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Press Release

City Commission awards contract for new Water Treatment Plant

Contract for \$16.874M given Tuesday night to Walters-Morgan with 3-1 vote

ARKANSAS CITY, Kan. (March 21, 2016) — The City Commission of Arkansas City voted 3-1 during its regular meeting Tuesday night to enter into a contract with Walters-Morgan Construction, Inc., of Manhattan, to construct a new water treatment facility at 400 W. Madison Ave.

The commissioners also voted 4-0 to approve a sodium fluoridation system for the new water plant.

The contract is for an amount not to exceed \$16,874,285 for construction and equipment, including \$58,380 for the alternate bid for the fluoridation equipment. Construction is expected to begin around mid-May and be substantially complete by Sept. 7, 2017, with the plant coming online the next month.

The concerns expressed by many citizens who attended Tuesday's meeting in the commission room at City Hall, 118 W. Central Ave., centered on fluoridation and paying off the loan of up to \$22 million to pay for the project, given recent financial difficulties at South Central Kansas Medical Center.

But the existing Water Treatment Facility at 513 W. Washington Ave. already is past its useful life.

And current construction prices are some of the lowest in recent memory, making this an ideal climate for a large construction project, as evidenced by the competitive bids that were received.

The City has expended \$3,634,750 to date on the new plant project and is expecting a reimbursement out of the State Revolving Fund loan once the first draw of funds is made.

Public Works Department officials are drafting a priority list of aging water lines in need of replacement that are the cause of ongoing "red water" complaints throughout Arkansas City.

That list will be presented as soon as April 19 to the City Commission, along with a recommendation for engineering for the project in order to address the worst areas, such as the Highland Drive and Meek Avenue neighborhoods, as well as a few areas east of the Walnut River in the Crestwood neighborhood.

For immediate release

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Replacement of those lines could proceed as soon as this autumn.

History of project

The City of Arkansas City began looking seriously at the possibility of rehabilitating or replacing its current water treatment plant — parts of which were constructed in the 1950s and 1970s, while its clearwell dates to more than 100 years ago — in the early part of the last decade.

In 2006, MKEC was contracted to study what it would take to rehabilitate the existing plant. This study, which estimated the cost at \$13.669 million, did not take into account non-component and non-construction costs. It is estimated that the same project would cost \$17.697 million in today's dollars.

PEC was contracted in 2012 to update the MKEC study and take those added costs into account. It determined the new cost of rehab would be \$20.775 million (or \$21.748 million in today's dollars). PEC also was asked to price the costs of a new conventional treatment plant and a new membrane plant.

The new conventional lime-softening plant was priced at \$24.352 million (\$25.492 million today), while the new membrane plant was estimated at \$29.44 million (\$30.819 million today). Based on the overall findings of the study, the City Commission directed staff to pursue a design-bid-build option for a new conventional plant, but also instructed staff to do whatever was needed to reduce its cost.

CDM Smith and Burns & McDonnell

The addition of CDM Smith to the project in 2013 helped to reduce the cost of a new membrane plant to an estimated \$26.202 million (\$26.944 million in today's dollars), thanks to the design-bid-build process and evaluating other aspects of the overall water system, such as source water degradation.

But the City Commission only approved applying for a loan from the State of Kansas for \$22 million, which meant more efficiencies needed to be identified before the project could proceed any further.

Burns & McDonnell was brought on board in 2014 to find cost savings in the project. It found ways to eliminate the deep injection of wastewater, separate the bid packages for the new clearwell and waste disposal line to save some mobilization dollars, and reclassify the City's source water.

This last step allowed for a savings of \$1.449 million by switching from microfiltration to Greensand filters, plus added savings from removing a de-gasifier, chlorine contact basin and transfer pump station.

All told, Burns & McDonnell identified approximately \$4.1 million in savings from CDM's estimate.

Project overview

The new water treatment facility will use advanced technology to produce a higher quality of water more efficiently, effectively reducing operating costs by approximately 20 percent over the existing plant.

