



**City of Richmond**

**Report to Committee**

**To:** Community Safety Committee  
**From:** Wayne Stevens  
 Deputy Chief  
**Re:** Award of Contract – Fire Engines

**Date:** April 17, 2002  
**File:** -

**Staff Recommendation**

1. THAT Contract T.1529 for the supply and delivery of three (3) fire apparatus to Federal Signal Corporation, Fire Rescue Group, 1415 West 22<sup>nd</sup> Street, Suite 1100, Oak Brook, Illinois 60523, be awarded in an amount not to exceed \$2,311,000 inclusive of applicable taxes.

Wayne Stevens  
 Deputy Chief

FOR ORIGINATING DIVISION USE ONLY		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Fleet Operations .....	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Budgets .....	Y <input type="checkbox"/> N <input type="checkbox"/>	

## Staff Report

### Origin

Richmond Fire-Rescue responds to a wide variety of calls for service, including fires, medical emergencies, automobile, water, high angle rescue and incidents involving dangerous chemicals. Because RFR is required to respond to a wide variety of calls for service, its vehicles and equipment must be multi-functional. In other words, they must be capable of responding effectively to many types of incidents. Such capabilities enhance operations and prove invaluable to the delivery of effective fire and emergency services.

Presently RFR is developing a multi-year vehicle and equipment strategic plan. The plan will identify how the department can improve the efficiency and effectiveness of its operations through changes in the types of vehicles in its fleet. As a result, the Department's Apparatus and Equipment Team has developed specifications for multi-functional "rescue-pumper" apparatus. Such apparatus functions primarily as a fire fighting vehicle, while also being well suited to respond to the wide variety of calls for service required of the department.

In March 2002, the City released a Tender for the supply and delivery of three (3) multi-functional "rescue-pumper" apparatus. Each bidder was required to quote on three (3)-financing options as outlined below. In response to Tender T.1529, bids were received from the following manufacturers:

FINANCE OPTIONS	MANUFACTURER	
	FEDERAL SIGNAL CORP.	EMERGENCY RESPONSE SYSTEMS
<b>Option A-</b> Payment upon delivery	\$2,193,429.00	Not Quoted
<b>Option B-</b> 10% on order, pay for chassis, body, balance on completion)	<b>\$2,186,062.00</b>	\$2,372,863.65
<b>Option C-</b> Payment for chassis, balance on completion	\$2,186,958.00	\$2,475,913.65
<b>Option D-</b> 5 year lease	\$877,371.00	\$1,020,842.15

### Analysis

Only 2 bids were received.

Both bids were evaluated using the following criteria:

1. Completeness of the tender package (the degree to which it responds to all requirements of the specifications).
2. Tenderer's written detailed specifications, and compliance to RFR's specifications.
3. Design and engineering of major structural components (including ease of maintenance of major components).
4. Qualifications and capabilities of the manufacturer to produce the described apparatus.
5. Completeness of all engineering drawings, complete performance charts, and computer scans.
6. Service and warranty data submitted.
7. Delivery time.
8. Price.

The following chart is a summary of the evaluation of the bids conducted by Fire-Rescue's Apparatus and Equipment Team:

EVALUATION CRITERIA	BIDDER	
	Federal Signal	ERS
1. Completeness of Tender Package	Complete	Incomplete
2. Tenderer's Written Specifications	Complete	Incomplete
3. Design and Engineering	18 exceptions	48 exceptions
4. Qualifications and capabilities	Complete	Incomplete
5. Completeness of engineering drawings	Complete	Incomplete
6. Service and warranty	Complete	Incomplete
7. Delivery time	Acceptable	Unacceptable
8. Price	Low bid	High Bid

The following is a detailed review of the bids:

#### **Federal Signal Corp.**

Federal Signal is the largest manufacturer of fire apparatus in the world and has manufacturing plants in Florida, New York and Alberta. Federal Signal proposes to build RFR's apparatus at its Saulsbury Fire-Rescue manufacturing facility in Preble NY.

- ◆ Saulsbury's submission was the low bid.
- ◆ Saulsbury's bid fulfilled all of the General Requirements and Conditions of the Tender and although their bid included a total of eighteen (18) exceptions to RFR's specifications, none

of the exceptions were major in nature (see Appendix A for a complete explanation and assessment of each exception).

