



## CITY COUNCIL ACTION REPORT

August 10, 2009

TO: John Szerlag, City Manager

FROM: Susan A. Leirstein, Purchasing Director  
William S. Nelson, Fire Chief

SUBJECT: Standard Purchasing Resolution 4: MITN Purchasing Cooperative-  
City of Southfield - SCBA Cylinder Bottles

### **Background**

- On June 29, 2009, the City of Southfield obtained bids for Sperian Self Contained Breathing Apparatus (SCBA) and accessory equipment via the Michigan Intergovernmental Trade Network (MITN) website of which the City of Troy is part.
- Forty-four companies were notified of this opportunity with only one bid received.
- The City of Southfield accepted the sole bid received from Southeastern Equipment Company Inc of Troy, MI for complete SCBA units, additional bottles and masks.
- The City of Troy Fire department has been using Sperian SCBA since 1994. The cylinders purchased at that time have only a 15 year service life. Many of these were replaced when new SCBA were purchased in 2007; however, there are still (98) cylinders that have an end of service date of December 2009.
- The purchase of these cylinders is essential to the safety of our fire fighters, and is required by NFPA Standard.

### **Financial Considerations**

- Funds are budgeted for this purchase in the Fire Operations, Fire Equipment Account #338.7740.115 for \$70,000.00.
- Due to the MITN program the total purchase is estimated at \$45,000.00.

### **Legal Considerations**

- The new equipment will be in compliance with the most updated safety standards.

### **Policy Considerations**

- Cooperative purchasing minimizes costs and increases the efficiency and effectiveness of the City government. (Goal II)

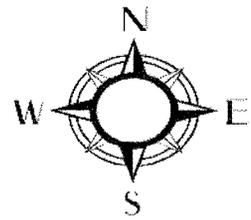
### **Suggested Recommendation**

- City management and the Fire department request authorization to purchase from the sole bidder, Southeast Equipment Company, Inc of Troy, MI, as a result of a MITN Cooperative award, (98) SCBA cylinder bottles for an estimated total cost of \$45,000.00, at unit prices as contained on the attached bid tabulation opened June 29, 2009.

Prepared by Peter Hullinger, Fire Technician

# Southeast Equipment Company Inc.

PHOENIX RESCUE EQUIPMENT - SPERIAN FIRE - CHEMGUARD FOAM  
DRAGER THERMAL IMAGERS - AIRETEX COMPRESSORS  
SALES AND SERVICE



July 1, 2009

Troy Fire Department  
Mr. P. Hullinger  
400 W. Big Beaver Rd.  
Troy, MI 48084

Dear Pete:

Southeast Equipment will extend all items from ITB-09-00067, City of Southfield bid for Self Contained Breathing Apparatus to all members of MITN.

If you have any questions, please contact me.

R. Sinclair

July 13, 2009

Honorable Mayor and Council  
Municipal Building  
Southfield Michigan

**Re: Receipt of Bids on a Replacement Self Contained Breathing Apparatus (SCBA) System for the Fire Department**

Dear Sirs and Mesdames:

**Background:** The Fire Department received authorization in the 2009-10 budget to purchase components for a replacement Self Contained Breathing apparatus (SCBA) system. This is personal protective equipment required for firefighters to operate within an environment that is immediately dangerous to life and health. This equipment is necessary to enable firefighters to safely enter toxic environments to save lives, fight fires, and protect property.

The SCBA system consists of a mask, bottle, and harness for each firefighter. All of these components must adhere to strict safety standards; the bottles in particular may only be kept in service for fifteen (15) years. Replacement at this time is optimal because: 1) the current bottles will have 15 years of service by December 2009; and 2) the new equipment will be in compliance with the most updated safety standards.

The Fire Department is currently using Sperian Warriors brand equipment and has other components of the system that will continue to be used. Therefore, bids were solicited on this brand only so that the existing items will be compatible with the new items being purchased. Forty-four companies were notified of this opportunity; however, only one bid was received.

**Fiscal Impact:** The current equipment harnesses were purchased in 1999, and the bottles were purchased in 1994. Both items are fully depreciated. Funds are provided for this purchase in the 2009-10 Fire Department budget.

**Goals Impacted:**



Top Quality City Services

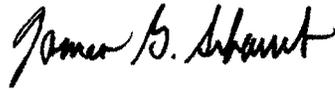


Financially Sound and Sustainable City Government

**Recommendation:** The sole bid was received from Southeast Equipment Company Inc. of Troy, MI in the total amount of \$267,900.76. This purchase will cover 50 complete units of masks, bottles, and harnesses; 52 additional bottles; 58 additional masks, 18 of which contain radio communication devices. In addition, sixteen hours of training will be provided for five (5) service technicians. This company is an authorized distributor and has authorized service facilities for the specified brand. Therefore, this office recommends that Council approve the purchase of Sperian Warriors brand SCBA equipment as indicated in the attached resolution.