This project was split into four phases to save on general contractor markup costs.

The first phase, construction of a 1.5-million-gallon pre-stressed concrete tank for an amount not to exceed \$1.672 million, is expected to be completed by mid-May. Construction time on the new clearwell was about a year total. Crews are finishing painting the tank and adding decorative finishes.

The second phase, pre-procurement and piloting of the plant's reverse osmosis and Greensand equipment, was completed late last summer, with contracts awarded to Hungerford & Terry for the Greensand and H₂O Innovation for the RO filters, for a total amount not to exceed \$3.374 million.

That cost will be added to Walters-Morgan's base bid for plant construction, Phase 3, which was \$13.5 million. The total cost of plant and equipment is \$16,815,905. An alternate bid of \$58,380 was added to the total base bid to include fluoridation of water in the new plant's operations.

Walters-Morgan was the low bidder on the project. Wichita-based Utility Contractors, Inc. was the next lowest, at \$17.297 million, while Columbus-based Crossland Heavy Contractors, Inc. bid at \$17.447 million and Wildcat Construction Co., Inc., also of Wichita, projected its cost at \$18.125 million.

The final phase of the project, construction of a \$1.243 million waste-stream pipeline from the new plant to the Wastewater Treatment Facility, is scheduled to have bids opened in August.

Pilot study results

The second phase, or pilot study, was conducted from Aug. 5, 2015, to Sept. 23, 2015, at the request of the Kansas Department of Health and Environment (KDHE), in order to prove the ability of GreensandPlus filters and reverse osmosis (RO) membranes to meet specific water quality and operational goals.

Ultimately, the pilot study verified that the proposed water treatment process will meet the water quality goals of the City effectively, and provide an economical source of quality drinking water for the citizens and businesses of Arkansas City well into the future.

The pilot study, which tested over a 48-day period the treatment and filtration processes that would be used in a new plant, was approved June 16, 2015, by the City Commission.

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Test samples of raw water, as well as filtered water from different points in the treatment process, were collected by Water Treatment Facility personnel and sent to Accurate Environmental Labs in Stillwater, Okla., which tested the samples to ensure the treatment process was functioning correctly.

Unlike the current plant, which treats water with chlorine, lime and a variety of other chemicals, the new water treatment facility will have much lower chemical costs.

GreensandPlus results

GreensandPlus filtration was chosen by the project team due to its ability to remove iron and manganese from water.

The City has relatively high levels of iron (0.62 milligram of iron in 1 liter of water) and manganese (3.8 milligrams per liter). If left untreated, iron left in the drinking water would cause rusty color, sediment, a metallic taste and reddish-orange staining.

Residual manganese would cause a black or brown color, black staining and a bitter metallic taste.

In addition, high levels of iron and manganese have a propensity to foul RO membranes severely.

The pilot study verified that GreensandPlus filters can reduce iron and manganese to less than the Maximum Contaminant Levels (MCL) recommended by the U.S. Environmental Protection Agency (EPA). (The EPA MCLs are 0.03 milligram per liter for iron and 0.05 milligram per liter for manganese.)

In addition, the pilot study proved that the filters can operate for a significant period of time without requiring excessive backwashing.

Reverse osmosis results

RO membranes were chosen by the team due to their ability to remove hardness, chlorides, total dissolved solids and many other contaminants. The City's well water has high hardness (498 milligrams per liter), chlorides (332 milligrams per liter) and total dissolved solids (1,040 milligrams per liter).

Hardness can cause scaling in piping and on plumbing fixtures. Chlorides impart a salty taste to water and can lead to pipeline corrosion. Total dissolved solids can result in deposits, discolored water and staining. All of these were observed as part of source water degradation observed by CDM Smith.

The pilot study verified that the water produced by the RO membranes is of very high quality, with levels of hardness, chlorides and total dissolved solids well below the levels recommended by EPA.

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It is anticipated that the RO membranes effectively will remove approximately 1.1 million pounds of chlorides, 1.4 million pounds of hardness in the form of calcium carbonate and 3.2 million pounds of total dissolved solids from the drinking water on an annual basis, based on the current average water usage.

