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Pgs. 8
Filed: 07-19-16

Sponsored by: Hosmer

First Reading: _____

Second Reading: _____

COUNCIL BILL NO. 2016-181

SPECIAL ORDINANCE NO. _____

AN ORDINANCE

1 APPROVING the plans and bid specifications, and accepting the bid of Crossland
2 Heavy Contractors, Inc. for the Biosolids Treatment Improvements
3 Project (Plan No. 2016PW0027s) at the Southwest Wastewater
4 Treatment Plant, in the amount of \$32,389,415.00; authorizing the City
5 Manager, or his designee, to enter into a contract with such bidder; and
6 approving a budget adjustment to amend the Fiscal Year 2016-2017
7 budget of the Environmental Services Department for the Clean Water
8 Fund in the amount of 10 percent of the construction of this project
9 (\$3,200,000.00) to cover contingencies and construction management
10 services for this project.
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13 WHEREAS, Crossland Heavy Contractors, Inc. is the lowest responsive and
14 responsible bidder for the installation of Biosolids Treatment Improvements Project
15 (Plan No. 2016PW0027s) at the Southwest Wastewater Treatment Plant (SWTP); and
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17 WHEREAS, this project is to upgrade the digestion and sludge handling facilities
18 at the SWTP (see "Exhibit A" for Project Principle Components), to meet the forecasted
19 loading through 2031 and in doing so, increasing digestion capacity, gaining more
20 effective stabilization of the biosolids, reducing biosolids related odors, and increasing
21 biogas production; and
22

23 WHEREAS, this project will result in utilizing the additional free biogas fuel and
24 once on-line, is projected to produce approximately 45 percent, and potentially up to 66
25 percent, of the current SWTP electrical needs, representing a major step toward energy
26 efficiency and sustainability for the SWTP.
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28 NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF
29 SPRINGFIELD, MISSOURI, as follows, that:
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31 Section 1 – The City Council hereby approves the plans and specifications of the
32 Biosolids Treatment Improvements Project (Plan No. 2016PW0027s), (see "Exhibit B"
33 for location map).

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Section 2 – The City Manager is authorized on behalf of the City of Springfield, Missouri, to accept the low bid of Crossland Heavy Contractors, Inc. for the Biosolids Treatment Improvements Project (Plan No. 2016PW0027s) at the SWTP, in the amount of \$32,389,415.00, for that project as set forth in said bid, except as said sum may be lawfully increased or decreased by the actual quantities of work units involved, and is hereby authorized to enter into a contract with said bidder for such work in accordance with the terms of the bid, the plans, and the specifications and to do all things necessary to carry out the terms of the contract.

Section 3 – The budget of the Environmental Services Department, Clean Water Fund, for Fiscal Year 2016-2017 is hereby amended in the accounts and in the amounts as show on Budget Adjustment No. 0006, a copy of which is attached hereto and incorporated herein by reference as "Exhibit C."

Section 4 – The City Council hereby finds that the budget adjustment made above has been recommended by the City Manager.

Section 5 –The City Manager is directed to cause the appropriate accounting entries to be made in the books and records of the City.

Section 6 – This ordinance shall be in full force and effect from and after passage.

Passed at meeting: _____

Mayor

Attest: _____, City Clerk

Filed as Ordinance: _____

Approved as to form: *Jim Willington*, Assistant City Attorney

Approved for Council action: *Greg Burns*, City Manager

EXPLANATION TO COUNCIL BILL NO. 2016-181

FILED: 07-19-16

ORIGINATING DEPARTMENT: Environmental Services

PURPOSE: To approve the plans, bid specifications, and to accept the bid of Crossland Heavy Contractors, Inc. for the Biosolids Treatment Improvements Project (Plan No. 2016PW0027s) at the Southwest Wastewater Treatment Plant (SWTP), (see "Exhibit A," listing the principle components of the project and "Exhibit B," giving a project location map) and to authorize the City Manager, or his designee, to enter into a contract for said improvement. This Council bill will also approve a budget adjustment to amend the Fiscal Year 2016-2017 budget of the Environmental Services Department in the amount of \$3,200,000 by appropriating fund balance reserves of the Clean Water Fund.

BACKGROUND:

1. The purpose of this project is to upgrade the digestion and sludge handling facilities at the SWTP to meet the forecasted loading through 2031 and in doing so, convert the existing single-stage anaerobic digestion process to a two-phase (acid/gas), three-stage digestion system resulting in increased digestion capacity, more effective stabilization of the biosolids, reduced biosolids related odors, and increased biogas production.

In order to best utilize the additional free biogas fuel that the digesters generate, this project also includes the addition of two combined heat and power (CHP) generation systems which can produce up to 2.4 MW of electricity and 7.8 million BTUs per hour. Once on-line, this project is projected to produce about 45 percent of current SWTP electrical needs and can potentially produce up to 66 percent of the electrical needs, representing a major step forward in energy efficiency and sustainability for the City of Springfield and the surrounding area.

In addition, this project includes rehabilitation of the existing digesters; improvements to the hauled waste unloading facility; diffuser replacements in the existing nitrification tanks; rehabilitation of aeration piping in the oxygenation and nitrification tanks; addition of sludge thickening equipment and upgrade of the associated polymer feed system; and conversion of existing decommissioned motor control center and ozone generator rooms to cafeteria/break room, conference/training room, offices and bathroom facilities.