CA-E

Respectfully submitted,

A handwritten signature in black ink, appearing to read "James G. Scharret". The signature is written in a cursive style with a large initial "J".

James G. Scharret  
City Administrator

**RECOMMENDED RESOLUTION:**

**RESOLVED:** That Council does hereby approve the purchase of Sperian Warriors brand Self Contained Breathing Apparatus (SCBA) equipment in the total amount of \$267,900.76 from Southeast Equipment Company, Inc. of Troy, MI. Funds are provided for this purpose in the 2009-10 Fire Department Budget, (account numbers 666-1773, \$250,000 and 101-400-4005-27400, \$17,900.76).

**BE IT FURTHER RESOLVED:** That Council authorizes the Purchasing Agent to dispose of the equipment being replaced in the manner most advantageous to the City.



Dear Prospective Bidders:

**Re: The Enclosed Request for Bids**

The City of Southfield is now accepting bids as described in the enclosed request. Please place your response to these specifications in a sealed envelope and mark the name of the bid and the name of your company on the outside

When mailing bids, address them to:

**Purchasing Agent,  
c/o City Clerk's Office  
City of Southfield  
P.O. Box 2055  
Southfield, MI 48037**

When delivering bids, address them to:

**Purchasing Agent,  
c/o City Clerk's Office  
City of Southfield  
26000 Evergreen Road  
Southfield, MI 48076**

Please call the Purchasing Department at (248) 796-5250 if you need additional information.

We look forward to receiving your response.

Sincerely,

A handwritten signature in black ink, appearing to read "Rae L. Townsel", written over a thin red horizontal line.

Rae L. Townsel, CPPB  
Purchasing Agent

**CITY OF SOUTHFIELD**

**26000 EVERGREEN ROAD**  
*Rae L. Townsel, CPPB, Purchasing Agent*  
*Telephone: (248) 796-5250*  
*Fax: (248) 796-5256*

**P.O. BOX 2055**

**SOUTHFIELD, MI 48037**

**FORMAL BID**

**We** \_\_\_\_\_,  
*(Insert Name of Bidder)*

*The undersigned submit this bid for*

**Bid Name:**

**Self Contained Breathing Apparatus (SCBA), Sperian Warrior Brand Only**  
**File No.09-00067**

*Which is to be opened and publicly read on:*

**Date:**

**Monday, June 29, 2009 at 10:30 AM Local Time**

**PLEASE SEE ATTACHED SHEETS**

**CASH DISCOUNT WILL BE ALLOWED FOR PROMPT PAYMENT AS FOLLOWS:**

20 CALENDAR DAYS \_\_\_\_\_ PER CENT    30 CALENDAR DAYS \_\_\_\_\_ PER CENT

SIGNED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State and Zip Code: \_\_\_\_\_