- ◆ Saulsbury proposes a delivery time of nine (9) months, which meets RFR's requirements.
- ◆ Saulsbury has been designing and building fire apparatus for over 50 years. During this time, they have manufactured and supplied many similar fire apparatus to fire departments across North America.
- ◆ Saulsbury is a well-established manufacturer that enjoys a very favourable reputation for performance and reliability. An extensive reference check and market research was conducted by RFR to confirm Saulsbury's reputation in the industry.
- ◆ Saulsbury fire apparatus meet or exceed the highest industry standards, including those established by the National Fire Protection Association (NFPA) and Underwriter's Laboratory of Canada (ULC).

Saulsbury Fire-Rescue has demonstrated its permanency in the industry and their bid included a complete and detailed list of references.

### **Emergency Response Systems (ERS)**

ERS has its manufacturing facilities located in Langley BC.

- ◆ ERS' submission was the high bid.
- ◆ ERS' bid was incomplete and did not comply with the General Requirements and Conditions of the Tender.
  - ◆ Engineering drawings incomplete
  - ◆ No detailed specifications submitted as required
  - ◆ No weight or electrical analysis of the proposed apparatus submitted
  - ◆ ERS have not been in business for 120 months as required in the Tender
  - ◆ Incomplete or unacceptable warranty information provided
  - ◆ Delivery time cannot be guaranteed
- ◆ ERS' bid contained a total of 48 exceptions to RFR's specifications. Many of the exceptions are considered major in nature (see Appendix A for a complete explanation and assessment of each exception).
- ◆ ERS has not, to date, designed or manufactured a similar apparatus as specified by RFR. Their list of references was incomplete and ERS has NOT submitted satisfactory evidence of its ability to construct the apparatus specified by RFR.

- ◆ ERS has been designing and manufacturing fire apparatus for six (6) years.
- ◆ ERS has not manufactured or delivered fire apparatus that complies with both NFPA and/or ULC standards.

**Financial Impact**

Council has approved the following funds for the acquisition of these vehicles:

Year	Amount Approved by Council
2000	\$727,178.34
2001	\$683,700.00
2002	\$900,000.00
<b>TOTAL</b>	<b>\$2,310,878.34</b>

The additional equipment which is placed on the vehicles makes up the difference between the tendered price for the trucks and the budget amount, (approx \$125,000). Although the reduced value of the Canadian dollar has reduced the funds available to acquire the additional equipment, we are confident we can negotiate a final cost, including equipment, that is within our available budget.

**Conclusion**

A multi-functional “rescue-pumper” is more capable of responding effectively to the wide variety of calls received by RFR. Saulsbury Fire-Rescue apparatus meet or exceed the highest industry standards and their bid fulfilled the General Requirements and Conditions of the Tender. Moreover, Saulsbury is a well-established manufacturer that enjoys a very favourable reputation for performance and reliability.

It is recommended that the contract be awarded to Federal Signal Corporation, Fire Rescue Group as it is the low bid and represents the best overall value to the City.

The research and analysis was conducted with staff from Fleet Operations and Finance and the recommendation is supported by each.



Wayne Stevens  
Deputy Chief

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**Appendix A  
Exceptions/Clarifications**