2. The Biosolids Treatment Improvements project is included in the 2013-2018 Capital Improvements Program as Southwest Wastewater Treatment Plant Digester Improvements.
3. Plans, specifications, and a cost estimate have been prepared by Black & Veatch Corporation for Environmental Services and are on file in the Director's office.

4. The project was advertised in the *Daily Events* on May 17, 2016 through May 23, 2016 and the *Springfield News-Leader* on May 17, 2016 through May 23, 2016.
5. Bids were opened in the Busch Building on July 1st, 2016, at 10:00 a.m. The following bids were received:

<u>CONTRACTOR</u>	<u>BID AMOUNT</u>
Crossland Heavy Contractors, Inc.	\$32,389,415.00
River City Construction, L.L.C.	33,633,000.00
Garney Companies, Inc.	33,690,000.00
Foley Company	36,690,000.00
Branco Enterprises, Inc.	38,250,000.00
Engineer's Estimate	\$37,503,000.00

6. An evaluation of the bids was performed in accordance with the bid documents to determine the lowest qualified responsive bidder. This evaluation considered compliance with the specifications, contractor responsibility, qualifications, financial ability, proposed subcontractors, suppliers, and other individuals or entities to perform and furnish the work in accordance with the contract documents.
7. Crossland Heavy Contractors, Inc. submitted the lowest responsive bid, which was 13.6 percent below the Engineer's Estimate. Based on the above evaluation of the bid documents, qualifications, and Black & Veatch's recommendation, Environmental Services recommends awarding this project to Crossland Heavy Contractors, Inc. for \$32,389,415.00.
8. This project is funded by the Special Obligation Bonds for Sewer System Improvement Projects authorized by Special Ordinance No. 26567 and passed by City Council on May 11, 2015. The 2015 Special Obligation Bonds are already budgeted. A budget adjustment of approximately 10 percent (\$3,200,000) is required to cover contingencies and Construction Management Services for this project. Funds for the budget adjustment will come from fund balance reserves of the sanitary sewer system and is attached to this council bill.
9. This resolution supports the following Field Guide 2030 goal(s): Chapter 6, Growth Management and Land Use; Objective 5b, Maintain high water quality and increase water quantity by securing and improving water resources for future generations; and Objective 5c, Protect our caves and karst ecosystems which contain plants, animals, and natural communities that depend on the surrounding land and water to thrive and survive. Chapter 10, Public Health; Objective 5c, Ensure a clean and sustainable water supply.

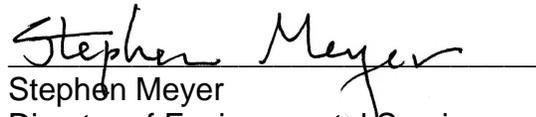
REMARKS: Environmental Services recommends passage of this Council bill and budget adjustment.

Submitted by:



Errin Kemper
Assistant Director of Environmental Services

Recommended by:



Stephen Meyer
Director of Environmental Services

Approved by:



Greg Burris
City Manager

Exhibit A

Biosolids Treatment Improvement Project Principle Components

- A new acid phase digester with a fixed concrete dome (concrete digester tank constructed under prior project).
- A new gas phase digester with a fixed concrete dome (concrete digester tank constructed under prior project).
- Digester mixing and heating equipment for the two new digesters.
- New digester gas booster compressors, drying system, cleaning system including hydrogen sulfide and siloxane removal equipment installed outdoors near the existing digesters.
- Two new dual fuel (digester gas and/or natural gas) engine-generators with heat recovery located in the Main Equipment Building.
- Replacement of the existing engine-driven blower with gearless single-stage electric motor-driven (turbo) blower equipment to supply to process air to the nitrification tanks and channel air for mixing to the nitrification tank influent/effluent channels and oxygenation tank influent/effluent channels.
- Repair and modification to existing digester covers.
- Installation of all new digester gas piping between the existing digesters to the new gas treatment system, existing boilers, new dual fuel engine-generators and the new flare.
- Sludge piping modifications for the conversion to a three-stage system will be located in the lower level of the existing Digester Control Building.
- Modifications to the heating water system supplying sludge and building heating to incorporate heat recovery from the new cogeneration engine-generators.
- Installation of heating water pumps and temperature control valves for the existing sludge heat exchangers serving Digester Nos. 1, 2, 3 and 4.
- A new rotary drum thickener located in the existing Process Building.
- Rehabilitation or replacement of the existing polymer system with a new direct feed type polymer system located in the existing Process Building.
- Modifications to Digester No. 3 including the installation of a new gas membrane cover.
- The addition of a new Waste Unloading Facility (formerly Hauled Waste Unloading Facility).
- Replacement of influent sluice gates (tank nos. 3 and 7; two sluice gates per tank) and influent butterfly valves (tank nos. 1, 5, and 9) at the Nitrification Tanks.
- Replacement of the existing draft tube mixing systems in Digester Nos. 1, 2, and 4 with vertical linear motion mixers.
- Replacement of the nitrification tank diffusers and piping.
- Rehabilitation of the existing aeration piping in the nitrification tanks influent/effluent channels, oxygenation tanks influent/effluent channels, and final tanks influent channels.
- Modifications to the Process Building to convert the existing MCC Room to a cafeteria/breakroom and converting the existing Ozone Generator Room to a conference/training room, offices and bathroom facilities.
- Addition of a lifting point for maintenance of the grip pumps and maintenance cover for the influent screen channel at the Headworks Building.

Exhibit B

**SOUTHWEST WASTEWATER TREATMENT PLANT
BIOSOLIDS TREATMENT IMPROVEMENTS PROJECT LOCATION**