Phone Number: ( ) \_\_\_\_\_ Fax Number: ( ) \_\_\_\_\_

E-mail Address: \_\_\_\_\_

**PLEASE SIGN**

Authorized Signature: \_\_\_\_\_

Typed or Printed Name and Title of Signer: \_\_\_\_\_

## SUPPLEMENTAL INSTRUCTIONS TO ALL BIDDERS

1. **BID DEADLINE:** In order for a bid to receive consideration, it must be received prior to the specified time of opening as indicated on the bid form. No bid will be accepted after the time specified for the bid opening. The City reserves the right to postpone the bid opening for its own convenience. Bidders should use the bid documents furnished; failure to do so will be considered as an alternate offer and may be cause for rejection. Bids are considered received when in possession of the City Clerk's office. It is the bidder's responsibility to ensure that documents are received in the proper location.
2. **WITHDRAWAL:** No bid will be withdrawn for 60 days from its opening date. Bidders may reduce this period if he states so in his bid; however, he runs the risk of being declared non-responsive to the specifications.
3. **RIGHT TO REJECT:** The City reserves the right to waive any irregularity in any bid, to split awards by items or lots (unless otherwise stipulated either in the specifications or by the bidder) or to award to other than the low bidder, should any of the foregoing be deemed in its best interests.
4. **FAILURE TO ENTER INTO CONTRACT:** If a bidder fails to formally acknowledge and accept purchase order or to execute the contract within ten (10) working days after notification, the deposit, if any, may be forfeited as liquidated damages.
5. **TO COMPLY:** For failure to deliver or perform in accord with the accepted bid, the City may consider the contractor in default and take steps to protect the City's interest. The City may, without impairing its other rights and benefits, purchase all or part of the contract goods or services on the open market and charge any additional costs to the contractor or his surety.
6. **PATENTS:** Contractors will protect and indemnify against expense of any nature, will bear cost of any suits which may arise and will pay all damages which may be awarded against the City for the use, under this specification, of any patented device, process, apparatus, material or invention.
7. **ERRORS OR OMISSIONS:** Bidders are not permitted to take advantage of any errors or omissions in specifications since full instructions will be given should they be called to our attention in a reasonable amount of time before the bids are due.
8. **LOWEST RESPONSIBLE BIDDER IS ONE WHO:**
  - a. Submits no restrictions or qualifications beyond those permitted in the proposal request.
  - b. Have the skill, quality and ability to conscientiously, faithfully and promptly fulfill the contract to its letter and spirit.
  - c. Have integrity, judgment, reputation and experience.
  - d. Has sound financial resources as well as the ability to furnish any and all bonding and insurance documents required.
  - e. Is able to comply with all terms and conditions stipulated in the proposal requests.
  - f. Can show the intent and ability to cooperate efficiently and effectively with all Government departments involved in the contractual purchase or service.
  - g. Has the knowledge of applicable existing laws and ordinances of the City of Southfield necessary to provide smooth and efficient relations.
  - h. Has unquestionable ability to provide maintenance and service on the contractual items purchased.
9. **NON-COLLUSION CLAUSE:** By signing and submitting this proposal, bidder states that his proposal is genuine and not collusive or sham; such proposer has not colluded, conspired, connived, or agreed, directly or indirectly, with any proposer or person, to put in a sham bid, or that such other person will refrain from proposing and has not in any manner, directly or indirectly, colluded, conspired, connived, or agreed, with any person, to fix the price of affiant or any other proposer, or to fix any overhead, profit or cost element of said proposal price.
10. **NON-DISCRIMINATION CLAUSE:** By signing and submitting this bid for consideration of an award by the City of Southfield, the contractor and any subcontractor covenants not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status or a disability that is unrelated to the individual's ability to perform the duties of a particular job or position. Breach of this covenant may be regarded as a material breach of the contract.
11. **DOCUMENT DISTRIBUTION:** The City of Southfield, Michigan officially distributes bid documents from the Purchasing Department or through the **Michigan Intergovernmental Trade Network (MITN) at [www.mitn.info](http://www.mitn.info)**. The City of Southfield cannot guarantee the accuracy and is not responsible for any errors contained in any information received from alternate sources.

**City of Southfield Purchasing Department  
Request for Bids for Self-Contained Breathing Apparatus (SCBA),  
Sperian Warriors Brand Only**

**1. Purpose**

- 1.1. The City of Southfield is soliciting bids for the purchase of self-contained breathing apparatus (SCBA) equipment in accordance with the attached specifications. Bids are requested on Sperian Warriors brand equipment only; no substitutions will be allowed.
- 1.2. Bids will be accepted from authorized dealers with warranty repair centers.
- 1.3. Prices must include delivery F.O.B. to City of Southfield Fire Headquarters, 24477 Lahser Road, Southfield, MI 48033, ATTN: Peter Healy, Fire Chief.
- 1.4. Please indicate: delivery will be made within \_\_\_\_\_ days after receipt of order. Note that product must be delivered no later than December 1, 2009.
- 1.5. The successful bidder will be required to provide sixteen hours of training for up to five (5) SCBA technicians. This training must be conducted at Fire Headquarters at a schedule to be determined.

**2. Type** The open-circuit self-contained breathing apparatus covered by this specification shall be of the type using compressed air.

**3. Approvals**

- 3.1. The apparatus shall be certified by the National Institute for Occupational Safety and Health (NIOSH) under Title 42, Part 84 of the Code of Federal Regulations for 30-, 45-, or 60-minute rated service life and for storage at temperatures between -25°F and 160°F. The apparatus shall also be certified by NIOSH as "CBRN Agent Approved" for use in chemical, biological, radiological, and nuclear (CBRN) environments.
- 3.2. The apparatus shall be compliant with all performance requirements of the National Fire Protection Association's 2007 edition of NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services.
- 3.3. All electronic components shall be certified as intrinsically safe per UL 913 for use in Classes I, II, III, Division 1, Groups C through G hazardous locations.

**4. Face piece** The face piece shall:

- 4.1. Be constructed (in the rims, Air Klic, and nozzle cover) of a durable, fire-resistant material. The bottom of the nozzle cover shall have a molded lip to serve as an anchor point for flash hoods. The nozzle cover shall have two openings through which the Heads-Up Display (HUD), mounted on the second stage regulator, may be easily viewed by the user. Two wireforms that attach at the juncture of the upper and lower face piece rims shall be available as an option, providing two additional flash hood anchor points.
- 4.2. Be available in black butyl rubber in three sizes to fit various facial shapes and sizes. The face piece shall have a mask skirt sealing area of not less than 1 Y;" in width. A letter (S, M, or L) shall be molded into the top of the skirt to denote the size.

