



Memorandum

MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT

Reviewed by 
General Manager Date 10/10/07
loewmmd

DATE: August 8, 2007
TO: General Manager
FROM: Senior Engineer
SUBJECT: Award of Contract for the Construction of the Fire Protection Water Pumping System and Authorize the Purchase of a Pre-Assembled, Skid-Mounted Pumping Package

RECOMMENDATION: That the Board of Directors accept staff recommendation to (1) Award a construction contract in the amount of \$144,200 to Don Chapin Company of Salinas, California, and issue a Notice of Award for the construction of a Fire Protection Water Pumping System, and (2) Accept the proposal from The Brown Company to furnish a fully pre-assembled, skid-mounted pump package, including pumps, motors, controllers, bladder pressure tanks, and valves, for the total purchase price of \$73,882, including freight and sales tax. Funds for this project have been included in the Facility Improvements portion of the FY 2007/08 Capital Outlay Budget.

BACKGROUND

Last year, staff reported to the Board that the water supply normally produced by the Brown Bulb well had become unavailable, due to continued infiltration of packing sand into the well casing as a result of a hole in the casing. The Brown Bulb well is a critical asset, as it furnishes fire protection water for the District's facilities. Staff was directed by the Board at the June 2006 meeting to conduct a study to evaluate the options available to provide the necessary fire suppression water for the District. Staff retained a local water supply engineering consultant, Utility Services, to assist in the evaluation of the various engineered solutions. The Water Systems Master Planning Report was completed, and the chosen option, as approved by the Board at the April 2007 meeting, was to not drill an expensive new deep well, but to patch the hole in the casing and insert a new smaller 3-horsepower (hp) submersible pump in the well, replacing the much larger 60-hp pump, which was pulling sand into the casing. The necessary repairs to the well casing have been completed and a new small pump has been installed in the well. As a result of these repairs, the production rate of the well has been reduced from over 300 gallons per minute (gpm) to 32 gpm.

The City of Marina Public Safety Department has been consulted as to the adequacy of the District's fire protection system. Fire Chief Harald Kelley indicated that even with the previous flow rate of 300 gpm, the system was deficient in being able to deliver adequate fire flows, and that this deficiency must now be remedied. In addition to the increased fire flow requirement, the District must be able to deliver the required water pressure and volume so the fire sprinklers will operate hydraulically as designed with no delay. This will entail the installation of a large 1,500-gpm fire pump, and a smaller jockey (booster) pump to maintain pressure in the system. Chief Kelly has stated that the existing fire protection water storage capacity, at 92,000 gallons, is adequate for now, but may have to be increased prior to any future expansion of the District's Materials Recovery Facility (MRF) or any other substantial facilities expansion project.

At the April 2007 meeting, the Board of Directors authorized staff to call for bids for the installation of fire protection pumps and appurtenances at the existing water storage tank. Staff proceeded to work with Utility Services to develop the detailed engineered design plans and specifications and bidding documents for the required fire protection pumping system. The pumping system will draw water directly from the existing 92,000-gallon storage tank into the existing fire suppression distribution system. The proposed skid-mounted pumping equipment will be enclosed in a new 15'x 20' building to be located adjacent to the existing water storage tank (see attached photo). The building will be a concrete masonry block structure with a concrete slab foundation/floor, wood truss roof framing, and asphalt roof shingles. The pumping system will include a large capacity 1,500-gpm fire pump (100-hp) to provide fire suppression flows to the building sprinkler systems and fire hydrants. A smaller 100-gpm jockey pump (3-hp) will be provided for the continuous pressurization of the fire suppression system. Two additional smaller pressure pumps will be furnished to provide water to the on-site composting operations. All necessary controllers, valves, meters, and connecting piping will also be furnished.