**Saulsbury Fire-Rescue**

<b>Item</b>	<b>Page</b>	<b>Number</b>	<b>Exception</b>	<b>Nature Major/Minor</b>
1	27	2.2.1	Dimensions—refer to drawings, we require a minimum of 52” for the pump panels due to piping, new slide out tray of preconnects, SUPER VAC light tower and other items. Keeping the wheelbase the same, the front body compartments are thus 50” wide and not 54”.	Minor
2	29	2.2.5	Air intakes are no longer required with new SPARTAN air intake system.	Minor
3	30		No battery access doors are required with new SPARTAN cab design.	Minor
4	32	2.2.13	The front bumper must be 24” wide due to the front crosslays.	Minor
5	33	2.2.21	Front rims are 12.25” not 9” and front tires are MICHELIN to match rear tires. Front cramp angle is 45 degrees.	Minor
6	71	5.5.13	Fuel fill may not be in a CAST PRODUCTS door due to space available with SCBA mountings.	Minor
7	71	5.5.15 & 5.5.41	The roof ladder shall slide in on edge next to LDH hose and not mounted in ladder compartment—this would require a shallower left side body compartments.	Minor
8	73	5.5.20	Paint will be equal to PPG (DUPONT or SIKKENS) same color.	Minor
9	74	5.5.23	Undercoating warranty shall be furnished by ZIABART and warranty provisions to follow.	Minor
10	88	5.5.64	Whelen 72” traffic stick may be too long for the rear of the body we will install any traffic stick that will fit in the available area.	Minor
11	94	5.5.68.9	Electric cable reel and cable is 240 volt not 120 volt—same as junction box, required for HRT and other 240 volt equipment.	Minor
12	110	6.6.2.36	Pump panel doors are manual opening—same as all other doors due to the emergency nature of pump panel access—these doors are mission critical. We are proposing these as an option at <b>\$1,600.00 CAN</b> for two doors. (not recommended)	Minor
13	112	6.6.2.38	Pump panel: the tank fill line is the pump cooler and recirculating line since there is a pump cooler line already in your specifications. The pump heater is not included due to the high heat conditions from the truck exhaust under the vehicle. If a hot water heater is desired add <b>\$1,600.00 CAN</b> to the bid price.	Minor
14	113	6.6.2.43	Elbow is 6” female on right side not 4”.	Minor

**Appendix A  
Exceptions/Clarifications**

**Saulsbury Fire-Rescue**

Item	Page	Number	Exception	Nature Major/Minor
15	114	6.6.2.49 & 6.6.2.58	Trim plates are stainless steel and not aluminium—superior in nature.	Minor
16	117	6.6.2.62	Front discharge piping shall be 2" with 2" valves for future changes in hose use on front of vehicle. A flow meter/pressure gauge shall be installed on the 2" line and pressure gauge on the forestry hose line, due to flow. The space for 1.75" hose will be as large as a 24" bumper extension will permit.	Minor
17	122	7.7.6	Tank mounting angle is aluminium not steel due to the dis-similar metals of the body.	Minor
18	129	10.10.0	We have included mounting of equipment when included with the truck or when equipment is purchased from this manufacturer. If the City buys equipment elsewhere, then the mounting of the same is not included. We have no idea what would be or would not be purchased.	Minor

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**ERS (Emergency Response Systems Inc)**

<b>Item</b>	<b>Page Number</b>	<b>Exception</b>	<b>Nature Major/Minor</b>
1	8	<p><b>Construction Schedule:</b> We cannot guarantee delivery in 9 months. Based on your ordering within a reasonable time limit, we expect to complete the three units by the end of March 2003. If unexpected circumstances should delay it any further than that, we cannot be held responsible with any delivery penalties.</p> <p><b>Tenderer's Experience:</b> Our list of references is included in your tender form. We are currently building a Spartan pumper for Langley City. We cannot give 5 references for pumpers just like this one. ERS has been in business 6 years, is CWB certified, ULC listed, and CMVSS Certified. A number of reference letters are attached and we encourage you to contact our customers. Warranty claims on the truck that we have constructed have been very minimal. Although ERS as a company has just existed 6 years, the largest portion of our staff has many more years of experience in fire truck construction at various other local truck manufacturers. In purchasing from ERS, you will be able to make regular visits to our plant during construction with next to no cost, and have benefit of local warranty service.</p>	Major
2	14	22.4	Major
3	1.1.5	<b>Construction Period:</b> Refer to Note above	Major
4	1.1.12	<b>Warranty:</b> With respect to the body warranty of 15 years, please refer to the note below regarding section 5.5.3 body subframe	Major
5	2.2.5	<b>Gladiator MFP 10" Raised Roof Tilt Cab:</b> Note that with the new Spartan cab design, there are no longer exterior fresh air intake vents.	Minor
6	2.2.7	<b>Cab Door:</b> Note that with the new Spartan cab design, there are no longer aluminium access doors for the batteries.	Minor
7	2.2.21	<b>Front Tires:</b> With these tire sizes, the wheel size must be 22.5" x 12.25", and such have been included	Minor
8	2.2.22	<b>Front Axle Cramp Angle:</b> With these tire sizes, only a 45 degree cramp angle is possible.	Minor
9	2.2.53	<b>Electrical System:</b> Note that Spartan will include eight circuits in lieu of five.	Minor
10	2.2.56	<b>Headlights:</b> The round LED turn signal/marker lights on the cab corners are not available from Spartan at this time	Minor



