MEMORANDUM # M16-056

TO: Building & Grounds Committee
FROM: Dean R. Bostrom, Executive Director
John Giacalone, Director of Park Services / Development & Risk Mgt.
Mike Kies, Director of Recreation & Facilities
SUBJECT: PSSWC swimming pools filtration systems replacement
DATE: April 20, 2016

Background

The 2016 capital development budget allows for $125,000 to replace two corroded swimming pool sand filter tanks at PSSWC.

Not being comfortably versed in aquatics mechanical renovation, staff enlisted the professional services of Jim Lueders of Innovative Aquatic Design in the amount of $8,600.00. Through conversations with Jim, it was determined that the district and its customers would be better served by upgrading the entire filtration system instead of repairing a system that is already 16 years old.

The old traditional filtration systems are called High Rate Sand Filters. The sand is the medium that catches the particles and impurities in the water. When the particles build up, a backwash is required. To backwash, you reverse the flow of the water and force it backwards with water coming out of a 6 inch diameter pipe through the sand to loosen up the sand and to flush the filtered particles to waste water. This process can take as long as 6-10 minutes at PSSWC and could throw up to 500 gallons of water to waste for every backwash and at PSSWC we backwash depending upon bather load about once a week for each pool as each pool has its own filtration system.

We also need to be aware that all that waste water comes directly from the two pools and has been chemically treated and heated as it was previously the water that people were swimming in. The 2016 capital budget amount of $125,000 was based on replacing the High Rate Sand Filters with similar type filters.

Implications

The latest in swimming pool sanitation is the Regenerative Media Filtration system. Its benefits are, much less water usage, less chemical usage, reduced heating costs, and substantially clearer water.

As noted above, at PSSWC the average backwash uses about 500 gallons of water. With the regenerative system we should use about 15-20 gallons of water for each bump, which is what a backwash is called in this system.

In the Regenerative Media Filtration system, the medium is perlite, a product found in potting soil to keep it loose. When it is time to clean the system an internal bladder inflates and releases causing a bump or small shock wave inside the filter tank which

knocks the filtered particles loose which in turn fall to the bottom of the tank and when the valve is opened simply drains out, not under pressure, losing about 15-20 gallons of water.

It is difficult to exactly predict the payback time of the Regenerative Media Filtration system due to unknown future bather use, but Jim Lueders feels that a five year payback is realistic.

Based on the greater efficiency and quality of water, staff worked with Innovative Aquatic Design who developed bid specifications for two Regenerative Media Filtration systems; one for the lap pool and one for the activity pool.

Four sealed bids were publicly opened and read on April19th at 9:30 am. The bid results are as follows.

Schaefges Brothers $198,990.00
Wheeling, IL

Maverick Pools $205,000.00
Lake Barrington, IL

Chicagoland Construction $218,000.00
Bartlett, IL

B & E Aquatics $308,280.00
Freeport, IL

The apparent low bidder is Schaefges Brothers in the amount of $198,990.00. Staff checked references which were all positive and Jim Lueders verified that they are a good contractor and capable of performing the specified work.

While this is $73,990 short of the projected budget number, not including the $8,600 consultant fee, based on current 2016 capital expense projections vs. budget, staff anticipates that sufficient funds will be available to complete the project within the 2016 capital fund budget.

Recommendations

Staff recommends awarding a contract to Schaefges Brothers of Wheeling, Illinois in the amount of $198,990.00 to install two Regenerative Media Filtration systems at PSSWC.