



REQUEST FOR PROPOSALS

RFP TITLE: Boston Bar Fire Hall I Ventilation Installation

RFP NUMBER: RFP-26028

DATE ISSUED: October 08, 2026

CLOSING TIME/DATE: 1:00 pm, October 28, 2026

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Part A - INTRODUCTION

A.1 RFP Overview

The Boston Bar Fire Hall 1, located at 47715 Alder Road, Boston Bar, BC, recently underwent indoor air quality testing which identified deficiencies in the building's ventilation within the fire apparatus bay. To address these concerns and improve workplace health and safety conditions, ventilation system upgrades are required.

The Fraser Valley Regional District (FVRD) is seeking proposals from qualified and experienced proponents to supply, install, test, and commission an integrated ventilation system for the fire engine bay at Boston Bar Fire Hall 1. The proposed system must effectively improve air circulation and air quality within the apparatus bay, reduce exhaust contaminant exposure, and meet all applicable codes, standards, and manufacturer recommendations.

RFP Framework

The purpose of this Request for Proposals (RFP) is to solicit submissions from Proponents with qualifications, expertise, and experience in installation and maintenance of heating, venting and cooling (HVAC) systems as well as the related electrical, mechanical and civil work.

Proponents are encouraged to submit Proposals that demonstrate technical expertise in mechanical systems, air exchange, system design and the relevant portions of BC Building Code. The successful Proponent, if any, will be responsible for ventilation system design, the necessary permitting, provision and installation of appropriate size/capacity equipment, automating overhead doors, gas detection and ventilation as well as the related trade work, finishing and system commissioning.

The FVRD is not obligated in any manner whatsoever to any Proponent under the terms of this RFP until a written agreement has been executed related to an approved Proposal. Furthermore, the FVRD reserves the right to cancel this RFP at any time for any reason whatsoever without any liability to any party for any claims of any kind whatsoever. All submissions received under this RFP will remain confidential, subject to any statutory requirements for disclosure in accordance with the *Freedom of Information and Protection of Privacy Act of British Columbia*.

Best Overall Value to the FVRD

This RFP is intended to invite Proposals offering the best value for money and the best overall approach to the Scope of Work. The FVRD expressly reserves the right to accept the Proposal deemed most favorable to the interests of the FVRD. Furthermore, the FVRD reserves the right to accept or reject any or all submissions at any time; to modify the Project schedule; or to cancel the RFP for any reason whatsoever without compensation to any Proponent. The FVRD will consider alternate Proposals and pricing in order to achieve Project objectives, other efficiencies, and cost savings consistent with the best value for money principles in the public sector procurement context.

Part B- OBJECTIVES

B.1 Scope of Services

The Services consist of providing and installing an integrated ventilation system at Boston Bar Fire Hall as described in Straiton Engineering's August 14, 2026, FVRD Fire Hall Ventilation Study and includes:

- Supply and installation of main engines bay exhaust ventilation, gas monitoring and makeup air supply systems;
- complete integration of systems above as well as with overhead door circuits;
- Installation of a timer to allow for manual adjustment of ventilation runtime;
- Installation of a manual ventilation shut off switch;
- Integration of lights and ventilation circuits to engage ventilation at reduced capacity when lights are turned on;
- Integration of overhead door circuits and ventilation circuits to engage ventilation at full capacity when overhead doors open;
- provision for all necessary trade work, services, connections and finishing work;
- provision for all necessary permitting including FVRD Building permitting;
- provision of installation, testing and commissioning of all equipment and components necessary to complete the work above and that laid out in Section 2.3 of the (attached) August 14, 2026, Straiton Report;
- restoration of the work site to a state of order that meets or exceeds that of its previous condition;
- Completion prior to December 31, 2026

(collectively, the "**Services**") all to be provided with consideration being given to a focus on value to the FVRD and Project budget.

Part C - INSTRUCTIONS AND INFORMATION FOR PROPONENTS

C.1 Closing Date and Location

Proposals must be received by 1:00 pm (Pacific time) on October 28, 2026 ("Closing") at the following address:

Fraser Valley Regional District
 Attn: Deanne Bozek-Fortin, Protective Services Specialist
 1 - 45950 Cheam Avenue
 Chilliwack, BC V2P 1N6
 Email: fireservices@fvrd.ca

The time for Closing will be conclusively deemed to be the time shown on the clock used by the FVRD for this purpose.

C.2 Form of Proposal Submissions

Proponents are requested to submit the following copy/ies of their proposal:

1. one electronic copy in Adobe PDF format. The size of the PDF document shall not exceed 9.8 MB to ensure successful transmit by email; or
2. one printed copy.

