in the amount of 100% of the contract price from the contractor awarded the bid.

4. **Qualifications and Staffing** – Provide a qualifications profile for the lead consultant and sub-consultants, including an indication of the lead consultant and the role of each consultant on the team. Also provide detailed information for each consultant, including contact information, the firm name, year established, and a description of relevant experience on similar projects for each firm.
5. **References** – A minimum of three (3) professional references for whom a similar project has been completed in the last ten (10) years. The reference information will include the name of the company or individual, mailing address, email, and phone number.
6. **Insurance** – A certificate of insurance naming the Brandon Fire District 1 as certificate holder and a completed W9 form must be provided with the bid. The submitted proof of insurance must meet the following minimum requirements:
 - a. Commercial General Liability - \$1,000,000 General Occurrence, \$2,000,000 Aggregate
 - b. Automobile Liability - \$1,000,000 Each Accident
 - c. Worker's Compensation and Employer's Liability - \$1,000,000

V. Proposal Selection

Price and rate quotations shall be obtained from at least two qualified vendors to ensure BFD No. 1 has received a fair and reasonable price. Vendors will be selected based on cost; ability to perform within the specified time limit; bidder's experience and reputation, including any past performance for BFD No. 1; quality of materials and services specified in the bid; bidder's ability to meet other terms and conditions, including insurance and bond requirements; bidder's financial responsibility; bidder's availability to provide future service, maintenance, and support; nature and size of the bidder; bidder's indication of acceptance of wages in the current

wage determination provided as part of the Request for Bids; contract provisions that are acceptable to the BFD No. 1; and any other factors that the Prudential Committee determines are relevant and appropriate in connection with the given project or service.

VI. Special Conditions

1. Bid Submissions – All bids must be submitted in sealed envelopes, addressed to BFD No. 1 in care of the Prudential Committee, and plainly marked with the name of the bid and the time of the bid opening. Any bid may be withdrawn in writing prior to the scheduled time for opening the bid. Any bids received after the specified date and time will not be considered and will be returned to the bidder unopened.
2. Self-Certification – A bidder submitting a bid thereby certifies that the bid is made in good faith without fraud, collusion, or connection of any kind with any other bidder for the same work, and that the bidder is competing solely on their own behalf without connection with or obligation to any undisclosed person or firm.
3. Exceptions – The bidder shall bid to specifications, and any exceptions must be noted by the bidder.
4. Pre-Bid Meeting – No pre-bid meeting will be held. Bidders are encouraged to familiarize themselves with all existing conditions by visiting the site at their convenience or by scheduling an appointment with the Fire Chief. The failure of a bidder to do any of the foregoing shall in no way relieve them of any obligation with respect to their bid.
5. Change Orders – If specification changes are made prior to the close of the bid process, the Request for Bids will be amended and notice shall be sent to any bidder who has already submitted a bid. Once a bid has been accepted, if changes to the specifications become necessary, the Prudential Committee or its authorized agent will prepare a change order specifying the scope of the change. Once approved, the contractor and an authorized agent of the Brandon Fire District No. 1 must sign the change order.
6. State and Federal Provisions – It is the policy of the State of Vermont that Disadvantaged Business Enterprises (DBE) have the opportunity to participate to the maximum extent feasible in procurement and contracting. Furthermore, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, the Brandon Fire District No. 1 hereby notifies all respondents that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

APPENDIX A: SCOPE OF WORK

Brandon Fire District No. 1

Brandon Fire District No. 1 Fire Department upgrades include:

1. HVAC: ~~Replace the existing propane boiler with heat pumps as recommended by engineering design and/or the installer.~~ SCOPE AMENDMENT: REVISION of 01155_A172_5733_F_BRANDONFDX_I Attachment A, Brandon FD Fire Department, 1. HVAC, ***Install heat pumps to supplement the existing propane boiler as recommended by engineering design and/or the installer.***
 - a. SCOPE AMENDMENT: ADDITION of 01155_A172_5733_F_BRANDONFDX_I Attachment A, Brandon FD Fire Department, 1. HVAC, a., ***Install programmable thermostats.***
 - b. SCOPE AMENDMENT: ADDITION of 01155_A172_5733_F_BRANDONFDX_I Attachment A, Brandon FD Fire Department, 1. HVAC, b., ***Install ERV system(s).***
2. Envelope:
 - a. Air sealing.
 - b. Addition of insulation as recommended by the engineering design and/or the installer.
3. Lighting will be upgraded to LED with the addition of automated lighting controls.
4. ~~ADA improvements will be made to address issues with building entry, movement within the building, bathrooms, and improved access to all public locations. *Only 20% of the construction costs can be expended on ADA upgrades.~~ SCOPE AMENDMENT: REMOVAL of 01155_A172_5733_F_BRANDONFDX_I Attachment A, Brandon FD Fire Department, 4. ADA.
5. Soft Costs will be used to pay for permits, architectural/engineering design, project management, and clerking.
6. EV Chargers will be installed in accordance with current standards and configured based on engineering design and/or installer recommendations.
7. Solar Panel will be installed in accordance with current standards and configured based on engineering design and/or installer recommendations.
8. Other: This category is to include the installation of a battery system for both emergency backup.

The Brandon Fire District No. 1 Water Department upgrades include:

1. HVAC: ~~Replace the existing oil boiler with a sustainable alternative as recommended by engineering design and/or the installer.~~ SCOPE AMENDMENT: REVISION of 01155_A172_5733_F_BRANDONFDX_I Attachment A, Brandon FD Water Department, 1. HVAC, to ***Install heat pumps to supplement the existing propane boiler as recommended by engineering design and/or installer.***
 - a. SCOPE AMENDMENT: ADDITION of 01155_A172_5733_F_BRANDONFDX_I Attachment A, Brandon FD Water Department, 1. HVAC, a. ***Replace the damper system for the existing furnace.***
 - b. SCOPE AMENDMENT: ADDITION of 01155_A172_5733_F_BRANDONFDX_I Attachment A, Brandon FD Water Department, 1. HVAC, b. ***Install programmable thermostats.***
2. Envelope:
 - a. Air sealing.
 - b. ~~Addition of insulation as recommended by the engineering design and/or the installer.~~ SCOPE AMENDMENT: REVISION of 01155_A172_5733_F_BRANDONFDX_I Attachment A,

Brandon FD Water Department, 2. Envelope, b. to **Addition of insulation as recommended by the engineering design and/or installer, this includes framing painting, and drywall on exterior walls and the mechanical room.**

- c. SCOPE AMENDMENT: ADDITION of 01155_A172_5733_F_BRANDONFDX_I Attachment A, Brandon FD Water Department, 2. Envelope, c. **Replace existing windows with new, energy efficient models.**
3. Lighting will be upgraded to LED with the addition of automated lighting controls.
4. ADA improvements will be made to address issues with building entry, movement within the building, bathrooms, and improved access to all public locations. *Only 20% of the construction costs can be expended on ADA upgrades.
5. Soft Costs will be used to pay for permits, architectural/engineering design, project management, and clerking.
6. Solar Panel will be installed in accordance with current standards and configured based on engineering design and/or installer recommendations.
7. Other: This category is to include the installation of a battery system for both emergency backup.

APPENDIX B: FIRE DEPARTMENT HEATING LOAD IMPACT REPORT

Brandon Fire Department 61 Franklin st, Brandon VT 05733-3/11/26

1. PURPOSE

The purpose of this report is to evaluate the heating load impact associated with operation of an exhaust ventilation system in a commercial garage facility, and to quantify the resulting heat loss under winter design conditions. This analysis is intended to support discussions with municipal authorities regarding system performance, energy use, and potential design improvements.

2. BUILDING DESCRIPTION

- Building Type: Commercial Garage
 - Dimensions: 60 ft (W) × 90 ft (L) × 14 ft (H)
 - Total Volume: 75,600 ft³
 - Overhead Doors:
 - Six (6) sectional overhead doors
 - Approximate size: 12 ft (H) × 9 ft (W) each
 - Total door area: 648 ft²
 - Construction (Typical 1990s Commercial):
 - Exterior Walls: Insulated stud wall, approx. R-13
 - Roof/Ceiling: Insulated assembly, approx. R-19
 - Overhead Doors: Insulated, approx. R-7
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3. DESIGN CONDITIONS

- Indoor Heating Setpoint: 65°F
- Outdoor Winter Design Temperature: -13°F
- Temperature Differential (ΔT): 78°F

Design conditions are consistent with regional winter design data (Manual J methodology).

