BILL 2011-30

****** First Reading ******

Agenda Item

TO: Mayor and City Council

FROM: Mark S. Gaugh, Director of Utilities/ACM

DATE: April 4, 2011

RE: Agreement for Sewer System Work

Issues

As you know, we have been preparing the background work for sanitary sewer system improvements in an effort to reduce our infiltration and inflow (I/I). The history and rationale for this work is attached on a separate page. The attached agreement has several parts that describe and implement a Sewer System Evaluation Study (SSES) for the sewer basin serving Lift Station #1 (Basin F-0001) and shown on the attached map. The agreement includes a Multiple Project for Professional Services, Exhibit A (Sample Task Order), Terms and Conditions for Professional Services and the Task Order No. 1 which describes the work and price.

Our anticipated timeline to begin system improvements is as follows:

May/June, 2011-Begin manhole inspections, line televising where needed, smoke testing and dyed water testing for the basin serving Lift Station #1 (F-0001), which is located east of Ensign Trace. These expenses are built into this agreement for subcontracting. Continue flow monitoring and rainfall recording that has already begun in the system with in-house staff. We will be evaluating how we can use our staff for future basin evaluations

July/August, 2011

- Complete the bid process for manhole re-lining/sealing work in the F-0001 basin.

September through October 2011

- Begin the process of sealing/re-lining manholes in the F-0001 sub-basin. This cost is not part of the attached agreement, but will follow as a result of the inspection work done in this agreement. There are approximately 123 manholes in Basin F0001, at various depths. Complete bid process for cured-in-place pipe (CIPP) work.

October through December 2011

- Make repairs/slip-line/CIPP to sewer mains needing repair.

Recommendation

Staff recommends that the Council approve the agreement for $142,954 with HDR for the SSES work on Basin F-0001. Two readings are recommended for this item.

HISTORY/BACKGROUND
FOR
INFILTRATION/INFLOW IMPROVEMENTS AND SANITARY SEWER OVERFLOW (SSO) REDUCTION

The United States Environmental Protection Agency (EPA) and the Missouri Department of Natural Resources (DNR) have stepped up efforts to reduce the impact of municipal wastewater discharges into the environment. During rain events, sanitary systems become overloaded with a combination of surface rainfall and sanitary wastewater. This is referred to as Infiltration and Inflow (I/I). There are many reasons this occurs. Much of the inflow comes from the way the systems were built years ago. Infiltration generally refers to ground or surface water that finds its way into the sewer system through leaking manholes and cracked sewer pipes. Inflow is the water that enters the sanitary sewer system through a more direct connection, such as roof drains, foundation drains of buildings, window wells, driveway drains and building sump pump discharges. The DNR has put many municipalities under strict compliance schedules to remove a significant portion of their I/I in a pre-determined time frame. Fortunately, Cameron is not under such order at this point. We are required, however, to reduce our I/I within a reasonable time frame, as long as we make a continued effort to reduce I/I and eliminate manhole overflows from occurring. EPA maintains the right to speed up our progress and could force higher sewer rates in order to expedite the work process. Our position is to make improvements over a reasonable period of time, while at the same time minimizing the rate impact to our customers.

In Missouri, municipal wastewater treatment systems are inspected by the State on a periodic basis. During our last inspection, the DNR required us to do the following:

- Develop and submit an I&I Assessment and Reduction plan to the DNR by April 29, 2010.
- Develop a formal maintenance plan and incorporate our current maintenance practices into a systematic plan.
- Change our reporting of discharges to give the exact location of each manhole that experiences a discharge. A map picture showing the manhole location is not sufficient.

We have developed and submitted the I&I Assessment and Reduction Plan and received approval. We have developed and submitted the Sanitary Sewer Inspection and Maintenance Program. We are awaiting word from DNR that the plan has been received and is acceptable in form. We have added exact locations of our discharges by developing an identification numbering system for all our manholes and have them all mapped by GPS x,y coordinates. Vertical rim-to-invert elevations will be taken during the manhole inspection process. All manholes now have a unique number for identification purposes.