Proponents are requested to deliver Proposals by email to fireservices@fvrd.ca. The FVRD is not liable for any proposal not received due to technical details including failure to send, or delivery to a mailbox other than an inbox. Please include the RFP number and RFP title in the subject line. If delivered by hand, please ensure the proposal is enclosed in a sealed envelope with the RFP number and title and Proponent's name and address. In order to be considered, Proponents must submit Proposals in response to this RFP by email or in person as outlined above.

C.3 Mandatory Requirements

Proponents must include in their Proposal, the following information:

1. Completed and signed Form of Proposal set out in Schedule B;
2. Proposed Equipment – A comprehensive list of proposed equipment including make, model and specifications as set out in Schedule C;
3. Proponent's Experience – a list of completed or current work requiring services comparable to the Services sought in this RFP, including a brief description of the work, approximate contract value and references for each service provided as set out in Schedule D;
4. detailed costs for the Proponent's provision of the Services in Canadian dollars, inclusive of all costs, expenses and charges and applicable taxes; and
5. sufficient detail to allow the FVRD to determine the Proponent's position from the documents received, such as, details of the Proponent's team, including their roles and responsibilities and reporting relationships, understanding of the Project and proposed work plan for carrying out the Services.

C.4 Site Viewing

The fire hall will be available for viewing on October 21, 2026, as follows:

- Boston Bar Fire Hall 1 – 47715 Alder Road, Boston Bar, from 12:00 pm till 1:30 pm;

Individuals who choose to visit the site are requested to park at the side of the building and not in front of the bay doors.

C.5 Enquiries

All inquiries and notices related to this RFP, including any requests for information and clarification, are to be directed in writing to the contact person ("**Contact Person**") indicated below:

Contact Person: Dave Driediger, Manager of Regional Facilities
 Address: 1 - 45950 Cheam Avenue
 Chilliwack, BC V2P 1N6
 Email: ddriediger@fvrd.ca

Inquiries and responses will be recorded and may be distributed to Proponents at the discretion of the FVRD. Clarifications, comments, revisions or any other information regarding this RFP obtained by a Proponent from any source other than from the Contact Person is not authorized and should not be relied upon. Enquiries and responses will be recorded and may be distributed to all Proponents at the discretion of the FVRD. Clarifications, comments, revisions or any other information regarding this RFP obtained by a Proponent from any source other than from the Contact Person is not authorized and should not be relied upon.

Part D - TERMS AND CONDITIONS OF RFP

D.1 General

The terms and conditions in this Part E will apply to this RFP. Submission of a Proposal in response to this RFP indicates acceptance of all the terms and conditions contained herein and included in any addenda issued by the FVRD for this RFP. Proposals that contain provisos which contradict or alter any of the terms and conditions of this RFP will be disregarded and deemed to have not been written in the Proposal.

D.2 Proposal Validity

Proposals will be open for acceptance by the FVRD for at least 90 days after the date of Closing.

D.3 Addendum

All subsequent information regarding this RFP including changes made to this document will be posted on BC Bid for Proponents to access. It is solely the responsibility of the Proponents to check BC Bid from time to time to ensure that they have all amendments to this RFP in the form of addenda and to ensure that they have obtained, read, and understood the entire RFP including all addenda that may have been issued prior to Closing.

D.4 Requests for Clarification

Proponents may seek clarification in writing from the FVRD Contact Person regarding Project requirements, deliverables and the RFP process. A written addenda will be issued as to issues of materiality which may arise from a request for clarification. The deadline for making a written request for clarification is 11:00 am on October 23, 2026.

D.5 Evaluation and Selection Method

The evaluation of the RFP will be conducted by a committee formed by the FVRD and may include, at the FVRD's sole discretion, employees, consultants and contractors. Proposals will be evaluated on the basis of the overall best value to the FVRD based on quality, service, past performance, price and any other criteria set out herein including, but not limited to:

1. financial terms including but not limited to hourly and weekly rates and payment terms;

2. financial capabilities of the Proponent;
3. corporate and technical capability of the Proponent to provide the Services;
4. experience and performance of similar projects;
5. history of past performance and dealings with the FVRD; and
6. references.

D.6 Acceptance and Rejection of Proposals

This RFP shall not be construed as an agreement to purchase goods or services. The FVRD is not obligated to enter into an Agreement (defined herein) with the Proponent who submits the lowest priced Proposal or with any Proponent.

D.7 Late Proposals

Proposals will be marked with their receipt time at the Closing Location. Only complete Proposals received and marked by the Closing time will be considered to have been received on time. Late proposals will not be considered or evaluated and may be returned to the Proponent.

