Agenda Item #:

Staff Report
City of Manhattan Beach

TO: Honorable Mayor Tell and Members of the City Council

THROUGH: David N. Carmany, City Manager

FROM: Jim Arndt, Director of Public Works
Steve Finton, City Engineer

DATE: October 4, 2011

SUBJECT: Consideration of the Budgeted Purchase of Two Reservoir Mixing Systems from D&H Water Systems, Inc. ($72,596)

RECOMMENDATION:
Staff recommends that the City Council waive formal bidding per Municipal Code Section 2.36.140 (waivers) and authorize the purchase of two Pax Water Technologies reservoir mixing systems from D&H Water Systems, Inc. at the total cost of $72,596.

FISCAL IMPLICATION:
Water Enterprise Funds in the amount of $230,000 were appropriated by City Council for this project through the fiscal year 2011-2012 Capital Improvement Plan.

BACKGROUND:
The City owns and operates the 7.5 million gallon Peck Reservoir at the south east corner of Peck Avenue and 19th Street. This reservoir represents 77% of the City's potable water storage. Chlorine disinfectant is used to maintain water quality in the reservoir. The geometry of the reservoir, inflow and outflow characteristics and vertical temperature variations cause disinfectant concentrations to vary throughout the reservoir. Maintaining consistent chlorine concentrations in water exiting the reservoir has been challenging. A method to achieve uniform chlorine concentrations in the reservoir is needed.

DISCUSSION:
The Environmental Protection Agency's Disinfection Byproduct Rule (DBPR) requires that byproducts of the disinfection process be limited. The final phase of DBPR implementation involves enhanced byproduct monitoring by April 1, 2011. Deployment of water mixers would reduce the likelihood that disinfectant byproducts would form in excessive amounts in the City's water system and would facilitate compliance with the DBPR.

Product Comparison

For comparison purposes, alternative reservoir mixing technologies were investigated – see table below. Each system would provide uniform chlorine concentration throughout the reservoir so that that excess free chlorine will be more effectively controlled and the probability of disinfection byproducts formation will be significantly reduced. The primary competing technologies are the floating draft tube active mixer (SB5000PW v18) and the floor mounted high flow active mixer (GS-12), each designed and manufactured by SolarBee. The PAX Mixing System is a floor mounted active mixer that would provide continuous water mixing to establish uniform chlorine concentrations throughout the reservoir.

Comparison of Mixing Systems

Criteria	PAX PWM-400	SolarBee SB5000PW v18	SolarBee GS-12
Price for Two Units	$72,596	$99,926	$81,608
Number of units	2	2	6
Applicable to thermally stratified tanks?	Yes	Yes	Yes
Applicable to low turn-over tanks?	Yes	Yes	Yes
Number of hours of mixing per day.	24	24	24
On site crane required for installation?	No	Yes	No
Approx. equipment size	65lbs., 4ft. Tall	200-500lbs, 10-20ft. Tall	75lbs., 3ft. Long
installation time	1 day	2 days	1 day
Installation cost	$3,000	$15,000	$19,500
Total	$75,596	$114,926	$101,108

Staff's research indicates that only three viable technologies are available to achieve the required water mixing. Staff concluded that the water mixing system manufactured by Pax Water Technologies is the most effective, easiest to maintain and the lowest cost system. This system is only available through a single regional distributer, D&H Water Systems, Inc., therefore, the competitive bid process is not recommended. As a result, staff recommends that City Council waive formal bidding per Municipal Code Section 2.36.140 (waivers) and approve the purchase of the Pax Water Technologies water mixing systems from D&H Water Systems, Inc. A 2-4 week lead-time is anticipated for delivery of the mixing systems. Once received, staff will perform the installation.