

# **Bid Specifications**

## **Vehicle Exhaust Removal System**

**Coventry Township Fire Department  
68 Portage Lakes Drive  
Akron, Ohio 44319**

### **1.1 Project Overview to Prospective Bidder:**

Coventry Township Fire Department has been awarded the 2018 Assistance to Firefighters Grant for the purchase and installation of a vehicle exhaust source capture system. This system is for Coventry Fire's Station located at 68 Portage Lakes Drive Akron, Ohio 44319. This bid specification outlays the requirements set forth by Coventry Fire for the purchase and installation of this system. **Sealed bids will be received until Wednesday, February 26, 2020 at 1:00 PM EST at which time submitted sealed bids will be publicly opened and read by the members of the Fire Department and Township Administrator. Submitted sealed bids shall be plainly marked Sealed Bids – Coventry Fire Department Vehicle Exhaust Source Capture. Any bid received after the above referenced time and date will be returned to the submitter unopened.**

The Board of Coventry Township Trustees reserves the right to reject any or all bids, to waive variations or formalities, and to negotiate changes, additions, or deletions. The Board also reserves the right to accept a bid which it deems to be in the Township's best interest, and will not necessarily be bound to accept the low bid. The Township also reserves the right to extend the time to submit bids, as well as extend the time to open bids.

No oral interpretations will be made to any bidder as to the meaning of the Bid documents or any part thereof. Every request for such an interpretation shall be made in writing and shall be addressed to the Coventry Township Fire Chief. All inquiries received up to seven (7) days prior to the date fixed for the opening of Bids will be given consideration. Every interpretation made to a bidder will be on file.

Taxes – Coventry Township is generally exempt from Federal and State Sales Taxes. Quotations must be separated to show the amount to be added for taxes of any kind, if applicable. Exemption forms are available from the Township.

Bid will be awarded within sixty (60) days of Bid opening date. All bid prices submitted are to be good for one hundred twenty (120) days from acceptance of qualified Bid.

An optional bid spec is listed for the "2 drop" double bay on the east side of the building also known as the "Upper Bay". This is an additional source system being considered outside of the AFG Grant award for the "8 drop" portion of the main apparatus bay. This additional bid should be clearly marked as option #2 on the bid specification sheet (see last page). Coventry Township reserves the right to drop this "2 drop" system for consideration of award after bids are opened.

## **1.2 Extraction System Overview**

1.2.1 The exhaust system shall be designed to vent 100 % of exhaust gases and particulate safely to the outside of the fire station. The exhaust system shall be designed and installed by factory trained and authorized personnel, which have been certified by the manufacturer of the exhaust system. Manufacturers shall be required to have a minimum of five years of proven manufacturing experience in the manufacture of emergency vehicle exhaust extraction equipment.

1.2.2 The department shall be able to use the exhaust system for performing engine and pumper checks indoors.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

## **1.2.3 System Description**

The exhaust system shall be a source capture system designed to handle exhaust fumes from diesel engines. The system shall be flexible and allow movement of apparatus from bay to bay. A total of 8 capture points in 1 station. Only systems designed with a suction rail or expandable hose track shall be considered.

Fan shall have the capacity of 5400 cfm @ 6 inches static pressure to ensure enough air flow at each drop. A turnkey installation must be provided including electrical connections and tailpipe modifications.

1.2.4 Exceptions and Variances from any of the specifications outlined in these bid specifications must be acknowledged and listed on a sheet attached to your bid. Comply will mean full compliance to the specification. Failure to list and acknowledge differences and exceptions to the specifications will result in automatic rejection of the bid. Bidder must have conducted a site inspection prior to bidding this project to fully understand the scope of work.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

1.2.5 All Equipment and Material of this Exhaust System Package must be of Standard Product of the prime manufacturer. No products not found in manufacturer's catalog from other secondary companies shall be offered. Product shall have proven history longevity and service.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

## **2.1 Airflow requirements**

2.1.1. The exhaust fan for each facility shall provide a minimum of 650 cfm per vehicle at 6.0 inches static pressure loss. Motor/ Blower curve performance information from the manufacturer must be provided with the bid document showing air handling capacity at various static pressure losses.