D.8 Amendment or Withdrawal of Proposals

Proponents may amend or withdraw their Proposal in writing any time prior to Closing. Upon Closing, all Proposals become irrevocable in accordance with section D.2. The FVRD will be under no obligation to receive further information after Closing, whether written or verbal, from any Proponent.

D.9 FVRD's Rights and Reservations

The FVRD reserves the right to:

1. reject any or all Proposals;
2. reject any Proposal that is incomplete, that contains erasures or corrections that is not signed by an authorized signatory of the Proponent or that fails to comply with the mandatory requirements of this RFP;
3. in the event that only one proposal is submitted, to return the Proposal unopened;
4. modify the terms of this RFP at any time in the FVRD's sole discretion;
5. to require clarification of the information set out by one or more of the Proponents in respect of the Proposals submitted; and
6. communicate with, meet with or negotiate with any one or more of the Proponents respecting their Proposals or any aspect of the proposed work;
7. Award to one, or multiple Proponents, or accept part, or all of a Proposal

D.10 Cancellation of RFP

The FVRD may cancel this RFP at any time prior to or after Closing. In the event the FVRD cancels this RFP, the FVRD shall have the right to seek to procure the same services or similar services at any time

through any means the FVRD deems appropriate. No Proponent shall acquire any rights or interests in any subsequent procurement process undertaken by the FVRD.

D.11 Waiver of Non-Compliance

The FVRD may waive any non-compliance with the RFP and may elect to retain for consideration Proposals which are non-conforming, which do not contain the content or form requested by this RFP or which have not strictly complied with the process for submission set out herein.

D.12 Proponent's Costs

Each Proponent is solely responsible for its own costs and expenses associated with its participation in this RFP, including but not limited to, conducting investigations, attending briefings, preparing and delivering its Proposal, communicating with the Contact Person prior to Closing and during Proposal evaluation, and for any subsequent processes or negotiations with the FVRD that may occur.

D.13 Limitation of Liability

By submitting a proposal, each Proponent irrevocably agrees that the FVRD shall not be liable to any Proponent or any person whatsoever, for any claims of any nature (in contract, in tort, or otherwise), for any costs, expenses, compensation, damages, or anything whatsoever, including without limitation, costs and expenses associated with the Proponent's preparation and submission of their Proposal, their participation in this RFP, for loss of revenue, opportunity or anticipated profit, arising in connection with its Proposal, this RFP, any subsequent processes or opportunity, any contract, or any matter whatsoever.

D.14 Negotiation

The FVRD reserves the right to negotiate with the preferred Proponent, or any Proponent, on any details, including changes to specifications and price. If specifications require significant modification, all Proponents shall have the opportunity to adjust their Proposals or re-submit altogether, as determined by the FVRD in its sole discretion.

D.15 Errors and Omissions

While the FVRD has used considerable efforts to ensure information in this RFP and otherwise provided directly in association with this RFP is accurate, the information is supplied solely as a guideline for Proponents. The information is not guaranteed or warranted to be accurate by the FVRD, nor is it necessarily comprehensive or exhaustive. Nothing in this RFP is intended to relieve Proponents from the responsibility for conducting their own investigation and forming their own opinions with respect to the subject matter of this RFP.

D.16 Conflict of Interest

Proponents shall disclose any potential conflict of interest and existing business relationship they may have with the FVRD, its elected or appointed officials or employees.

D.17 Confidentiality

All Proposals become the property of the FVRD and will not be returned to the Proponents, except as expressly provided for herein. All Proposals will be held in confidence by the FVRD unless disclosure is otherwise required by law.

D.18 No Lobbying

Proponents and their agents are not permitted to contact any member of the FVRD Council or staff with respect to this RFP, except as expressly provided for herein. Proponents will not offer entertainment, gifts, gratuities, discounts, or special services, regardless of value, to any employee or elected official of the FVRD. The FVRD reserves the right to disqualify any Proponent from participation in this RFP that acts in contravention of this requirement.

D.19 Contract Award

This RFP should not be construed as an agreement to purchase goods or services. By submitting a Proposal, the Proponent agrees that should it be identified as the preferred Proponent, it will enter into negotiations, if required, for the purpose of concluding a Contract.

If a written Contract cannot be negotiated and executed by both parties within 90 days of notification of the successful Proponent, or such longer period as the parties may mutually agree, the FVRD may, at its sole discretion at any time thereafter, terminate negotiations with that Proponent, enter into negotiations with any other Proponent or terminate the RFP process and not enter into a Contract with any of the Proponents.

