



Council Communication

Office of the City Manager

Date

March 26, 2007

Agenda Item No. 33F

Roll Call No. 07

Communication No. 07-179

Submitted by: William G. Stowe, Assistant City
Manager/Public Works/Engineering

AGENDA HEADING:

Approving purchase of one (1) John Deere Model 710J Backhoe with attachments as specified in the amount of \$167,850, including trade-in allowance, for use in the Sewer Operations Division of the Public Works Department

SYNOPSIS:

Recommend approval to proceed with purchase of one rubber-tired John Deere Model 710J Backhoe with attachments as specified for use in the Sewer Operations Division of the Public Works Department. The bid proposal was sent to nine companies, and one bid was received from Murphy Tractor & Equipment Co. (Rick Yeager, President), 5087 NE 46th Avenue, Des Moines, IA 50317, in the amount of \$167,850, including trade-in allowance. The bid received was compared to the price available for a comparable model on State contract and found to be approximately \$300 less. Therefore, the purchase is recommended.

FISCAL IMPACT:

Amount: \$167,850

Funding Source: 2007-2008 Operating Budget, Fund EN000, Org PWK071001, Sewer Enterprise Fund, page 240.

ADDITIONAL INFORMATION:

The City of Des Moines Sewer Operations Division performs critical repairs to both sanitary and storm sewers up to the depth of 20 feet below surface grade. During the construction/repair activities, specific requirements are needed to perform lifting activities with the backhoe. These would include activities such as: lifting and placing shoring, lifting and placing sheeting, lifting and placing pipe sections up to 42" diameter by eight feet long, and lifting and placing precast barrel sections or precast inlet sections, etc. In order to perform these activities, the backhoe must meet certain capacity requirements. Specific requirements that separate the models of manufacturers would include:

- **Engine Horsepower** – minimum 118hp – the horsepower requirement is needed to produce the hydraulic flow/pressure of 52gpm @ 3,625 psi to allow the backhoe boom to lift objects weighing up to 6,500 lbs, throughout the travel area of the boom. This also allows for the front loader to lift capacities of up to 8,500 lbs.

- **Front Loader Dump Height** – 9’4” minimum. The sidewall of a tandem truck is 9’2”. The loader dump height allows the operator to visibly see the amount of material he is loading on a truck. We do not experience overloading of the trucks due to this requirement.
- **Front Bucket Breakout Force** – 14,800 minimum. The breakout force requirement is due to the clearing of areas to allow equipment to access repair sites along woody areas and along creeks and rivers.
- **Backhoe Extendable Boom** – 5 ft. The extendable boom allows for the digging depth of up to 22 ft. (20 ft. at invert of pipe, two ft. of bedding to lay pipe on).
- **Backhoe Digging Force** – Bucket Cylinder 17,000 lb., Crowd Cylinder 11,750 lb. These requirements ensure that the backhoe has the capability to not only dig through concrete and the various soils, but it also relates to the lifting capacity of the backhoe. As stated earlier, our requirements for lifting are dictated by the work the machine performs. The weight of reinforced concrete pipe sections, manhole barrel sections, shoring boxes, and material boxes are all given consideration to produce this requirement.

The five main requirements listed above are needed on a rubber-tired unit. A tracked excavator was not specified due to the need to drive the unit from location to location. Since only one vendor responded, staff compared the bid to the State bid contract price and found that the unit bid including the required attachments was approximately \$300 less. The new unit meets 2007 Tier III Emissions Standards, as established by the Environmental Protection Agency, resulting in a 90 percent reduction in diesel particulate (soot) matter.

PREVIOUS COUNCIL ACTION(S): NONE

BOARD/COMMISSION ACTION(S): NONE

ANTICIPATED ACTIONS AND FUTURE COMMITMENTS: NONE