2.1.2 To achieve maximum air volume, exhaust system hose drops shall be the same cross sectional diameter as the vehicle tailpipe or greater. Also, exhaust system shall maintain CFM that matches the

cfm of the vehicle engine exhaust when running at 1500 RPM. Hose drops that do not match or exceed the size of the tailpipe must be acknowledged.

2.1.3 For quality purposes the fan shall be a backward incline fan made from welded construction and be manufactured in accordance to AMCA standards. Fan housings that are screwed together or riveted are not acceptable. Fans shall be tested and balanced prior to installation and be manufactured in an ISO Certified Facility.

Comply \_\_\_\_\_ Do Not Comply \_\_\_\_\_

### **3.1 Overall System Performance**

3.1.1 System must be designed for high temperature vehicle exhaust fire rescue applications. The system shall automatically activate, disconnect, shutdown, and reactivate upon return without human intervention.

Comply \_\_\_\_\_ Do Not Comply \_\_\_\_\_

### **4.1 System Warranty**

4.1 Complete exhaust system parts warranty shall be for a minimum of 3 years from the system manufacturer. In addition, a three year parts warranty shall be extended as well. A warranty certificate describing the warranty to be provided must be included in the bid. Location and name of nearest service outlet should be listed in the bid. Location of parts inventory shall be indicated as well.

Comply \_\_\_\_\_ Do Not Comply \_\_\_\_\_

### **5.1 Turnkey Installation**

5.1.1 Complete exhaust system installation including the exhaust fan, control box, ductwork, track hose and nozzle connection must be completed. All electrical work from the panel out is included in this scope of work. Tailpipe modifications that are required to ensure proper system operation are to be included in the scope of the work. Any modifications or relocation of ceiling mounted heaters required to install the exhaust system in the apparatus bay should be included in the bid.

5.2 All system components shall be labeled with manufacturer identification.

5.3 Installation of Exhaust System shall be accomplished by a factory authorized installation team that specializes in the business of installing emergency response exhaust systems. Name of installation firm must be indicated in the bid document.

Comply \_\_\_\_\_ Do Not Comply \_\_\_\_\_

### **6.1 Method of Nozzle Attachment**

6.1.1 The exhaust system shall be attached to the vehicle within 3 feet of the door threshold.

6.1.2 The system shall be designed so that attachment to exhaust hose is accomplished by the operator standing erect and with one simple motion to connect system to the vehicle.

6.1.2 A rigid lower hose section with handle shall be provided to allow for easy hose connection and have an extreme high temperature rating of 950 degrees or greater. The lower section hose shall be constructed using engineered materials that allow hose to maintain its shape and rigidity.

6.1.3 The tailpipe adapter plate or ring shall not exceed 7 inches to provide sufficient clearance above the ground. Any tailpipe adapters used must be of similar size to allow the flexibility to move vehicles from bay to bay.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

### **7.1 Method of Nozzle Release/Universal Nozzle**

7.1.1 The release of the nozzle shall occur by a forward motion of an apparatus. The separation shall be accomplished by a simple mechanical release. Systems requiring support systems for nozzle separation such as pneumatics or electronics are not acceptable.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

7.2.1 The nozzle shall not allow for the potential escaping of diesel exhaust into the bay area. It is required that the nozzle seal 100% around the tailpipe by using a check valve to eliminate the possibility of diesel fume escaping back into the bay area. Any nozzle that does not seal 100% around the tailpipe will not be accepted.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

7.3.1 In event of a power failure the nozzle shall not permit gases to back flow into the bay. The nozzle must seal completely around the tailpipe or incorporate a check valve to prevent this from occurring. Adapters that have opening that allow gases to escape are not acceptable.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

7.3.2 Test results conducted by independent industrial hygienists must be available verifying that there is no leakage of gases back into the bay area. Test results shall verify that nozzle contains CO and other gases within the exhaust ventilation system

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

7.3.3 The nozzle shall allow for the introduction of ambient air to significantly cool the air stream inside the hose and prolong the life of the equipment.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