D.20 Definition of Contract

Notice in writing to a Proponent that it has been identified as the preferred Proponent and the subsequent full execution of a written contract will constitute a contract for the goods and/or services contemplated by this RFP, and no Proponent will acquire any legal or equitable rights or privileges relative to the goods or services until the preferred Proponent and the FVRD have both executed a written Contract.

D.21 Form of Contract

The Contract will comprise a form of written agreement based on the FVRD's standard form agreement document, as may be amended by mutually agreed supplementary conditions, and incorporate the FVRD's general conditions and specifications, if any.

Schedule A – BOSTON BAR STRAITON REPORT

August 14, 2026, Straiton Engineering FVRD Fire Hall Ventilation Study Boston Bar Fire Hall



FVRD Fire Hall Ventilation Study Boston Bar Fire Hall



Date: 2026-08-14
Project #: 25024.02
Client: Fraser Valley Regional District



EXECUTIVE SUMMARY

Straiton Engineering Ltd. has been retained to review both the main fire truck and rescue bays at the Boston Bar Fire Hall within the FVRD and provide recommendations for implementing new gas detection and ventilation systems to improve indoor air quality for the volunteer firefighter force.

To comply with provincial regulations, we recommend installation of a gas detection system in the combined fire truck and rescue truck bay area to monitor CO and NO₂ levels. Initial data collection will determine whether there is need for an active ventilation system, though such a system may be desirable regardless. Where installed, ventilation systems should integrate with gas detectors to automatically adjust airflow. Additional heating will be required to accommodate increased ventilation rates without subjecting the spaces to freezing conditions.

This approach ensures regulatory compliance and a safe working environment. The existing building structure, electrical infrastructure, and gas/propane supplies support these upgrades. With sufficient funding, we advise proceeding with the installation of both gas detection and ventilation systems. The recommendations herein do not form detailed engineering designs; complete design packages will be required prior to tendering or constructing these upgrades.



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1. INTRODUCTION

1.1. Purpose of Study

Straiton Engineering Ltd. (SEL) has been retained to conduct a study of existing building configuration, typical use patterns of diesel-engine fire and rescue trucks, and potential addition of new ventilation systems to improve health and safety conditions in the existing Boston Bar Fire Hall located at 47714 Alder Road in Boston Bar, BC.

The primary concern is ensuring a safe working environment for the largely volunteer force of firefighters using these facilities. The Canadian Centre for Occupational Health and Safety lists many gases, vapours, particles, and aerosols produced by the operation of diesel engines, and notes that adverse health effects due to exposure may range from coughing and irritation (short term) to lung and bladder cancer (long term)¹. Understanding exposure levels and implementing controls to limit exposures are important for long term health and safety.

1.2. Assumptions and Inputs

Partial record drawings (architectural only) were made available to us, and we have relied on these, our own photos and sketches from our site visit, and information provided by the Client, such as model of diesel engines and usage patterns for the fire trucks. We note that additional relevant information may be present but unknown at this time, such as concealed services, roof structure, envelope assemblies, and other details.

1.3. Prevailing Codes and Standards

The relevant codes and standards that govern health and safety requirements within a vehicle bay, as well as technical requirements for ventilation systems used to address vehicle exhaust, are listed below:

- 2024 BC Building Code ("BCBC")
- ACGIH Industrial Ventilation Manual of Recommended Practice
- ASHRAE 62.1: Ventilation and Acceptable Indoor Air Quality
- WorkSafeBC OHS Regulation Part 5: Chemical Agents and Biological Agents
- WorkSafeBC Guidelines G31.32: Vehicle Exhaust in Firehalls

1.4. Description of Existing Building

1.4.1. Building Form and Space Use

The Boston Bar Firehall is comprised primarily of a single truck garage space, which houses two fire truck bays in central and north positions, with a single rescue truck bay at the south end. There is an attached storage shed at the south-west corner of the building, supporting office/equipment/washrooms on the ground floor and an enclosed mezzanine with meeting and storage room. Drawings we received, dated

¹ CCOHS Chemicals and Materials: https://www.ccohs.ca/oshanswers/chemicals/diesel_exhaust.html

April 2023, indicate plans to remove mezzanine walls and open it up to the truck bay area as a storage platform. The construction date is unknown but assumed to be in the 1980's.

The building appears to be constructed of wood frame walls (faced with GWB and plywood) with sloped wood truss attic roof. The combined fire truck and rescue truck bay is approximately 41ft x 40ft, with a 18.5ft ceiling height.

We were informed that the building is generally unoccupied unless there is an active call in progress.