**City of Southfield Purchasing Department  
Request for Bids for Self-Contained Breathing Apparatus (SCBA),  
Sperian Warriors Brand Only**

- 4.3. Contain a replaceable, non-shatter-type, polycarbonate, conical-shaped lens located to provide a satisfactory field of vision. The lens shall be coated on the outside surface to help prevent abrasion. The lens shall be secured in the face piece by a durable plastic retainer. The lens shall have anti-fog appliqués installed on the exterior of each side of the flat surface at the bottom of the lens and shall have a permanent anti-fog coating applied to the inside.
  - 4.4. Allow air to enter the face piece in a manner that will reduce the possibility of moisture accumulation on the lens.
  - 4.5. Employ an adjustable 5-strap silicone rubber headband assembly held in place by buckles designed to prevent inadvertent loosening. An optional 5-strap Headnet mesh-style assembly shall be available and shall be interchangeable with the silicone rubber headband. It shall be necessary to tighten the chin straps and the temple straps to secure the Headnet to the face. The top strap shall be stationary. All straps for both the silicone headband assembly and the Headnet shall be attached to the rim of the face piece, rather than the face piece skirt, to reduce distortion of the sealing surface when tightened.
  - 4.6. Contain an easily removable exhalation module which employs a neoprene exhalation valve designed for easy cleaning.
  - 4.7. Utilize a Kapton material speaking diaphragm which is retained by the facepiece nozzle and is easily removable for cleaning and maintenance.
  - 4.8. Have field-replaceable components throughout.
  - 4.9. Employ a factory-installed, removable nose cup. The nosecup shall be able to be removed and re-installed without special tools. The nosecup shall be available in three sizes and shall have a letter (S, M, or L) molded into the right side to denote the size.
  - 4.10. Have provision for mounting corrective lenses inside the facepiece. The corrective lens kit shall not require tools for installation.
  - 4.11. Have a removable adapter (Air Klic), onto which the second stage regulator attaches, which has an opening that is small enough to be easily covered by one hand for a negative pressure fit check.
- 5. Regulator System, Intermediate Pressure Hose, and RIC UAC**
- 5.1. The regulator system shall be designed to operate in two independent stages. The first stage reducer shall be installed inside the backpack so that it is completely protected from damage. The second stage shall be designed to provide positive pressure during an NFPA breathing machine test at 70 psi inlet pressure.
  - 5.2. The first stage regulator shall:
    - 5.2.1. Contain an over-pressurization relief valve designed to vent relief pressure to the

**City of Southfield Purchasing Department  
Request for Bids for Self-Contained Breathing Apparatus (SCBA),  
Sperian Warriors Brand Only**

atmosphere should failure of the regulator's primary elements occur.

- 5.2.2. Contain a pressure-reducing valve to reduce pressure from the cylinder to 80-150 psig. The reducing valve assembly shall be a balanced valve design and shall provide uniform flow performance throughout the full cylinder pressure range. This valve shall have an inlet filter to retain particles of 120 microns or greater, shall be in an open position against the high pressure inlet, and shall seat in the direction of airflow.
  - 5.2.3. Be joined via a short, rugged, braided high pressure hose to a CGA handwheel with a threaded stainless steel core. This handwheel shall secure the hose to the cylinder valve. The handwheel shall incorporate a multiple swivel mechanism for easy alignment and connection to the cylinder.
  - 5.2.4. Incorporate a Rapid Intervention Crew/Company Universal Air Connection (RIC UAC). The RIC UAC shall be located at the bottom left of the backpack, protected by the backplate and not protruding as a snag hazard. The RIC UAC system shall consist of a male fitting, a dust plug, and a relief valve designed to vent excess pressure during filling operations. The relief valve shall be designed to activate at the correct pressure in 2216 and 4500 psig versions.
  - 5.2.5. Utilize a fill hose with a mating female fitting, which shall be purchased as a separate item and shall not be deemed part of the RIC UAC; it shall be available as a 10-foot component of the UAC Rapid Intervention Kit.
  - 5.2.6. Incorporate quick-disconnect fittings on the fill hose and the RIC UAC assembly, which shall be able to be coupled and uncoupled with pressure in the fill hose and with the SCBA activated. The RIC UAC system shall accomplish fully filling a 30-minute SCBA cylinder in approximately 45-60 seconds.
- 5.3. The second stage regulator shall:
- 5.3.1. Be constructed of a durable, fire-resistant material. The upper portion of the regulator, including the shutoff button, shall be covered by an easily replaceable rubber boot for protection and impact absorption.
  - 5.3.2. Be a "pilot valve" type. It shall contain a spring-biased diaphragm, responsive to respiration demand, to actuate a pilot valve which, in turn, operates a flexible main valve to meet the user's flow demand during inhalation.
  - 5.3.3. Utilize a .030-inch hole and a flapper valve in the diaphragm plate to flush the second stage cover with clean air in order to keep CBRN agents away from the diaphragm.
  - 5.3.4. Reduce pressure from 80-150 psi to .036-.054 psi.
  - 5.3.5. Produce a static pressure in the facepiece of 0.8 to 1.5 inches of water.
  - 5.3.6. Contain a 40-mesh metal screen filter at the outlet port to prevent entrance of particles into the regulator.
  - 5.3.7. Contain a bypass valve that provides a separate flow path around the regulator primary demand valve. In the event of a failure or blockage of the primary, the bypass valve shall be operable by either of the user's gloved hands.
  - 5.3.8. Employ a two-point fastening system which allows the regulator to be quickly mounted into the facepiece by pushing and turning the regulator until the two fasteners attach to the facepiece adapter. The regulator shall remain secured to the facepiece should one of the fasteners inadvertently be released.
  - 5.3.9. Employ a first-breath-on feature which allows the user to actuate regulator flow by inhaling after the regulator is secured to the mask.