7.4.1 All nozzle and tailpipe assemblies are to be of similar size to allow vehicles to move from bay to bay. Adapter should not exceed 7-inch diameter to allow for ground to tailpipe clearance.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

7.5.1 All nozzles, transition elbow and adapters must have inlets and outlets of 5 inch diameter and be made of rust resistant components to ensure good connection.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

### **Nozzle Separation**

7.4.1 The disconnection of the nozzle shall be accomplished by the forward motion of the apparatus. The disconnection of the hose shall not be *speed dependant and* have a balancer that helps lift the exhaust nozzle off the vehicle tailpipe. The nozzle must separate from the tailpipe at the same point each time irregardless of the speed of the vehicle.

7.5.1 Any auto-release system that is speed sensitive requiring the driver to modify the exit speed to control the nozzle release shall not be accepted. Any nozzle requiring support systems such as compressed air or electrical support to operate or release are discouraged.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

7.6.1 Release of nozzle from the tailpipe shall not cause tugging or stretching of the hose to occur. Stress from separation and transporting of the hose to the door shall be borne by an internal cable to prolong life of the hose.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

### **Nozzle Elbow**

7.7.1 Nozzle elbows constructed of one piece, cast aluminum are preferred to eliminate the possibility of denting, rusting and breaking.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

### **8.1 Sliding Aluminum Track/ Expandable Hose Track**

8.2The exhaust system must use a lightweight aluminum track support system to convey the exhaust hose from door threshold to vehicle park position. The aluminum track shall be of box lock design with two cross supports for rigidity purposes. Systems that use steel unistrut or aluminum H track design are not acceptable.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

8.3 An expandable hose track system must be offered in Station to eliminate hose loops or large dips in aisles. The expandable hose shall be 6 inches in diameter and have a 6 to 1 compression ratio to convey the trolley to the all the way to door threshold.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

### **8.2 Suction Rail**

8.2.1 The suction rail system shall be comprised of Rail Sections which shall have a length of ten feet (10'). Aluminum Material shall be 6063-T-5 with a standard mill finish.

8.2.2 The aluminum suction rail shall be constructed from a one-piece continuous extruded aluminum profile. Construction shall be 6" round in diameter, with guide rails on each side to accommodate the external trolley assembly, and molded slots on the top for leg and support bracing

8.2.3 The trolley assembly shall be of external guide rail design. Four Delron wheels must be out of the exhaust airstream and allow the trolley assembly to roll freely along the external guide rails. The chassis shall include a fitted cone assembly, designed to part the memory sealing lips. The cone assembly shall be designed with a series of friction rollers. These rollers shall be designed to reduce the resistance between the memory lips and the cone assembly.

8.2.4 Shock absorber assembly shall incorporate an adjustable hydraulic cylinder, capable of reducing the forward impact of the trolley assembly, without causing damage to either the suction rail or the trolley assembly.

8.2.5 A rubber bumper shall be located on the trolley assembly and designed as a contact point. The hydraulic cylinder shall be equipped with a rubber bumper end stop. Both bumpers shall be designed to align upon impact, and at no time shall metal to metal or plastic to metal contact be allowed.

Comply \_\_\_\_\_ Do Not Comply \_\_\_\_\_

## **9.1 The System Balancer**

9.1.1 The Balancer shall retract and keep the hose and nozzle from dangling on the floor for safety concerns.

9.2.1 Hose shall be supported by the balancer using a lifting elbow with an internal cable to reduce stress and wear and tear to the hose.

Comply \_\_\_\_\_ Do Not Comply \_\_\_\_\_

## **10.1 Extraction System Exhaust Hose**

10.1.1 The flexible exhaust hose is manufactured for the sole purpose of venting high temperature exhaust gases which are produced by internal combustion engines.

10.2.1 This construction of hose must be capable of operating at a continuous minimum temperature of 400°F and intermittent temperatures of 550°F. Hoses that are not rated at or higher than these temperatures will not be accepted. Testing support data verifying the hose rating must be included in the submittal portion of this bid package.

10.2.2 A rigid lower section hose shall be provided to tolerate extreme high temperatures. Hose section must be tested to be capable to 950 degrees F. Additionally; hose must be constructed of engineered materials to maintain shape and integrity.

