ITEM 20

OFFICE OF THE CITY MANAGER
DES MOINES, IOWA

CITY COUNCIL COMMUNICATION 97-128
MARCH 17, 1997 AGENDA

SUBJECT:	TYPE:	SUBMITTED BY:
PROFESSIONAL SERVICES FOR SANITARY SEWER HYDROGEN SULFIDE STUDY	◆ RESOLUTION ORDINANCE RECEIVE/FILE	HAROLD E. SMITH CITY ENGINEER

SYNOPSIS —

An agreement has been negotiated with the engineering firm of Brown and Caldwell, Craig Goehring, President and C.E.O., 3408 Buskirk Avenue, Pleasanthill, CA 94526-4342, to provide Engineering Services for the Phase 2 of the Sanitary Sewer Hydrogen Sulfide Study Report. The proposed amendment to the agreement is a cost plus fixed fee arrangement and provides for General Engineering Services. The proposed fee for General Engineering Services is $53,254 plus a fixed fee of $3,998, which results in a total maximum fee of $57,253 for this agreement.

FISCAL IMPACT —

Funding for this project is provided for on page 217 of the 1995-96 Capital Improvements Program.

RECOMMENDATION —

Approval of the proposed Amendment to the Engineering Agreement with Brown and Caldwell.

BACKGROUND —

Prior to construction of the Wastewater Reclamation Authority Interceptor Sewer System, most sanitary trunk sewers in Des Moines flowed full on a nearly continuous basis. Hydrogen sulfide gas accumulation in the air space above the water surface was at a minimum, and consequently, little damage occurred to the pipe as a result of corrosion by hydrogen sulfide gas. On completion of construction of the WRA System, the trunk sewers now flow only partially full most of the time except for wet weather periods when they flow full providing relief from sewer backups and flooding episodes. Unfortunately, the partially filled sewers provide an opportunity for hydrogen sulfide gas to accumulate for longer lengths of time above the water surface in the pipe. The hydrogen gas attacks the interior surface of the sewer, and if left unchecked, will corrode the sewer to the point of destruction of the pipe and manholes.

Large pipes can accumulate significant quantities of hydrogen sulfide gas; consequently, it has been determined beneficial to examine five trunk sewers near the wastewater treatment plant initially to determine the extent of corrosion in the large pipe.

It is timely to perform this study because sewer maintenance personnel have recently observed that corrosion has already begun in several of the trunk sewers. This study is necessary to identify the extent of the problem so that appropriate measures can be implemented to minimize the need for costly extensive repair or complete replacement of the trunk sewers because of hydrogen sulfide corrosion.

The Phase 1 of this study identified that high concentrations of hydrogen sulfide exists in two of the trunk sewers in the area of the Wastewater Reclamation Facility. Phase 2 will further evaluate levels along these two trunks and identify probable sources and contributing factors to any identified excessive levels. This study will also propose any required remedial action.