Ivins City Staff Report
City Council Meeting 11/16/2023

Agenda Item: Approve expenditure of Valve Maintenance Trailer

Submitted by: Charles Gillette, P.E. Public Works Dir/City Engineer

Recommended City Council Action: Approve expenditure of $85,397.98 for Valve Maintenance Trailer

BACKGROUND:

According to our asset management maps, the distribution system is composed of 1,864 valves. Most of the valves are used for isolation of the system in the event of water leaks. It is critical that these valves remain in good working condition, as most water leaks create situations that are considered to be emergencies. To keep valves working well, it is necessary to exercise the valves regularly. Regular exercise guarantees that the valve nut is not buried in sand and that the valve is prevented from freezing into position. Our goal, and standard practice is to perform this maintenance annually.

We currently use a handheld hydraulic valve turner to exercise valves. It is a heavy piece of equipment that must be held by two crew members. When the valve completely opens or closes, the turner sometimes suddenly jerks. It is considered an antiquated method of maintenance and is a potential risk of causing an injury. Standard practice for water companies is to use truck mounted or trailer mounted equipment. Lastly, the trailer has precise controls that limit how much torque is applied to the valve to prevent damage.

The City Council has already approved in the budget the purchase of the valve maintenance trailer. The valve maintenance trailer has a mounted valve turner that does not require to be held by hand. It includes the hydraulic unit to operate the turner. The maintenance trailer also has a high-pressure water excavating wand and vacuum to remove sand and silt from the valve cans.

FINDINGS AND ANALYSIS:

Staff is recommending that we purchase the E.H. Wachs Standard LX Single Turner Valve Maintenance Trailer as quoted at $85,397.98. The trailer features the following:

- Extended reach (13 feet) valve turning tool.
- Telescoping Valve Key
- GPS Controller/Datalogger
- 27HP Power Generator
- Hydraulic Unit with 10 Gallon tank rated at 8 GPM at 2000 PSI.
- 500 CFM – 11 Hg vacuum with 250-gallon spoils tank with hydraulic dump
- Pressure wash system and power excavator with 95-gallon water tank capable of 2.5 GPM at 3000 PSI

The trailer has additional utility than just valve maintenance. The hydraulic unit is also useable for providing power to saws and pumps. The pressure washer can be used for various cleanings including vehicles. The vacuum is used in combo with the pressure washer as a water powered

excavator which can be used for small excavations. It will reduce the wear on the vacuum truck in some situations where using the full scale vacuum truck may be unnecessary.

The GPS Controller/Datalogger is enabled to communicate easily with our Cityworks software so that maintenance data can be recorded and easily viewed in the office or the field.

Staff had trouble finding an equivalent competitor for this type of equipment as most of the items on trailers are usually purchased separately. We did find one competitor, Pacific Tek, that was trying to develop a trailer with similar capabilities but is still in the initial stages of development. We received an informal quote of $85,000 to $100,000 depending on features selected and it would not be available until sometime next year.

SUPPORT MATERIALS:

- Quote Price for Wachs Valve Maintenance Trailer
- Brochure

FINANCIAL IMPACT:

Budgeted amount is $100,000. The current quote for this equipment is $85,397.98.
GL Code Water Fund: 51-4274.0

This equipment does replace multiple pieces of separate older equipment which include the hydraulic unit, vacuum excavator, and the hydraulicly handheld valve turner. This equipment might still hold some value and could generate some income if the City decides to dispose of this equipment.

Respectfully Submitted: _____
Charles Gillette, Public Works Dir/City Engineer

Content Review: _____
Dale Coulam, City Manager

QUOTE

Quote #:	IMSQ3383
Date:	Sep 13, 2023
Expiration:	10/14/2023

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Qty	Description	Unit Price	Ext. Price
1	77-000-36 Standard LX (Gas) – VMT (RH): Single turner valve maintenance trailer; includes Wachs 750 Ft/lb. Extended Reach Valve operator for those preventive maintenance activities, telescoping valve key and Wachs ruggedized TC-100 with GPS controller/datalogger. A 27 HP gasoline powered Kohler overhead cam air cooled engine provides ample power for all contained functions, including an auxiliary HTMA Class II circuit; 10 gallon reservoir, fan cooled heat exchanger, continuous duty rated for 8 GPM @ 2,000 PSI . A positive displacement blower provides 500 CFM -11" Hg vacuum, with spoils containment provided by a 250 gallon tank with power hydraulic dump (rear discharge) and latching rear door. Also driven from the common power train is a 2.5 GPM @ 3000 PSI pressure washer system with 3 gallon anti-freeze tank and 95-gallon water tank. Includes 2-1/2" , 1-1/4" & 7/8" suction wands and one each short and long wash-down guns. The LX package bundles the service light bar with arrow board, 45' auxiliary hydraulic hose reel for operation of hydraulic power tools & Bluetooth tethering module (installed in ERV-750) for wireless communication between the exerciser and Controller/Data Logger and 24" X 18" x 18" aluminum job box.	$81,995.00	$81,995.00