Since 2008, we have submitted semi-annual reports to the DNR, which outline system maintenance conducted over the previous six months. This reports illustrates to DNR the number of feet of sanitary sewer lines cleaned, roots removed, root treatment applied, televising the lines where practical with our push-type camera, grease control , equipment purchased, lift station checks and maintenance and treatment plant operational data, as well. The semi-annual report is geared more toward the system maintenance performed by our in-house personnel than construction of sewer lines, facilities, etc. We have

initiated a program to reduce grease in the system. On the private side, we mail communication to our commercial customers on the importance of proper grease disposal. However, most grease is generated by food service establishments. We have visited all known food service establishments and gave them the procedures (Best Management Practices-BMP) for grease control at these establishments. To improve efficiency, we have partnered with the two county health departments who help us with follow-up inspections, since they have to do their own inspections of those facilities, anyway.

In May, 2006, we developed a Sewer Overflow Response Plan (SORP) to improve our sewer overflow reporting capability. The SORP is updated as needed to include address changes, contact information, etc. We also have created a plan for dealing with basement backups that occur from sanitary sewer backups.

Now that we have completed the initial items as required by DNR inspection mentioned above, the next step is to follow the plans we submitted. The first step is to address our biggest problem areas, first. Those areas are the sub-basins serving Lift Stations #1 and #2. Lift Station #1 is critical, in that any discharges from that station can find its way into our reservoirs. Lift Station #2 sub-basin will be addressed after Lift Station #1. After Lift Station #2, we will then be able to look at the rest of the system to determine ways to address I/I in those areas. By addressing the F-0001 basin first, we will also be able to determine what can be expected in the other basins.

The process of reducing I&I is a very long, difficult and expensive one. Finding some sources of water entering the sewer system is relatively simple, but finding the majority of the I/I will be very intensive. Most of these sources are underground and difficult to isolate and identify. Some of the piping is very old and expensive to replace, as well. Fortunately, technology now exists where manholes can be rehabilitated, instead of replaced; sewer lines can be re-lined, instead of replaced, and pipe joints can be repaired by robotic equipment installed in the pipeline. This helps reduce the need for excavation and new replacement materials. CIPP is not always less costly than open-cut installations. It depends on the depth of the sewer and what infrastructure will be disturbed as a result of the work.

Repair Cost Estimate for Sub-basin F-0001 Serving Lift Station #1-Manhole lining and CIPP (pipe re-lining) portion

- Estimated cost is $250 per vertical foot of those manholes needing work. There are approximately 123 manholes in sub-basin F0001, at various depths. If one-half of the manholes need to be re-lined as a result of the inspections, the estimated cost is $155,000.
- Make repairs/slip-line (CIPP) sewer mains that show immediate need for repair. CIPP is estimated at $40 per foot. If 10% of the sub-basin needs to be slip-lined, the cost will be $200,000.

These costs are only estimates. The final result of the work to be done on the inspections side will enable us to determine the repairs needed, along with associated costs.

Bill 2011-30

AN ORDINANCE AUTHORIZING THE CITY MANAGER OF THE CITY OF CAMERON, CLINTON AND DeKALB COUNTIES, MISSOURI TO ENTER INTO AGREEMENT WITH HDR ENGINEERING, INC. FOR PROFESSIONAL ENGINEERING SERVICES (Sewer System Evaluation Study)

WHEREAS, the City of Cameron City Council has elected to make sanitary sewer system improvements; and

WHEREAS, the staff and Council Water/Sewer Committee reviewed the proposal from HDR for proposed work in the sub-basin serving Lift Station #1; and

WHEREAS, the work will enable the City to begin making physical improvements to that sub-basin's manholes and sewer lines.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CAMERON, CLINTON AND DeKALB COUNTIES, MISSOURI AS FOLLOWS:

Section 1. The City Manager is hereby authorized to enter into agreement for $142,954 with HDR Engineering, Inc. for a Sewer System Evaluation Study for Sub-basin F0001 per the agreement attached hereto and made apart hereof.

Section 2. The Mayor is hereby authorized to this ordinance on behalf of the City of Cameron.

Section 3. The City Clerk is hereby directed to attest to the Mayor's signature.

Passed and approved on first reading this 4th day of April 2011.
Passed and approved on second reading this _____ day of _____ 2011.
Passed and approved on third and final reading this _____ day of _____ 2011.

_____
Mayor Dennis M. Clark

ATTEST:

_____
City Clerk

first reading