**City of Southfield Purchasing Department  
Request for Bids for Self-Contained Breathing Apparatus (SCBA),  
Sperian Warriors Brand Only**

- 5.3.10. Contain a safety override button which allows the wearer to manually start the regulator flow.
- 5.3.11. Not obstruct the wearer's downward vision.
- 5.3.12. Contain a manual shutoff button located directly in front of the top release button to prevent loss of air after removal from the mask.

5.4. The second stage regulator intermediate pressure hose shall:

- 5.4.1. Be attached to the second stage regulator with a swivel connector.
- 5.4.2. Attach to the first stage regulator intermediate pressure hose by a two-step, push-pull pneumatic and electrical quick-disconnect fitting. The quick-disconnect fitting shall be designed so that it cannot be connected just pneumatically or just electrically; both connections must be made in order for the wearer to be able to use the SCBA.
- 5.4.3. Be protected by a butyl rubber and silicone sleeve throughout its entire length.

**6. Primary Audible Alarm**

- 6.1. Shall be a warbling whistle alarm.
- 6.2. All alarms shall be installed inside the top left of the backpack so that they are completely protected from damage. They shall be air-actuated, automatically operating when air pressure in the supply cylinder reaches approximately 25% of original full pressure. The alarms shall work off intermediate pressure (the pressure after reduction by the first stage regulator) and shall have a discrete start, rather than a "ramping up" effect, with constant performance across the pressure range. They shall operate without interruption until the cylinder pressure reaches approximately 100 psig. The warbling whistle shall incorporate a "shuttling piston" to create a distinctive chirping effect through frequency variations, so that the alarm is easily differentiated from other sounds in the user's proximity.

**7. Heads-Up Display (HUD) and Secondary (Redundant) Alarm**

The SCBA shall incorporate an electronic visual alarm system that informs the user of remaining cylinder pressure and acts as a redundant end-of-service-time indicator (EOSTI). The HUD shall:

- 7.1. Utilize a transducer module, installed inside the top of the backpack and protected from damage, to sense cylinder pressure and generate an electronic signal to the HUD module. The transducer module shall be joined to the first stage via a high pressure, low volume hose. The first stage regulator shall incorporate a restrictor that limits leakage to a maximum of 15 liters per minute should the hose be severed.

- 7.1.1. The transducer module and all other electronic components integrated into the SCBA shall utilize 4 C-cell batteries, located inside the bottom right of the backpack, protected from damage, for power. The battery compartment shall be easily accessible via a spring-loaded, slotted cap, which can be removed or secured by using a coin or a flat blade screwdriver. The batteries shall last a minimum of one year if the SCBA is used for 30 minutes a day. A picture of the correct battery orientation within the transducer module shall be molded into the outside of the battery compartment.

**City of Southfield Purchasing Department  
Request for Bids for Self-Contained Breathing Apparatus (SCBA),  
Sperian Warriors Brand Only**