1.4.2. Propane Capacity and Existing Loads

There is an existing Guardian outdoor generator with 355 CFH propane input, as well as propane boiler of unknown capacity in outbuilding and 80 CFH propane furnace within the main truck bay. No other propane loads were noted on site. The main regulating valve has a maximum capacity of 1,100 CFH, and the existing propane tank has a 500 gallon capacity.

We believe the system has sufficient storage and delivery capacity to service some new loads, however it must be considered that more frequent refilling of the propane tank will be required during winter months. The propane supply company should be consulted prior to adding any additional loads onto the fuel system.

1.4.3. Existing HVAC Systems

The truck bay area is heated via a high efficiency, sealed combustion Goodman GMEC960803BNAA propane furnace of 80,000 btu/h capacity. The furnace has a short duct hood at the supply air connection, directing conditioned air towards the centre of the space. The return air connection is unducted, and there is no connection for fresh outdoor air.



Figure 1: Truck Bay Propane Furnace

The truck bay area has an existing exhaust fan of unknown capacity located at high level along the south wall (see Figure 2), which was inactive at time of review. A manual wall switch located at the north east corner of the truck bays did activate the fan. Based on the size and style of the fan, we estimate its



FVRD Fire Hall Ventilation Study
Boston Bar Fire Hall
2026-08-14

capacity to be in the range of 800-1,500 cfm at very low restriction levels (ie. with bay doors open). Since no fresh air intakes are present, we expect the actual flow rate with doors closed to be much lower, and the fan to be largely ineffective once a truck has left on a call and the doors are closed again.



Figure 2: Truck Bay Existing Exhaust Fan

There was also a second exhaust fan on the enclosed mezzanine level, but this fan had been packed with insulation and had been taken completely out of service. We do not recommend attempting to use this fan as part of the ventilation strategy.

1.4.4. Truck Engine Specifications

The following engine specifications were provided by the Client for the trucks used at this hall. We've indicated engine exhaust discharge orientations to inform discussions around potential source fume capture and dilution rates:

Rescue Truck:

- 2012 Ford F550 with 6.8L V10 gasoline engine – 362hp
 - Exhaust: discharges on passenger side behind rear wheel, backwards and to the right relative to vehicle travel direction

Fire Trucks:

- 2006 Freightliner engine with Cummins ISC, 8.3L 6cyl diesel engine – 330hp
 - Exhaust: discharges on passenger side in front of rear wheel, perpendicular to vehicle travel direction, with discharge point underneath chassis



- 1992 Ford CF 8000 engine with 7.8L L6 diesel engine – 240hp
 - Exhaust: discharges on driver side, in front of rear wheel, perpendicular to vehicle travel direction

Given the above, the locations with some potential for partial direct capture are:

- 1) Between the two fire trucks, and
- 2) Against the south wall, near the west end of the room

We have taken the truck with the largest horsepower rating as the basis for ventilation rate sizing calculations.

1.4.5. Fire Truck Usage Patterns

Based on information provided by FVRD, we understand that the trucks are typically operated as follows:

- All maintenance requiring engine operation is performed outdoors or offsite.
- The trucks are typically “off”, unless on an active call, and are not idled indoors for extended periods (more than a few minutes).
- Upon receiving a call, the truck engine may be on for up to five minutes while the door is opened and the firefighters prepare to respond. The overhead door is closed shortly after the truck leaves the bay.
- Upon returning from a call, the truck engine will be on long enough to park the vehicle. The overhead door is closed shortly after the truck is in place and the engine is turned off.

2. NEW VENTILATION SYSTEM STUDY

2.1. Code Requirements

A number of building code and regulatory requirements and recommendations from the documents listed in Section 0 apply to this building, and should be reviewed by any team looking to implement the recommendations of this report prior to awarding contracts or starting construction.

Firehalls are designated ‘post disaster’ buildings as per BCBC Division A, 1.4.1.2, unless exempted by the Authority Having Jurisdiction (typically the local municipality). This acknowledges the key role such buildings play in response to a major disaster. The existing building did not appear to have been constructed to this standard, however, so it is likely sensible to exempt additional work within the buildings from the associated increased structural support requirements. The BCBC does not stipulate prescriptive design practices for ventilation of such spaces other than to exercise “good engineering practice” while using ASHRAE 62.1 and the ACGIH manual for guidance.

While the ACGIH manual is not directly mandated by provincial regulation, it is widely considered the authoritative source on industrial ventilation system design and protection of workers from exposure of many typical airborne contaminants. The manual provides safe exposure concentrations for both long-term working environments and for a single 8-hour shift: these are Threshold Limit Value (TLV) and

time-weighted average (TWA), respectively. Airflow rates and system configurations are recommended based on maintaining indoor air contaminant concentrations below these safe exposure limits.