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11		2.2.67	<b>Interior Lighting:</b> Note that the 6.5" x 3" dome light is split white and red.	Minor
12		2.2.71	<b>Amber Dome Light:</b> We can supply the amber lens if desired, but strongly recommend a red lens to prevent interference with driver visibility at night.	Minor
13		2.2.81	<b>Crew Seats:</b> The seats belts for the flip up seats must be attached to the cab wall, not the seat frame.	Minor
14		2.2.82	<b>Cloth Covered Seats:</b> The new Spartan material is called Imperial 1200.	Minor
15		4.4.11	<b>Circuit Breaker Box:</b> We can supply Cutler hammer box and breakers if desired, but prefer to use Square D brand which is our standard. There is no difference in price or quality.	Minor
16		5.5.2	<b>Body/Compartment Fabrication:</b> Understanding that these few sections describing your body construction are based closely on text from Fort Garry Fire Trucks, you can understand our, or any other bidder for that matter, taking of exception to some portions of the text.  We will build the body from 3/16" 5052H32 marine grade aluminium, which is superior to the 3003 alloy which is commonly considered "utility" grade. 5052H32 is available to all builders as well. Our body is a formed construction that uses common extrusions. We do form the corner of the compartment openings but do not need to form it in a "C" channel. The rollup doorframe openings only need a 90 degree return, and so does the body structurally. Our wiring is run in plastic protective conduit in the corners of compartments, with a removable cap for easy access. We also avoid fully welding aluminium seams due to the great amount of distortion that is caused and thus more body fuller before paint. All of our seams are stitch welded and sealed inside and out before paint. We have not had any problems with moisture or seams in any of our bodies.	Major
17		5.5.3	<b>Body Subframe:</b> We will comply with the extrusion sizes if you desire them. But you can understand that is asking for a 15 year warranty on body structure, we must be sure of the design. The size and quantity of extrusions that you request is modelled on another builders design. That is not our design and thus we will only warrant it for 5 years. If you choose to accept our standard subframe construction, we will provide the full 15 year warranty without question. We standardly use 2" x 2" x 1/4" square tubing on approximately 16" centers which has proved more than sufficient. These crossmembers are welded to a full length 1/2" x 3" aluminium flatbar, and full length aluminium channel that surrounds a 3/4" x 3" full length neoprene strip on top of the chassis rails.	Major

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<b>Item</b>	<b>Page Number</b>	<b>Exception</b>	<b>Nature Major/Minor</b>
18	5.5.4	<b>Body Mounting:</b> We do not normally use spring loaded mounts on a body like this but will provide them as you request. We will use 6 mounting points on a body of this size, using 5/8" grade 8 "U" bolts.	Minor
19	5.5.5	<b>Rear Step Bumper:</b> We will provide our standard step bumper construction. It consists of a steel tube and channel frame work fastened to the chassis frame by twelve 5/8" grade 8 bolts. The frame is powder coated and then overlaid with aluminium checkerplate. Having the rear tailboard separate from the body allows it to absorb any collision and keep it from damaging the body structure.	Minor
20	5.5.6	<b>Roof/Top of Apparatus:</b> The checkerplate top of the compartments will be NFPA compliant checkerplate. As mentioned above we will stitch weld to minimize distortion and bodywork.	Minor
21	5.5.8	<b>Rear Tow Eye Plates:</b> We will powder coat the tow hooks instead of painting them. Also we normally install the tow loops under our steel tailboard frame. We can provide them in either location at the same cost.	Minor
22	5.5.10	<b>Wheel Well Liners:</b> We will epoxy coat the wheels well liners.	Minor
23	5.5.27	<b>Compartment Interior Finish:</b> A clear coat finish over the Zolatone is <u>not</u> provided in the compartments.	Minor
24	5.5.30	<b>Adjustable Shelving Hardware:</b> A cast aluminium bracket is not used. We use the Unistrut springloaded bracket that recesses in the tracking.	Minor
25	5.5.31	<b>Adjustable Shelves:</b> We will provide 5052H32 marine grade aluminium.	Minor
26	5.5.32	<b>Slide Out Equipment Tray:</b> We will provide 5052H32 marine grade aluminium. Also, we could not locate an Accuride model 502 slide. We will use the model 9301, which is rated for 500 lbs. Note, however, that for vehicular application, Accuride derates the slide capacity to 300 lbs. If you truly want a 500 lb rating we can double stack the slides for an additional cost. To hold the trays in or out, we use a gas shock.	Major
27	5.5.32	<b>Slide Out Tool Board:</b> We will provide 5052H32 marine grade aluminium.	Minor
28	5.5.40.1	<b>Exterior Compartments:</b> Drivers side; we will provide the 12 volt electrical distribution panel in the rear wall of the driver's side rear compartment. A removable panels allows quick access to electrical components.	Minor