- 7.1.2. An amber LED shall be integrated into the backpack to indicate battery status prior to activating the SCBA. The battery status indicator shall flash once every 10 seconds to indicate a "battery OK" mode, once every two seconds to indicate a low battery mode, and not at all to indicate a dead battery. When the low battery mode initiates, a minimum of 8 hours of battery life shall remain. The amber LED on the transducer module shall no longer show battery status once the cylinder valve has been activated, except when batteries are low (it shall continue flashing once every two seconds).
- 7.2. Utilize an electronic cable, routed through the left shoulder strap, to join the transducer module to the HUO module.
- 7.3. Incorporate a HUO module mounted to the second stage regulator. When docked in the Air Klic in the facepiece, the HUO module and second stage regulator shall align with the openings in the facepiece nozzle cover so that the user shall have an unobstructed view of the HUO while wearing the facepiece. The HUO module shall contain a "gas gauge"-style, wide-span LED display of pressure remaining. The HUO module shall:
  - 7.3.1. Incorporate an amber square LED to inform the user of a low battery condition. When the low battery mode initiates, signified by the flashing of the amber LED, a minimum of 8 hours of battery life shall remain.
  - 7.3.2. Contain four green LEDs. When the pressure in the cylinder is full and the cylinder valve is activated, all four green LEDs shall be lit. All four shall be continuously lit until 75% of full pressure remains. At 75% pressure remaining, the fourth green LED shall no longer be lit; the remaining three green LEDs shall be lit. All three shall be continuously lit until 52% of full pressure remains. At 52% of full pressure, the third and fourth green LEDs shall no longer be lit; the remaining two green LEDs shall be lit. At 50% pressure remaining, the second green LED shall flash for 20 seconds to indicate that the 50% level has been reached. After 20 seconds of flashing, the second green LED shall return to a continuous mode, and the two LEDs shall be continuously lit until 27% of full pressure remains. At 27% pressure remaining, the second, third, and fourth green LEDs shall no longer be lit; the remaining green LED shall be lit. At 25% pressure remaining, the remaining LED shall change color to red and shall commence flashing to indicate that the 25% level has been reached" This flashing red LED shall serve as the redundant alarm. The red LED shall flash continuously until 10% of full pressure remains. At 10% pressure remaining, the red LED shall commence flashing significantly faster to indicate that the 10% level has been reached. The red LED shall flash continuously until all the air in the cylinder has been consumed. At that point, all LEDs shall flash simultaneously several times; then no LEDs shall be lit.
  - 7.3.3. Incorporate a red flashing LED on the front of the exterior of the module to inform other personnel within eyesight that the user has reached the 25% and 10% low air levels. The exterior LED shall flash significantly faster to indicate that the 10% level has been reached. A red flashing low air LED shall also be integrated into the top right side of the back of the backpack.
- 7.4. Utilize a photodiode on the top of the exterior of the module to brighten or dim the HUD pressure level LEDs in relation to the ambient light level. In bright ambient light

**City of Southfield Purchasing Department  
Request for Bids for Self-Contained Breathing Apparatus (SCBA),  
Sperian Warriors Brand Only**

conditions, the LEDs shall operate in the bright setting so that they can be easily seen. In low-light conditions, the LEDs shall operate in the dim setting so that they are not distracting to the user.

7.5. Use photoluminescent labels to identify Full ("F"), "%", "~", "1/4," and the low battery icon.

**8. Integrated PASS Device**

The SCBA shall incorporate an optional electronic, integrated PASS (Personal Alert Safety System) device. The PASS shall meet the following requirements:

- 8.1. It shall be certified as compliant with all performance requirements of the National Fire Protection Association's 2007 edition of NFPA 1982, Standard on PASS Devices.
- 8.2. All electronic components shall be certified as intrinsically safe per UL 913 for use in Classes I, II, III, Division 1, Groups C through G hazardous locations.
- 8.3. When exposed to 500<sup>0</sup> F for 5 minutes, the PASS shall function at or above the required 95 dBA sound pressure level.
- 8.4. The PASS shall be constructed of a durable, fire-resistant material.
- 8.5. The PASS shall have data logging capabilities that log the following 2,000 most recent events, with a time and date stamp for each event, and with the ability to download the information:
  - 8.5.1. When the device is turned on.
  - 8.5.2. When the device is turned off.
  - 8.5.3. When the device is changed from sensing to alarm mode manually.
  - 8.5.4. When the device changes from sensing to pre-alarm mode.
  - 8.5.5. When the device changes from pre-alarm to alarm mode.
  - 8.5.6. When the device is reset.
  - 8.5.7. When the device goes to alarm mode from off mode.
  - 8.5.8. When the device has low power.
- 8.6. The PASS device shall consist of two components, one on the front of the SCBA and one on the back of the SCBA. These two components shall have both audible and visual alarms on both the front and the back of the SCBA and shall not be in violation of any other SCBA manufacturer's patents.
- 8.7. The front PASS component shall incorporate the following:
  - 8.7.1. A redundant photo luminescent gauge face (see specifications in paragraph 9 below).
  - 8.7.2. A protective silicone boot.
  - 8.7.3. Mounting on the right shoulder strap.
  - 8.7.4. An amber LED to inform the user of battery condition.
  - 8.7.5. LEDs that act as a visual PASS status alarm and that flash green for sensing mode; alternating green and red for the first, second and third pre-alarm mode; and red for full alarm mode. These shall be at chest height on the user for easier identification.