WorkSafeBC (WSBC) also provides some general requirements for vehicle bays:

WSBC OHS Regulation 5.72-5.74:

- “Whenever possible”, engines must be vented to the outdoors. Otherwise, assess exposure hazard and install “engineering controls” to limit exposure.

WSBC Guidelines G31.32:

- Requires air monitoring of contaminant gas concentrations.
- Unless monitoring indicates gas levels below WSBC exposure limits (\$5.48), “effective local venting for the exhaust gases must be provided in vehicle areas”.

2.2. Comparison of Sizing Methodologies

Both ASHRAE 62.1 and the ACGIH manual present potential methodologies for sizing dilution ventilation exhaust systems within vehicle maintenance bays, loading docks, and other areas with only intermittent engine operation.

2.2.1. ASHRAE 62.1 Recommendations

The ASHRAE method is a straightforward calculation based on a set airflow rate of 1.5 cfm/ft². Applied to the truck bays in question, this would amount to approximately 2,500 cfm. This is a relatively low exhaust rate, and is qualified in the standard as applying only if direct vehicle exhaust capture is *also* provided, which we understand is impractical for these locations. An example of such a direct-capture system is indicated in Figure 3 below.

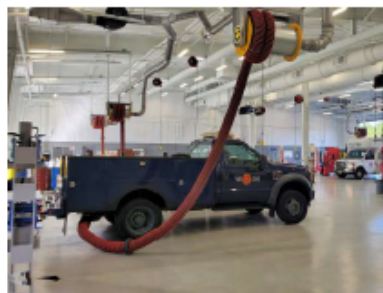


Figure 3: Direct Vehicle Exhaust Capture

While direct exhaust capture is not being entertained, carefully locating exhaust intake points via ductwork extensions may reduce the quantities of contamination that circulate around the space. This means incomplete but meaningful capture may be practical, reducing the reliance on dilution to control contaminants. For this reason, we use the ASHRAE airflow rates as a useful minimum reference point in assessing potential system size.



2.2.2. ACGIH Recommendations

The ACGIH manual provides reference airflow rates for a number of scenarios, including forklifts and general continuous indoor engine use, as well as intermittent engine operation such as at loading docks. Flow rates can be based on number of active engines, total horsepower, flow rate per area, or flow rate per direct capture inlet. Example airflows resulting from the different sizing methods are listed in Table 1 below.

Table 1: ACGIH Exhaust Methods Comparison

Method	Airflow Truck Bays (cfm)
10,000 cfm+ per truck, 4 hrs per day	30,000
100 cfm/horsepower, 4 hrs per day	36,200
2 cfm/ft ² , engines off after parking	3,860
Direct Capture, 8L engine at 1,500 rpm	600

The use case at these fire halls is exclusively for intermittent and relatively short periods of operation, measured in minutes at a time, with extended periods of time where the trucks are not running. Weighing this usage and lack of direct exhaust capture, we believe it is sensible to choose a maximum exhaust air flow rate slightly exceeding the ACGIH recommendation of 2 cfm/ft². Please see Section 2.3 for further discussion.

2.3. Recommendations

2.3.1. Gas Monitoring System

We recommend that new automatic gas monitoring and alarm systems be installed within the truck bay space to monitor gas levels of carbon monoxide (CO) and nitrogen dioxide (NO₂), two common toxic gases that are emitted during diesel engine operation and which are useful proxies for other common contaminants. We recommend such a system be comprised of the following:

- Controller module at breathing level, similar to Figure 4 below, with integrated CO sensor
 - Sensors located at west end of room, approximately centered along wall
 - NO₂ sensor within 12in of floor level, or as low as practical
- Local strobe alarm for high gas concentration detections
- Data logging capability, to demonstrate gas concentrations over time



Figure 4: Gas Monitoring Station with Local Alarm

We note that provincial OSHA regulation requires gas monitoring in all spaces (including existing buildings), but not necessarily active ventilation so long as detected gas levels are below regulation TLV and TWA exposure limits. If budget constraints are a primary consideration, it may be possible to initially install only a monitoring system to verify if unsafe conditions are, or are not, being created. Once that information is in-hand, a decision could be made to proceed with the addition of an active ventilation system as per Section 2.3.2.

Conversely, if the current safety concerns are of sufficient priority, then simply proceeding with the complete gas detection and active ventilation systems in all truck bays is the more conservative approach in terms of occupant health and safety.