Qty	Description	Unit Price	Ext. Price
1	8130177 Extenda-Lift 1000	$501.99	$501.99
			
1	79-430-20 Field training - 1 day program.	$0.99	$0.99

Payment Options

[ ] Credit Card Purchase (purchase amount $85,397.98)
[ ] Check Purchase (purchase amount $85,397.98)

SubTotal	$82,497.98
Tax	$0.00
Shipping	$2,900.00
TOTAL	$85,397.98

E.H. WACHS®
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Superior Equipment. Complete Support.™

Standard LX

VALVE MAINTENANCE TRAILER



The Standard LX, an E.H. Wachs exclusive valve maintenance trailer, comes with our industry-leading ERV-750 extended reach valve exerciser, our newest controller – the HC-100 wireless handheld computer / controller / datalogger with GPS and VITALS software, and our 500CFM-11in Hg vacuum with hydraulic slide, tilt & dump (rear discharge) with latching rear door spoils tank. Loaded with storage, and accessories this trailer is ready for serious valve exercising work.



Designed for ease of use, the Standard LX rear-mounted spoils tank gets the job done

FEATURES

- ERV-750 extended reach, 750 ft/lbs valve exerciser
- Ruggedized HC-100 controller/data logger with built in GPS
- Available in two types of engines:
  Diesel: Tier 4 compliant Kubota 1.1 L, I-3 4-stroke, liquid cooled IDI. #77-000-38
  Gas: 27HP Kohler overhead cam, air cooled, #77-000-36
- HTMA Class II circuit, 10 gal reservoir, fan cooled heat exchanger, 8gpm @1800psi
- Positive displacement blower provides 500 CFM-11in Hg vacuum
- 250 gal spoils tank utilizing exclusive hydraulic slide, tilt & dump (rear discharge) with latching rear door.
- 2.5 GPM@3000 psi pressure washer system with 95 gallon water tank.

INCLUDES

- 2 1/2in, 1 1/4in & 7/8in suction wands
- Short & long wash-down guns
- 20ft suction hose
- 50ft retractable water hose reel

LX PACKAGE BUNDLE

- LED light bar
- Auxiliary hose reel
- Bluetooth connectivity
- Job box



2.5GPM@3000 psi pressure washer with 95 gallon water tank makes clean-up easy

SPECIFICATIONS

- Gross Vehicle Weight: 7000 lb (3175 kg)
- Length: 15 ft, Height: 7 ft, Width: 7 1/2 ft

WACHS UTILITY PRODUCTS
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Standard LX VMT

Valve Maintenance Trailer System

Valve Exercising Equipment		Yes	No	Specify
ERV-750 *Patents: #9,523,443 #9,188,240 #9,038,667 #8,025,078*	An articulating arm, automated valve operator, utilizing proprietary intelligent automation (VITALS) to control torque, direction, and turns. Dual arms (one telescoping) provide 13' [3.9 m] reach over 270 degrees of freedom while automatic hydraulic disk brakes safely secure equipment in any position during operations up to 750 ft/lbs [1016 Nm] of torque. Constructed of 3" [76 mm] square steel tube. Powder coated for long life. A lightweight, telescoping valve key is also provided.	X		
Valve Machine Intelligent Automation (VITALS) **Patent: #5,937,373**	Wachs valve exercisers utilize proprietary "no assumption" automation technology to safely and effectively turn valves using AWWA recommended procedures. This technology protects the operators by keeping their "hands off" the machine while exercising the valve and protects the valve by not assuming size, direction, or current position. Torque is applied until the device senses resistance, causing the programming and sensors to automatically stop the rotation and reverse in half-turn increments to flush calcification from the valve gate. This patented automation process always exercises valves at the minimum torque required to turn, then automatically lowers the preset threshold once rotation begins so the impact at end of valve travel is soft as possible.	X		
TC-100 Controller (#79-422-05)	Ruggedized Win10 Pro Tablet Controller to operate and collect data for either arm (ERV-750) or slide (TM-6 upgraded & TM-7) style valve exercisers. The TC-100 includes a built-in GPS and bright touch screen display. TC-100 is water resistant and meets IP68 and MIL-STD-810G military specifications. Trimble R2 GPS upgrade kit 79-412-02 (Submeter without subscription or down to Centimeter with subscription service) optionally available.	X		
Data Management	Fully compatible with the VITALS database, infraMap with VITALS, Unity with VITALS, or Sedaru with VITALS GIS software packages enabling full data logging and synchronization between the handheld and your ArcGIS database. Allows importing/exporting of existing data labels and categories with user-defined fields.	X		