**City of Southfield Purchasing Department  
Request for Bids for Self-Contained Breathing Apparatus (SCBA),  
Sperian Warriors Brand Only**

- 8.7.6. Two piezoelectric audible alarms on the front of the SCBA that are angled for better sound dispersion, and two piezoelectric audible alarms on the rear of the SCBA that are angled for better sound dispersion. These shall be at chest mid-back height on the user for easier identification.
- 8.7.7. A manual PASS full alarm activation button that takes one finger to activate.
- 8.7.8. A manual reset button located on the side of the front PASS that resets the PASS alarm with two pushes of the button. Upon two additional pushes of the button, it shall turn the system off if the unit is not pressurized. The reset button shall be activated with one finger,
- 8.7.9. One slot on the front PASS and two slots on the back PASS for installation of the Pathfinder firefighter locator system.

**9. Redundant Pressure Gauge**

- 9.1. The PASS device shall incorporate a mechanical, analog gauge.
- 9.2. The gauge shall:
- 9.3. Have a photo luminescent gauge face.
- 9.4. Have pressure increments marked in psig and "Empty," "1/4," "1/2," "3/4," and "Full."
- 9.5. Employ a protective silicone boot.
- 9.6. Be mounted on the right shoulder strap.

**10. Cylinder**

- 10.1. The volume of the 45-minute cylinder shall be approximately 66 cubic feet when filled to 4500 psig pressure and shall conform to the DOT exemption numbers listed in paragraph 10.4.1 below.
- 10.2. The cylinder shall contain a closing valve which incorporates a pressure gauge to indicate the cylinder pressure at all times. The handwheel shall be at a 90° angle from the longitudinal axis of the cylinder.
- 10.3. The cylinder shall be, fully wrapped carbon fiber design. Wrapped cylinders shall be constructed of a deep-drawn, seamless aluminum liner wound with high-strength carbon filaments impregnated with epoxy resin.
- 10.4. Cylinders with valves, less air shall not exceed the following weight:
  - 10.4.1.1. 45-minute, carbon fully wrapped, 4500 psig: 8.81b (DOT-E-1091)

**11. Cylinder Valve**

- 11.1. The cylinder valve shall be fitted with a two-sided luminous boldface dial-type gauge with rubber and metal protective guards. The cylinder valve body shall be permanently coated to prevent galling and corrosion.
- 11.2. The cylinder valve shall have a large rubber-coated handwheel with a safety locking collar device to keep the handwheel locked open during use.
- 11.3. The cylinder valve outlet shall conform with the Compressed Gas Association (CGA) standard for threaded connection for high pressure, number 347.

**12. Harness and Backpack**

- 12.1. The aluminum backplate and harness assembly shall weigh approximately 5

**City of Southfield Purchasing Department  
Request for Bids for Self-Contained Breathing Apparatus (SCBA),  
Sperian Warriors Brand Only**

pounds.

- 12.2. The backpack shall be available in two sizes: standard and small. A large strap kit shall be available as an option. No tools shall be necessary to replace any harness components, with the exception of the grab handles. No adhesives shall be necessary to secure any replaceable components. The backpack harness shall be readily adjustable for various wearer sizes, and shall include the following components:
- 12.3. Harness straps of Kevlar®/Nomex® composite construction to provide maximum resistance to high temperatures, flame, and abrasion. The harness shall have a coating to prevent the straps from becoming limp. The edges of all harness straps shall be of a different color than the middle of the strap so that the straps are well-defined and can be differentiated from each other in low-light conditions. The reverse side of the strap shall be of a different color than the front of the strap in order to easily recognize twisted straps. The shoulder straps shall have thick, Kevlar/Nomex-covered closed-cell padding attached for user comfort. All harness straps shall secure to the backpack without fasteners. The shoulder straps shall utilize parachute-style retaining and loosening buckles. The shoulder straps shall incorporate a reflective band on each strap. The ends of the straps shall contain large grab handles for ease of adjustment. The grab handles for the shoulder straps shall be of a different color than the grab handles for the waist strap for easy differentiation.
- 12.4. A two-piece Kevlar/Nomex waist strap, adjustable from both sides, with a front-release metal automotive-style belt buckle. The waist strap shall be tightened by pull-forward -style straps with parachute-style retaining and loosening buckles.
- 12.5. A waist-strap-mounted holder for the second stage regulator so that the regulator may be kept actuated in a stand-by mode during use, and so that the regulator may be stored protected from the environment when not in use. The holder shall have a provision for relief of excess pressure when the regulator is actuated, and it shall have a vacuum breaker to prevent the regulator from being accidentally actuated upon removal from the holder.
- 12.6. An aluminum backplate contoured to the user's back. The backplate shall be capable of providing up to 1000 pounds of pull force without breakage. Three handles with carabiner attachment points shall be located on the top and sides of the backplate for ease of donning, for transport, or for pulling the SCBA in a rescue scenario.
- 12.7. An easily adjustable aluminum cylinder band to properly secure various sizes of cylinders. The cylinder band shall be secured to the backpack with a cam-over style buckle with a locking release mechanism.
- 12.8. A thick, Kevlar/Nomex-covered, closed-cell, padded lumbar support for user comfort and safety.
- 12.8.1. A thick, Kevlar/Nomex-covered, closed-cell, upper back pad for user comfort and safety.