2.3.2. New Ventilation System Sizing

In reviewing the various sizing scenarios outlined in Section 2.2 and comparing these to the intended use cycles (short duration engine operation, with long periods of inactivity), our opinion is that an exhaust system sized for approximately 3,300 cfm would be appropriate for the combined fire truck & rescue truck space (all three stalls). At this peak flow rate, the air within either truck bay would be completely replaced within approximately 8 minutes. This is suitable for addressing brief engine starts and direct vehicle exit out of the garage. Should the expected use case include extended idling within either truck bay for more than 60 seconds or so, these flow rates would need to be increased by a factor of between 3-10 times.

We further recommend including variable speed fan operation, so that the system is only operating at full flow when necessary to maintain safe contaminant concentrations, while avoiding freezing/condensation issues or excessive energy use the rest of the time.

Please note that these recommendations are conceptual only, and should not be implemented without a complete, fully engineered design. Please refer to Figure 5 for sketch of ventilation concept.



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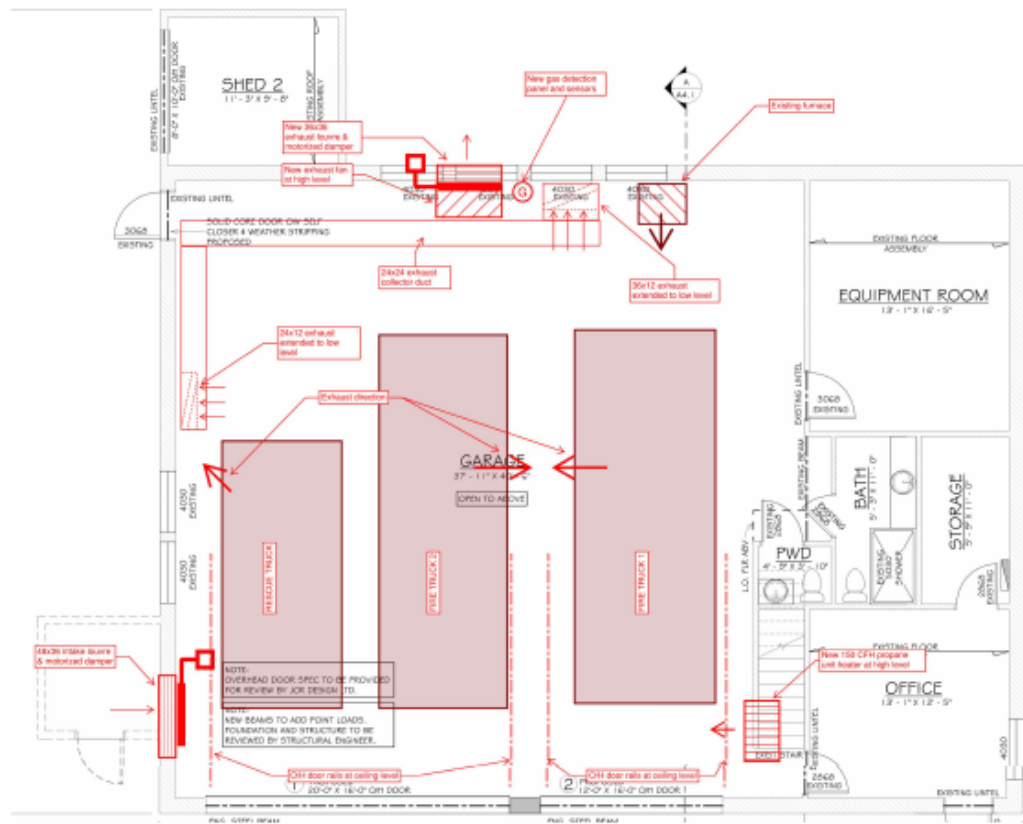


Figure 5: Ventilation Concept Sketch

2.3.3. Exhaust System

- A new thru-wall exhaust fan could be installed centered north-south along the west wall, 2-3 ft below ceiling level. This could be finished with a screened louvre outdoors, and motorized damper the inside connected to ductwork.
- As discussed in Section 2.2.1, partial contaminant capture is possible if ductwork is extended from the exhaust fan down to within 2ft of floor level between the fire trucks and on the south wall behind the rescue truck.
- New wall mounted exhaust fan of approximately 3,300 cfm capacity at 0.20" ESP pressure. Include low voltage speed control input and connection to gas detection system.
 - Example product: Greenheck SE1-18-424-VG, 3/4HP EC motor, 0-10VDC speed control input.