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Item	Page Number	Exception	Nature Major/Minor
29	5.5.45 & 46	<b>Hand Rails:</b> All handrails we provide will have rubber grip inserts.	Minor
30	5.5.48	<b>Body Receiver Tubes:</b> We will comply with everything in this section except the location of the two side receivers. It is contradictory to ask for the receiver to be part of the body to protect the body. We will supply the two side receivers as part of the rear tailboard steel frame that we described above. We standardly provide a receiver tube in the rear of this frame. We will add additional side structure to support pulling from each side.	Major
31	5.5.55	<b>Compartment Lights:</b> We will supply Weldon lights as requested, or our standard Peterson M393 lights if they are acceptable to you. In addition we will supply one light per shelf or tray.	Minor
32	5.5.60	<b>License Plate Light:</b> We will use a Peterson license light.	Minor
33	5.5.64	<b>Traffic Advisor:</b> Due to layout of the rear of the vehicle, the TA870 traffic advisor will not fit. We will supply the TA837 traffic advisor which is shorter.	Minor
34	5.5.68.9	<b>Electric Cable Reel, as per clarification:</b> We will supply 3 conductor cable for the reel in lieu of 4 conductors.	Major
35	6.6.1.4	<b>Independent Fire Pump Mounting:</b> The mounting angle that we use is 6" x 8" x 1/2" steel, with neoprene isolators in lieu of UHMW.	Minor
36	6.6.2.22	<b>Deck Over Pump Enclosure:</b> 3/16" NFPA checkerplate is not available to us. We will supply 1/8" suitably reinforced. Also, we will use 2" x 2" x 1/4" tube on 16" centers in lieu of the 3" x 2" tube.	Major
37	6.6.2.25	<b>Pump Enclosure Lights:</b> We will supply Peterson brand lights.	Minor
38	6.6.2.43	<b>Elbow:</b> We will also include a suction screen in the fitting.	Minor
39	6.6.2.47	<b>Rear Inlet Master Intake Valve to Pump:</b> We will provide an Akron electric actuated 4" valve	Minor
40	6.6.2.48	<b>Gated Suction Inlets:</b> Yes we will supply Akron suction valves for the rear inlet and tank to pump valve.	Minor
41	6.6.2.49	<b>Intake Trim Plates:</b> We will provide stainless steel intake trim plates.	Minor
42	6.6.2.58	<b>Trim Plates:</b> We will provide stainless steel intake trim plates.	Minor
43	6.6.2.59	<b>Test Taps For Gauges:</b> We will provide an Akron #44 test port.	Minor

**Appendix A  
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**ERS (Emergency Response Systems Inc)**

Item	Page	Number	Exception	Nature Major/Minor
44		6.6.2.71	<b>Vertical Stack Slide Out Crosslay Preconnect Hose Beds:</b> Grant Industries, and Slide Master are two entirely separate companies. We will provide the Slide Master slides. To clarify, each hose bed will come out one side only, and the outlet will be plumbed to the outside of the panel face to a bulkhead fitting. It would be difficult to make the chicksan swivel work with a pullout tray that has no room underneath for plumbing, due to the slide structure.	Major
45		6.6.2.73	<b>Deluge Monitor:</b> We will provide BCT thread in lieu of CSA, which is used in Ontario.	Minor
46		Section 7	<b>Entire Section – Polypropylene Plastic Water Tank Specifications:</b> The water tank with integral foam cells that we will provide complies fully with NFPA, ULC, and your volume requirements. However, we will purchase that tank from Wellington Plastics based in Chilliwack. The color of the polypropylene used will be black. The lid will be entirely removable. Wellington plastic provides excellent quality and local service, as well as a lifetime warranty.	Minor
47		8.8.2	<b>Foam Cells:</b> Wellington Plastic tank.	Minor
48		8.8.5	<b>Foam Tanks:</b> Wellington Plastic tank.	Minor