

Memo



To: Clay Pearson, City Manager

From: Mahogany Isabell, Project Manager

CC: Trent Epperson, Assistant City Manager
Robert D Upton, P.E., Director of Engineering & Projects
Skipper Jones, Assistant Director of Capital Projects
Clarence Wittwer, Director of Public Works
David Van Riper, Assistant Director of Public Works
Julian Kelly, Superintendent – Water Production
John Hines, Superintendent – Distribution &

5/30/19

To: Mayor and City

Council members

Design contract forthcoming to resolve water age issues in Oakbrook. Clay

Date: May 30, 2019

Re: Water Quality Program – Oakbrook & Oakbrook Estates

Purpose

This memo provides advance notice of the proposed engineering design services contract award for the Water Quality Program – Oakbrook & Oakbrook Estates.

Project Background

The City Utility Division has repeatedly received water quality work orders from the residents of Oakbrook & Oakbrook Estates subdivision. The water quality issues are aesthetic in nature (taste and odor) and **does not pose any health or safety issues**. Since January 2018, there has been over 50 residential complaints. The City has tried a number of temporary solutions including but not limited to: scouring the waterlines, flushing the lines, treating the water, extending a water line down Pearland Parkway and switching the source of the water. Despite these efforts, water quality issues in this subdivision are still reported.

These issues are related to the age of the water in the system and can be largely attributed to the oversized water main (12" diameter) within the subdivision, the number of dead end lines that were constructed as the subdivision was developed and continued improvements to water conservation efforts. Without adequate use, the water has the potential to stagnate and develop taste, odor, and nitrification issues. Flushing will only temporarily address the situation and is a costly and inefficient method for improving the water quality within the affected system.

Water modeling has helped to identify areas where dead end water lines are located and has been identifying that water age is becoming a factor. Water age is determined by the estimated length of time that water will stay in the distribution piping before use. The longer that water remains in the distribution piping the increased chance there is for nitrification which leads to taste and odor complaints and a potential reduction in disinfection quality of the water. This results in the short term solution of installing automatic flushers that flush water out of the distribution piping into the wastewater line for a determined amount of time. The long-term solution for this issue is the extension and looping or connecting of the waterlines to improve water flows and reduce water age so that water moves continuously. Removing dead end waterlines will assist in enhancing water circulation and reduce staff call outs to flush waterlines this reducing system water loss.

Scope of Contract

The scope of the proposed work will include Design Phase Services, Bid Phase Services, and Construction Phases Services, as approved, to prepare the construction contract package. Design Phase Services include the preparation of a preliminary engineering letter report with recommendations, Final Design, technical specifications and bid documents for a Lump Sum in the amount of \$32,800.00. Estimated reimbursable expenses as proposed in the contract are \$1,000. The topographic survey will be performed for a Lump Sum in the amount of \$17,600. Bidding and Construction Phase services will be performed on an hourly not to exceed basis for a sum of \$3,250 and \$9,700 respectively, totaling \$12,950.00. The total contract value of the work of engineering design services for the project is \$64,350.00.

The proposal from ARKK Engineers, LLC for professional services associated with the design and construction of the Water Quality Program – Oakbrook & Oakbrook Estates is scheduled to be presented to Council for consideration on the June 10, 2019 agenda.

Budget Info

Funding Sources	Series	To Date	Future	Total Budget
System Revenue - Cash		350,000		350,000
Certificates of Obligation				-
Certificates of Obligation				-
General Obligation Bonds				-
General Obligation Bonds				-
W/S Revenue Bonds				-
Impact Fee - Debt				-
Other Funding Sources				-
Total Funding Sources		350,000	-	350,000

Expenditures	To Date	Future	Total
PER			-
Land			-
Design		64,350	64,350
Construction		270,000	270,000
Construction Management/Inspection			-
Construction Materials Testing		15,000	15,000
FF&E			-
Total Expenditures	-	349,350	349,350

Project Balance/Contingency	650
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Schedule Info

	<i>Base Line</i>	<i>Current</i>
<i>Design Start</i>	July-19	
<i>Bid Start</i>	Jan-20	
<i>Construction Start</i>	March-20	
<i>Construction Completion</i>	Aug-20	

Rain Days: N/A

Recommendation

Staff will recommend Council approve and award the engineering services contract to ARKK Engineers, LLC in the amount of \$64,350.00 at the June 10, 2019 council meeting.

VICINITY MAP



Water Quality - Oakbrook & Oakbrook Estates



1:12,000
1 inch = 1,000 feet



NORTH
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MAP PREPARED: MAY 28, 2019