Figure 6: Example Wall Exhaust Fan & Weather Hood Assembly

2.3.4. Makeup Air Supply

Due to the addition of a significant quantity of outdoor air, during winter outdoor conditions the incoming makeup air will need to be pre-heated to prevent freezing or condensation issues. A new sealed combustion propane-fired unit heater is recommended, with combustion air and venting connections extended to the outdoors through the roof:

- Provide new intake louver at high level along the south wall, near the east end, complete with motorized damper and screening, open to the room (no ducting). There appears to be sufficient space within the truck bay to accommodate the damper assembly without impacting overhead door rails.
- A minimum of 44 kW (150,000 btu/h) heating is required to offset the additional ventilation air. This sizing assumes the existing propane furnace remains in service.
- We have not applied any capacity from the in-floor radiant heat in these calculations, as radiant systems are very slow to respond and would be ineffective at addressing the short bursts of ventilation air needed.

3. DISCUSSION AND RECOMMENDATIONS

To comply with provincial regulations, a gas detection system monitoring CO and NO₂ should be installed in each truck bay to measure and log contaminant concentrations during typical operations. As it is not possible to know if unsafe gas concentrations are occurring until this monitoring is in place, a reasonable strategy could be to install these systems first, collect data for a few months, and then decide whether or not to proceed with an active ventilation system.

Should installation of a ventilation system be desirable either immediately or after completing a monitoring period of gas levels at the truck bays, we have provided recommendations in Section 2.3 as an approximate guideline for implementation, though we recommend a complete and engineered system design be done prior to construction. The new ventilation system should have its speed controlled by the gas detection system, so that airflow is adjusted automatically upon detection of increased contaminant gas concentrations. Due to the significant volumes of outdoor air required,



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additional heating will be needed. As noted previously, the propane supply company should be consulted prior to adding new loads on the tank and piping system.

Ultimately, both regulatory compliance and provision of a safe working environment can be achieved through addition of a ventilation and gas detection system. The services and structure of the existing building appear to lend themselves well to the addition of such a system. Assuming funding is in place to proceed, we would recommend the addition of a gas detection and ventilation system.

4. CONCLUSION

This report is based on the information available to Straiton Engineering Ltd. at the time of writing, and represents our professional opinions and recommendations. It is intended for the use of Fraser Valley Regional District only, and should not be relied upon by other third parties without prior written consent from SEL. Should additional or modified information come to light, we reserve the right to update our findings to reflect this.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Mike Dixon'.

Mike Dixon, P.Eng.
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 Straiton Engineering Ltd.
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 E: mdixon@straitoneng.com



Permit to Practice #: 1000512

A handwritten signature in blue ink, appearing to read 'John Buxton'.

John Buxton, P.Eng.
 Principal
 Straiton Engineering Ltd.
 D: 778-752-5836
 E: jbuxton@straitoneng.com

Schedule B – FORM OF PROPOSAL

Name: _____

Address: _____

Name and title of Representative: _____

Telephone: _____ Email: _____

Form of Business Organization☐ Sole Proprietorship☐ Partnership Date of Establishment _____☐ Corporation Date of Incorporation _____ Business No. _____

We hereby offer to perform the Services required by this RFP for the stipulated price of:

Proposed Price for Goods/Services	\$ _____
GST	\$ _____
TOTAL	\$ _____

Cost Plus Rates

1. Construction Labourer	\$/hr _____
2. Supervisor	\$/hr _____
3. Trades	\$/hr _____
- Electrician	\$/hr _____
- Sheet Metal	\$/hr _____
- Carpenter	\$/hr _____
- Framer	\$/hr _____
- Painter	\$/hr _____
- Other	\$/hr _____
4. Other	\$/hr _____
5. Materials	Additional % _____

I/We the undersigned authorized representatives of the Proponent, having received and carefully reviewed the RFP, including without limitation, the General Conditions and Specifications (if any), submit this Proposal in response the RFP.

Dated this ____ day of _____, 2026.

Signature of Authorized Signatory

Signature of Authorized Signatory

Name & Title/Position:

Name & Title/Position:

Schedule C – PROPOSED EQUIPMENT

A list of proposed equipment for the engine bay at the fire hall including make, model and specifications.

Boston Bar Fire Hall

Gas Monitoring

Ventilation

Makeup Air

Controls

Other

Schedule D – PROPONENT’S EXPERIENCE

A list of previous comparable work, including a brief description of that work, approximate contract value and references (with phone numbers).

Project name: _____

Contact name: _____ Phone No. _____

Work Description: _____

Value (\$): _____

Project name: _____

Contact name: _____ Phone No. _____

Work Description: _____

Value (\$): _____

Project name: _____

Contact name: _____ Phone No. _____

Work Description: _____

Value (\$): _____