The pumps will be driven by electric motors supplied with power from the District's Landfill Gas Electrical Generation and Distribution System. The pumping system is designed in accordance with the requirements of the Uniform Fire Code and the Marina Fire Department. Marina Fire Chief Harald Kelley has not required the installation of a dedicated back-up emergency generator to power the new fire protection pumping system during times of electrical power outages. This is because the new fire protection system will retain the capability of accommodating the Marina Fire Department pumper trucks to deliver fire water during a structure fire. The large 100-hp, 1,500-gpm fire pump motor would require a 200-kW generator at a cost of approximately \$50,000 to \$60,000. Therefore, installation of a new back-up generator is not recommended at this time.

REPORT OF BIDS

On July 18, 2007, staff issued a Notice Inviting Bids to potential bidders. On July 25, 2007, staff held a mandatory Pre-Bid meeting that was attended by a total of three contractors. At 2:00 p.m., August 8, 2007, a total of three sealed bids were received, opened and declared publicly, as shown below.

CONTRACTOR	LUMP SUM BID PRICE
Don Chapin Co.	\$144,200
Monterey Peninsula Engineering, Inc.	\$176,000
Granite Construction Co.	\$239,239

On the basis of bid price, experience, and ability to perform the work, staff recommends award of the contract to Don Chapin Company.

PREFABRICATED FIRE PUMP PACKAGE

Staff is recommending the separate purchase of an engineered, prefabricated, skid-mounted fire pump assembly, directly from the vendor, to avoid the 10% to 20% markup that a general contractor would apply to the price. The general contractor, in this case the Don Chapin Company, will install the pump package in the new building, and connect the suction and discharge pipes of the pumping equipment to the existing site piping.

This pump package will come completely assembled and mounted on a steel skid base, which is designed to be secured with anchor bolts to a concrete floor slab and filled with concrete, providing a "poured-in-place" foundation that provides vibration dampening.

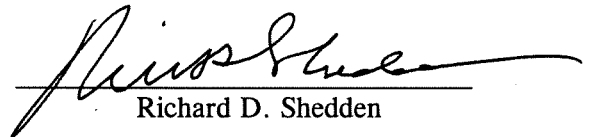
We received two proposals from pump package vendors, with the following prices: \$73,882 and \$82,577. Staff is recommending that the Board accept the proposal from The Brown Company to furnish a fully pre-assembled, skid-mounted pumping system, including pumps, motors, pump controllers, bladder pressure tanks, and valves, for the total purchase price of \$73,882, including freight and sales tax. A copy of The Brown Company proposal is attached.

PROJECT SCHEDULE

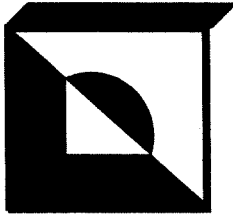
The proposed project schedule is presented in the attached table. The schedule calls for issuing a Notice-to-Proceed on August 28, 2007. Completion of all improvements is expected by the end of December 2007.

CONCLUSION

Construction bids were reviewed by staff and it was concluded that the low bid from Don Chapin Company meets the specifications and best meets the needs of the District. It is therefore recommended that the Board of Directors approve the award of a construction contract in the amount of \$144,200 to Don Chapin Company and authorize the issuance of a Notice of Award for the construction of the Fire Protection Water Pumping System. It is also recommended that the Board accept the proposal from The Brown Company to furnish a fully prefabricated fire pump package for the total purchase price of \$73,882, including freight and sales tax. This brings the total equipment purchase and construction cost to \$218,082. Funds for these improvements are available in the FY 2007/08 Capital Outlay Budget as per the following line items: \$200,000 for installation of fire protection pumps and appurtenances and \$30,000 for miscellaneous facilities improvements.