4. VENTILATION SYSTEM DESCRIPTION

- Exhaust Fan: Greenheck Model SCF3-24-627-C3
- Estimated Airflow Capacity: ~7,000 CFM (based on typical performance for model class)
- Operation: Manually controlled, intermittent use
- Makeup Air Provision: None (passive intake via partially opened overhead door)

5. METHODOLOGY

Heat loss calculations were performed using standard HVAC engineering methods:

5.1 Ventilation Heat Loss

$$Q = 1.08 \times \text{CFM} \times \Delta T$$

Where:

Q = heat loss (BTU/hr)

CFM = airflow rate

ΔT = indoor-outdoor temperature difference (°F)

5.2 Envelope Heat Transfer

$$Q = \frac{A \times \Delta T}{R}$$

Where:

A = surface area (ft²)

R = thermal resistance

6. CALCULATIONS

6.1 Ventilation Heat Loss

$$Q = 1.08 \times 7000 \times 78$$

$$Q = 590,000 \text{ BTU/hr (approx.)}$$

6.2 Air Change Rate

$$\begin{aligned} \text{ACH} &= \frac{\text{CFM} \times 60}{\text{Volume}} \\ &= \frac{7000 \times 60}{75600} \\ &= 5.6 \text{ air changes per hour} \end{aligned}$$

This indicates full air replacement approximately every 11 minutes.

6.3 Envelope Heat Loss

Walls (net of doors):

Area = 3,552 ft²

[

$Q \approx 21,300 \text{ BTU/hr}$

]

Roof:

Area = 5,400 ft²

[

$Q \approx 22,200 \text{ BTU/hr}$

]

Overhead Doors:

Area = 648 ft²

[

$Q \approx 7,200 \text{ BTU/hr}$

]

6.4 Total Envelope Loss

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$Q_{\text{total, envelope}} \approx 50,700 \text{ BTU/hr}$

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7. TOTAL HEATING LOAD

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Component	Heat Loss (BTU/hr)
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Ventilation Load	590,000
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Envelope Load	50,700
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Total Load	640,700
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8. FINDINGS

1. Ventilation Dominates Heat Loss

Mechanical exhaust accounts for approximately 92% of total building heat loss under design conditions.

2. High Air Exchange Rate

The system induces approximately 5.6 air changes per hour, significantly exceeding typical background infiltration rates.

3. Lack of Controlled Makeup Air

In the absence of a dedicated makeup air system, replacement air is introduced through a partially opened overhead door, resulting in:

- Direct infiltration of unconditioned outdoor air (-13°F)
- Reduced thermal comfort near intake points
- Inefficient air distribution and mixing

4. Heating System Impact

Maintaining indoor conditions during fan operation requires approximately 640,000 BTU/hr of heating capacity.

9. DISCUSSION

The analysis demonstrates that the primary driver of heating demand is not the building envelope, but rather the mechanical exhaust system. While the building insulation performs within expected parameters for its construction era, the ventilation strategy results in continuous introduction of extreme cold air during winter operation.

The current configuration effectively conditions large volumes of outdoor air without energy recovery or tempering, leading to substantial energy consumption and reduced system efficiency.

10. RECOMMENDATIONS-Involving HVAC industry.

10.1 Installation of Makeup Air Unit (MAU)

A mechanically supplied and tempered makeup air system is strongly recommended. Preheating incoming air would significantly reduce effective temperature differential and associated heating load.

10.2 Ventilation Control Optimization

Consider integration of demand-controlled ventilation using CO and/or NO₂ sensors to limit exhaust operation to periods of actual need.

10.3 Air Intake Improvements

Replace ad hoc door opening with a dedicated intake louver or ducted system to improve airflow distribution and occupant comfort.

10.4 Heat Recovery (Optional)

Where feasible, installation of a heat recovery system (e.g., air-to-air heat exchanger) may reduce ventilation-related heat loss by 50–70%.

11. CONCLUSION

Under winter design conditions, the operation of the exhaust fan results in a total building heat loss of approximately 640,000 BTU/hr, with the vast majority attributable to ventilation.

The absence of a controlled makeup air system significantly amplifies this effect. Implementation of a tempered makeup air strategy represents the most effective means of reducing energy consumption and improving overall system performance.

Prepared By:

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Hulbert Supply.

Mechanical Systems Analysis

(AI-Assisted)

Date: April 8, 2026