**City of Southfield Purchasing Department  
Request for Bids for Self-Contained Breathing Apparatus (SCBA),  
Sperian Warriors Brand Only**

12.8.2. A snap hook-style mask hanger situated on the left shoulder strap for attachment of the facepiece in a convenient, protected, stand-by position.

12.8.3. A protective bumper on the bottom of the backplate to prevent damage to the backplate.

12.8.4. A swivel/pivot mechanism that allows the backpack's weight to be ergonomically and comfortably placed on the user's lower back in all wearing positions, both vertical and horizontal.

**13. Buddy Breather and Auxiliary RIT Connection**

13.1. A buddy breather shall be available as an optional accessory. It shall utilize a two-step, push-pull, female quick-disconnect fitting designed to prevent accidental release. The female quick-disconnect fitting shall be attached at the terminus of a separate intermediate pressure hose routed from the first stage reducer into a pouch on the left side of the backpack at the user's waist. A separate male plug with a pressure shutoff shall be located adjacent to the female quick-disconnect fitting. The "buddy" shall attach his mating male fitting to the buddy breather female quick-disconnect fitting or his mating female fitting to the buddy breather male fitting in order for both users to share the remaining air supply in both cylinders.

13.2. As a separate option, an auxiliary connection utilizing the same two-step, push-pull, female quick-disconnect fitting used in the buddy breather described above shall be available on the backpack. This can be used for conventional supplied air; for accepting a remote air supply from a Rapid Intervention Team; or, in conjunction with the buddy breather described above, for "daisy chaining" multiple use

**14. Carrying Case**

14.1. If specified, a molded carrying case shall be provided to retain the complete apparatus and instruction card or booklet. The carrying case shall have replaceable front latches.

**15. Instruction Card or Booklet**

15.1. An instruction card or booklet shall be provided with each apparatus. Instructions shall contain complete operation and maintenance procedures.

**16. Warranty, Flow Test, and Overhaul Cycle**

16.1. The apparatus shall carry a limited warranty of not less than twelve (12) years, with the exception of the cylinder, which shall carry a limited warranty of not less than fifteen (15) years, the first stage regulator, which shall carry a limited warranty of not less than the lifetime of the SCBA, and the HUD, which shall carry a limited warranty of not less than two (2) years. Other electronic accessories may carry limited warranties of different durations.

**City of Southfield Purchasing Department  
Request for Bids for Self-Contained Breathing Apparatus (SCBA),  
Sperian Warriors Brand Only**

- 16.2. An annual flow test shall be done by a Survivair-certified technician to meet the requirements of NFPA 1852. There shall be no mandatory overhaul cycle.

**17. Accessories**

- 17.1. The following NIOSH-certified accessories shall be available for the apparatus:
- 17.1.1. Wireless radio communication system
  - 17.1.2. Mask-mounted voice amplification system
  - 17.1.3. Haz-mat suit pass-through fitting
  - 17.1.4. Neck strap
  - 17.1.5. Chest strap
  - 17.1.6. APR adapter
  - 17.1.7. CN/CS adapter
  - 17.1.8. Integrated ultrasound firefighter locating system

**18. Future Accessories**

- 18.1. The products being offered must have the ability to accommodate the following accessories:
- 18.1.1. Team communication system with a minimum of 72 selectable channels with unlimited people per channel.
  - 18.1.2. Telemetry system with PC based software for air management, accountability, and tactical management.
  - 18.1.3. Digital Heads-Up Display mounted inside the facepiece and using infrared data transmission.

**City of Southfield Purchasing Department  
Pricing Sheet for Self-Contained Breathing Apparatus (SCBA),  
Sperian Warriors Brand Only**

| <b>Item No.</b>               | <b>Description</b>  | <b>Qty</b> | <b>Unit Price</b> | <b>Total Price</b> |
|-------------------------------|---|------------|-------------------|--------------------|
| 1                             | Complete SCBA units which include mask, bottle, and harness | 50 each    | \$ _____          | \$ _____           |
| 2                             | Additional bottles  | 52 each    | \$ _____          | \$ _____           |
| 3                             | Masks   | 58 each    | \$ _____          | \$ _____           |
| 4                             | Masks with Radio Communication System (RCS)                 | 18 each    | \$ _____          | \$ _____           |
| 5                             | Training for up to 5 people                                 | 16 hours   | \$ _____          |                    |
| <b>Grand Total Bid Amount</b> |   |            | \$ _____          |                    |

Please indicate the address of the authorized repair facility as well as the service manager's name and contact information.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Name of Bidder

\_\_\_\_\_  
Authorized Signature