Richard D. Shedden

Attachments



The Brown Company

Manufacturer's Representative
28847 Mack Street
Hayward, CA 94545
Contractors License # D21-715370
Phone # 510 886 5260
Fax # 510 537 7707
<http://brownco.cncoffice.com>

7-13-07

Utility Services
613A Ortiz Ave.
Sand City, CA 93955

Attn: Gary Wiegand

Subject: Fire Pump for Monterey Regional Waste Management Department –REV 7-13-07

Gentlemen: We are offering an Aurora Pump, UL Listed, FM Approved Fire Pump for this application as detailed below:

FIRE PUMP – 1,500 GPM @ 75 PSI

- 1 – Aurora model 5-481-15 Horizontal split case type fire pump mounted on a common fabricated steel base with a 100 HP, 1770 RPM, 460 Volt, 3 phase, ODP Motor. The unit will have a coupling & coupling guard
- 1 - UL listed fire pump controller for 100 hp, 1770 RPM, 460 Volt, Solid State soft start reduced current start, full service type, 100,000 AIC, NEMA 2 Enclosure
- 1 - 3/4" casing relief valve
- 1 - 1/2" Automatic Air Release Valve
- 1 - 8" Venturi Flowmeter, grooved ends
- 1 - 8" x 6" Eccentric Reducer
- 1 – 6" x 8" Concentric Increaser
- 1- Jockey pump and controller, 100 GPM @ 85 PSI, 460V 7.5hp
- 1 - Set Suction and Discharge Gauges
- 1- Item of start up and testing

1-ETL/C-ETL Listed (Third Party Certified) Engineered Packaged Fire Pump piping system assembly including :

- A: Isolation and check valves, spools and supports for all pump room piping.
- B Piping and valves are included for sensing lines,
- C floor drains, packing drains, and necessary items for an operational Electric motor driven fire pump package requiring two flange connections
- D Venturi Flow meter piping, with isolation valves, 8" Piped to End of skid
- E Seismic Calculations

Package piping system assembly will be mounted on a tube steel-perimeter skid base for entire assembly, suitable for rigging onto an existing foundation.

(1) **TIGERFLOW** Series VMS-4000-VFD, Model DBV-3GF-C-S2-VFD UL/C-UL Listed engineered packaged **variable speed** duplex domestic water booster system consisting of:

Condition Point: 40 gpm @ 70 psi
Suction Pressure: # min # max

- (2) Grundfos Series CR, Model CR10-4, cast iron, stainless fitted, mechanical seal, vertical multistage pumps each close-coupled to a 3 hp, 3600 rpm, 3/60, odp high efficiency motor

Condition Point: 40 gpm @ 162' tdh (each)

- (2) 2" wafer style, non-slam check valves
- (4) 2" isolation lug style butterfly valves
- (1) Low flow by-pass
- (2) Non-electric combination temperature probe & purge assemblies with 1/2" PRV on purge line

- (1) U.L. Listed, **NEMA 4, Tiger's Eye Mark V, E-Series Solid State, Power and Control Panel**
 (*)U.L./C-U.L. 508 Label

(*)Micro Controller:

-Flash Memory

-EPROM Latched Main Memory

-Multi Level Security Passwords

(*)Touch screen operator interface Model B-6 with 6" Blue Scale screen

Functions Included:

- (PID) Pressure Sequencing with Read-out in PSI**
- Suction and Discharge Pressure Read-out in PSI3
- Event History Log
- Individual Pump Run Indication
- H-O-A Selectors
- Elapsed Time Meter
- Low Suction Alarm with On-Off Time Delays
- Low System with On-Off Time Delays
- High Suction "Energy Savings" Shutdown with On-Off Time Delays, Enable /Disable
- High System Alarm with On-Off Time Delays
- Automatic Alternation of Equal Sized Pumps
- 32-bit RISC Micro-Controller
- USB Port
- RS-232, RS-485, RS-422 Communication Ports

- (2) Thru Door Disconnect(s) with Individual Motor Circuit Protection

- (2) Sub Micro NEMA I Variable Speed drives with PWM and thru the door operator interface

- (*) 24 Volt U.L./C-U.L., CE Approved Switching Power Supply. Unit Must Have Built-In Breaker Bar with Over Demand Protection

- (*) 120 Volt Fused Control Circuit Transformer

- (1) Power on Light

- (2) Common Auxiliary Alarm Contacts

- (2) Panel Mounted **Stainless Steel** Pressure Transducers [(1) Suction, (1) Discharge]

- (**) **Optional EMS interface**

- (1 set) 2" (Stainless Steel) suction and discharge headers – **grooved system connections - vertical mounted pumps**

- (1) Steel system skid with all necessary pipe supports, tubing and wiring for complete package.