The result is high water quality output, without the negative impacts associated with high hardness, chlorides and total dissolved solids. The pilot study also proved that long-term operation of the RO system is sustainable without significant impacts of fouling and scaling on the membranes. That directly relates to a savings for the City associated with chemical costs, labor and maintenance.

Other infrastructure improvements

In addition to beginning construction on the new plant, drawing on the KDHE State Revolving Fund loan also will provide the City with cash funds necessary to pursue other infrastructure improvements.

Foremost on the list is addressing the worst red water issues throughout town. City staff has identified the highest-priority areas and will be bringing them for the City Commission's consideration.

Under the most likely funding scenario, in which all City water users continue to experience annual rate increases of 2 percent, about \$1.4 million is to be set aside this year and next for the replacement of water lines. Possible projects include the previously mentioned Crestwood, Highland Drive and Meek Addition areas, plus a water main that is part of planned street improvements on North Summit Street.

An additional \$500,000 is targeted for the offset and drilling of a new water well in the Arkansas River alluvium. Additional well maintenance will occur in future years as funds become available.

The final phase of new water meter installations, priced at \$550,000, also will be paid for with these funds. Any remaining money above the target of \$3 million in annual year-end cash reserves likely will be put aside for a plant maintenance reserve or used in the event that utility fund transfers are needed.

The first loan payment of \$1.43 million will not be due until February 2018, creating a two-year window in which many of these infrastructure improvements can be accomplished.

In other business Tuesday, the City Commission:

- Accepted the resignation of Commissioner Brandon Every, who did not vote on agenda items.
- Tabled until April 19 a resolution authorizing the City to enter into a voluntary annexation agreement with Arkansas City Industries, Inc. for parcels at 101 and 102 Goff Industrial Park

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Road. The agreement allows for immediate annexation, but phases in the City's additional taxes over a 10-year period. If approved, the voluntary annexation would go to the Planning Commission for a public hearing.

- Unanimously approved the following consent agenda items: approval of the March 15 regular meeting and March 22 special meeting minutes as written; and approval of Nature of Employment and Equal Employment Opportunity personnel policy updates.
- Participated in a two-hour discussion on the new water treatment facility, culminating in the votes to approve the construction contract and fluoridation system. Commissioner Dan Jurkovich cast the only dissenting vote regarding construction of the new water plant.
- Ratified Mayor Chad Giles' reappointments of Mark Paton to the South Central Kansas Medical Center Board of Trustees and Marilyn Stout to the Arkansas City Public Library Board of Trustees, plus his appointment of Peggy Soule to the Beautification and Tree Advisory Board.
- Discussed, but ultimately decided against, holding a special meeting or a joint meeting with the SCKMC Board of Trustees to discuss the medical center's financial situation. SCKMC officials will make their regular monthly report at the April 19 meeting.
- Unanimously voted to approve a charter ordinance exempting the City from the provisions of K.S.A. 40-1707, relating to the permissible use of funds by the Arkansas City Firefighters Relief Association, and providing substitute and additional provisions relating thereto. The changes will make it possible for the relief association to offer annuities in lieu of traditional insurance.
- Unanimously voted to authorize the purchase of a new folder-inserter machine from Midwest Single Source for an amount not to exceed \$11,621. It is used to fold and insert all utility bills.
- Unanimously voted to approve City insurance coverage for property, liability, vehicles, and equipment through EMC Insurance Companies, of Wichita, and United Agency for an amount not to exceed \$187,989. That is up about \$6,000 from last year's insurance costs.
- Heard an update from Public Information Officer Andrew Lawson on the City's new website, which will launch next week. It will be provided by Revize Software Systems, of Troy, Mich., at an annual hosting cost of \$8,432, which includes all design and launch expenses.
- Heard an update from City Manager Nick Hernandez on the City's sales tax fact sheet.
- Unanimously voted to move into executive session for three minutes to discuss confidential financial affairs of a third party, with no action following.