Comply \_\_\_\_\_ Do Not Comply \_\_\_\_\_

10.3. Five inch diameter flex hoses are preferred to smaller hoses to provide less static pressure loss and more efficient fan performance.

Comply \_\_\_\_\_ Do Not Comply \_\_\_\_\_

### **11.1 Auto-Start Control System**

11.2.1 Shall be designed to sense the output pressure normally generated by any internal combustion engine. When the nozzle is connected to the vehicle's exhaust tailpipe and the vehicle is started by the operator an automatic controller, the increased output pressure shall be detected by a pressure sensor and activate the exhaust fan. A low voltage timer will keep the exhaust fan operating for a period of time designated by fire department procedures. As an option, ignition start activation may be also offered for consideration.

Comply \_\_\_\_\_ Do Not Comply \_\_\_\_\_

11.3.1 Controller Electrical controller must be UL listed/approved and manufactured in accordance with Underwriters Laboratories standard UL-508 enclosed industrial control panels and incorporate a limited energy control circuit. The enclosure must be NEMA4X rated fiberglass construction to maintain water tight seal.

Comply \_\_\_\_\_ Do Not Comply \_\_\_\_\_

### **12.0 Quality Standard Assurance and Experience:**

12.1 All standards of quality are meet and adhered to: UL, NFPA, AMCA, IMC, ASME, UMC, NEC and all local and state building codes. A current ISO-9001-2015 certificate must be included in the bid package from the manufacturer of the system for manufacturing of product.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

12.2 Independent System testing information documenting the overall the effectiveness of the proposed system in a fire hall must be included available.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

12.3 References: At least 5 recent fire station references in the state within the last five years. A list must be included to verify experience in the fire/ rescue market. References are only to be provided for the specific equipment and model number being proposed for this project. Contact information shall be provided upon request.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

12.4 Manufacturing Experience: Companies that have 5 or more years of manufacturing experience of automatic vehicle exhaust removal systems for the fire/ rescue market are preferred.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

**13.0 POINT OF ORIGIN:**

13.1 Equipment shall be manufactured by a U.S. Company that has its base headquarters in the USA. Systems built using parts supplied from American vendors are preferred. All components of shall be American Standard.

Comply\_\_\_\_\_ Do Not Comply\_\_\_\_\_

End of section



# Bid Proposal

## Coventry Township Fire Department (Akron, Ohio) Vehicle Exhaust Removal System

The \_\_\_\_\_ (bidder) having read the specification proposes to furnish Vehicle Exhaust Removal System for the Coventry Township, Ohio Fire Department (Akron, Ohio) for the full and firm price indicated below.

Each shall be priced individually and as a package.

#1 - Provide and install a full automatic "8 Drop" Vehicle Exhaust Extraction System for the source capture and the removal of vehicle exhaust emissions from Apparatus' Start up to door threshold for the main apparatus bay of the Coventry Fire Department.

Project \$ \_\_\_\_\_

#2 - Provide and install a full automatic "2 Drop" Vehicle Exhaust Extraction System for the source capture and the removal of vehicle exhaust emissions from Apparatus' Start up to door threshold for the east bay also known as the "Upper Bay of the Fire Department" of the Coventry Fire Department.

Project \$ \_\_\_\_\_

Combined Project Total of #1 and #2 \$ \_\_\_\_\_

(see next sheet for required signature)

We, the undersigned, have read and understand all the requirements set forth in this invitation to bid, including specifications, instructions to bidders, terms and conditions, and other pertinent information regarding the products and services being bid on, and we agree to furnish these products and services at the prices stated herein. Mistakes in writing of the submitted Bid Proposal will be the responsibility of the undersigned.

\_\_\_\_\_  
Original, Authorized Signature/Date

\_\_\_\_\_  
Printed Name and Title

\_\_\_\_\_  
Federal Tax ID Number

\_\_\_\_\_  
Phone number

\_\_\_\_\_  
Company Name and Address

\_\_\_\_\_  
Email address

\_\_\_\_\_  
Fax number