- (*) Unit to be factory primed and painted with machine grade finish coat

System to be completely, electrically, hydrostatically and run tested before shipment

- (*) All welding to be done by ASME Code Section 9 certified welders.

Each **TIGERFLOW** package system is UL/C-UL Listed as a system, so meeting OSHA and Federal Regulations

29CFR1910.303 and .399, as well as, NFPA Pamphlet #70 (National Electric Code) Article 90-7, City of Los Angeles Approval Code # M-980006 -CMR 248 Massachusetts State Plumbing Code Approval # P3-0207-281.

"errors & omissions: this quotation is for the items listed or stated above. No other items should be assumed or implied as being provided."

Total price., FOB Factory, Freight Allowed, Not Including Sales Tax \$ 68,888.00

Terms to be n-30, subject to credit approval. Prices valid 30 days. Delivery is 10-12 weeks after receipt of a released order and approved submittals. Attached terms and conditions will apply. Purchase orders are to The Brown Company. Off loading of package from truck and rigging is by others. Sales tax is not included. Sales tax must be added to the above price unless a valid resale card can be provided prior to production

Very Truly Yours

Eric J. Silva, Representatives for Aurora Pump, and Tigerflow Systems

Price	\$ 68,888
Sales Tax	<u>4,994</u>
TOTAL	\$ 73,882

Monterey Regional Waste Management District

Fire Protection Water Pumping System

PROJECT SCHEDULE

DESCRIPTION	LEAD PARTY	TARGET/ COMPLETION DATE
Board approves funding for the preparation of a Water System Master Plan and related work.	MRWMD	6-16-06
Utility Services authorized to begin work on Water System Master Plan.	MRWMD	7-5-06
Submittal of First Draft of Water System Master Plan.	Utility Services	10-12-06
Determination made that additional fire protection water storage capacity is not required.	Marina Fire Chief Kelley	1-9-07
Utility Services authorized to furnish and install well equipment for Brown Bulb Well.	MRWMD	2-28-07
Utility Services authorized to provide engineering services for the Fire Protection System Improvements (preparation of design drawings, specifications, and bidding documents).	MRWMD	2-28-07
Submittal of Final Draft of Water System Master Plan.	Utility Services	4-5-07
Board authorizes a "Call For Bids".	MRWMD	4-20-07
New Brown Bulb Well pump and electrical installed.	Utility Services	6-20-07
Submittal of Final Design Plans and Specifications, Construction Bid Documents, and Engineer's Construction Cost Estimate.	Utility Services	7-18-07
Issue "Call For Bids".	MRWMD	7-18-07
Pre-Bid Meeting (Mandatory)(1:30 PM)	MRWMD, Utility Services, Contractors	7-25-07
Issue Addendum No. 1	Utility Services	8-1-07
Bid Opening (2:00 PM).	MRWMD	8-8-07
Board authorizes Award of Construction Contract.	MRWMD	8-17-07
Issue Notice-of-Award.	MRWMD	8-22-07
Issue Notice-to-Proceed.	MRWMD	8-28-07
Obtain Building Permit from Monterey County.	MRWMD, Utility Services, Contractor	8-28-07
Pre-Construction Meeting.	MRWMD, Utility Services, Contractor	9-5-07
Begin construction.	Contractor	9-17-07
Complete construction.	Contractor	12-28-07