Power Pack		Yes	No	Specify
Engine	Kubota 1.1L, I-3 4-stroke, liquid cooled, IDI diesel engine EPA Tier 4F & EU Stage IIIA emission compliant (trailer #77-000-38)			Select Engine
	Kohler 27 HP [20.1 KW] gasoline, model CH7405 Command Pro27 (trailer #77-000-36)			
Fuel Tank	Fabricated 10 gallon (38L) aluminum alloy tank utilizing rolled mid section and stamp formed end caps. Complies with all Federal Motor Carrier Safety Administration requirements for non-side mounted fuel tanks.	X		
Battery	12V, 550 CCA, Size 24 deep cycle battery fully enclosed and mechanically secured.	X		
Controls	Digital tachometer, engine hour meter, volt meter, vacuum gauge, spoils dump switch, spoils door switch, water/vacuum selector switch, arrow board control and service light switch.	X		
Vacuum Pump	Clutch operated, dual belt drive, positive displacement rotary lobe (Roots Type) blower. Vacuum performance of 500 CFM [14 CMM] @ 11 inches of Hg [37.2 kPa] produces conveying velocity rating of 10,185 FPM [3,104 MPM] through 3" [76 mm] hose.	X		
Water Pump	Clutch operated, dual belt drive, 2.5 GPM [9.4 lpm] @ 3,000 PSI [206 BAR] pump.	X		
Hydraulic System	HTMA class II direct-coupled pump rated at 8 GPM [30 LPM] @ 2,000 PSI [138 BAR] continuous duty. 10 gallon [37 L] hydraulic reservoir with thermostatic controlled fan cooled heat exchanger (factory set at 120F/49C). Hydraulic circuits controlled via solenoid operated control valve with pressure neutral, return to tank default position or if over temp is signaled (185F/85C). All electrical terminations are Deutsch IP67 waterproof connectors; hydraulics are leak-tight JIC or O-ring face. Reservoir cleaning, filler neck, and filter are all easily accessed through the front panel. Instrumentation includes an oil level gauge, temperature gauge, pressure gauge, and selector switch for the hydraulic circuit with status lights.	X		

Spoils - Rear Discharge (pump specifications in the Power Pack section)		Yes	No	Specify
Debris Holding Tank	250 gallon [946 L] holding capacity. Top-hinged, full-opening dump door with twin hydraulic remote operation door latches, sure seal square gasket, vacuum break valve, 6" [152 mm] mechanical ball shut-off, and 3" [76 mm] dump valve.	X		
Filtration	Staged filtration consisting of a heavy material drop out debris tank and a self-contained multi-stage filter canister with a 10 micron polyester reusable cartridge. All filters washable and reusable.	X		
Dumping	Twin cylinder, electric over hydraulic dump system, powered by Monarch HPU. The slide and tip system moves the tank out before tilting to clear the trailer for dumping, then lifts to 55 degrees to drop debris.	X		
Dump Chute	10 gauge, rolled Stainless Steel	X		
Hose and Wands	3" x 20' [76 mm x 6 m] suction hose with 2.5" [63 mm], 1.25" [31 mm] and .875" [22 mm] x 8' [2.4 m] long steel suction wands.	X		

Pressure Washer (pump specifications in the Power Pack section)		Yes	No	Specify
Water Holding Tank	90 gallon [340 L] clean water holding tank with 8" [203 mm] fill neck.	X		
Winterization	Low point drain for held water & recirculation system allows operation in sub-zero temperatures. A separate (3) gallon [11 L] antifreeze tank with two position selector valve allows pump to source antifreeze and prime entire system.	X		
Hose and Wands	50' [15.2 m] hose on spring rewind hose reel uses quick disconnects to change between the (2) included wands; one with a zero degree nozzle for digging and 45 degree, fan wash down "Shorty" wand.	X		

Trailer		Yes	No	Specify
Frame	7,000 lbs [3175 Kg] GVWR trailer with single axle, independent torsion wheel suspension and electric brakes. All structural steel construction (no tubing) with metal deck. Tongue weight is 850 lbs [386 Kg] dry.	X		
Lighting	DOT approved LED lighting with Weather Pack environmentally sealed connectors.	X		
Finish	Entire trailer is solvent washed and phosphoric etched. All seams are caulked then a two-part urethane paint (color white/black) is applied. A durable plastic bed lining product is then applied to the trailer deck and fender fronts.	X		
Pintle Hitch	Pintle with Safety Chains	X		
Safety Compliance	Member of the National Association of Trailer Manufacturers (NATM) and verified compliant with NATM Guidelines. Guidelines are a compilation of federal safety standards and regulations along with industry best practices that govern trailer construction. Compliant manufacturers have had a third-party expert verify their processes are designed to produce trailers which meet Federal Motor Vehicle Safety Standards and recommended industry practices. It signifies a commitment to safety.	X		

LX Package		Yes	No	Specify
Job Box	Heavy duty, locking, polished diamond plate job box.	X		
Service Lighting	Programmable eight-function arrow board light bar features six lighting sections, dual-mounted swiveling halogen work lights, and a control box.	X		
Bluetooth Tether	Wireless control of your valve exercising machine via a secure Bluetooth connection.	X		
Hydraulic Hose Reel	50' [15.2 m] spring rewind hose reel with quick disconnects for auxiliary hydraulic power.	X		