

**COUNCIL ACTION FORM**

**SUBJECT: ENGINEERING SERVICES AGREEMENT FOR WATER TREATMENT PLANT DESIGN, BIDDING, AND CONSTRUCTION**

**BACKGROUND:**

On October 13, 2009, Council approved a professional services agreement with FOX Engineering of Ames, Iowa for work related to the new Water Treatment Plant. The contract consists of a "master agreement" that contains all of the legal terms and conditions, and a series of "task orders" that describe the specific scope of work and associated fees. The use of "task orders" allows the engineering work to be authorized in segments as the project progresses.

Task Order 1 included those pre-design activities that could be completed prior to commencing the site-specific design. Authorized on October 1, 2009, it included fees in an amount not to exceed \$358,500.

Task Order 2 expanded the scope of work covered by Task Order 1 to include an evaluation of various options for the plant's lime residuals handling facilities and authorized FOX to prepare an updated Opinion of Probable Construction Costs. Task Order 2 was authorized by Council on November 23, 2010 for an additional amount not to exceed \$68,500.

Task Order 3 was executed to add a topographic survey of the proposed plant site and the associated piping routes. This work had been intended to be included as part of the final design phase; but because of delays in securing the property, staff requested the design team to move forward with this activity. Task Order 3 was approved administratively by staff on October 26, 2011 in an additional amount not to exceed \$19,540.

Staff has now concluded a negotiation with FOX Engineering for the final, and most substantial, phase of the project; namely, construction of the improvements. It is envisioned that the project will be bid in three distinct and separate contracts. FOX has proposed three separate Task Orders, one for each bidding contract.

**Task Order 4.1.** This task order is for the design, bidding, and construction phases of the actual treatment facility. This includes development of the construction plans and specifications; assistance with distributing plans and specs, bidder questions, and addendums during the bidding process; construction administration such as reviewing shop drawing submittals, reviewing pay requests, and providing periodic on-site inspections by the various engineering disciplines; a Resident Project Representative to provide daily on-site construction management; plant

commissioning and start-up; and preparation of electronic operations and maintenance manuals.

<b>Task Order 4.1</b>	<b>Compensation Method</b>	<b>Amount</b>
Pre-Design	Hourly + Expenses	Estimated at \$ 60,000
Preliminary Design (40% complete)	Lump Sum	1,388,000
Design Development (80% complete) <sup>1</sup>	Lump Sum	1,663,000
Bidding Contract Documents (100% complete)	Lump Sum	1,155,000
Bidding Administration	Lump Sum	98,000
Bidding Documents <sup>2</sup>	Hourly + Expenses	To be determined as needed
Construction Administration	Lump Sum	1,672,000
On-Site Discipline Services	Lump Sum	235,000
Start-up and Commissioning	Lump Sum	128,000
Post-Construction Services <sup>3</sup>	Hourly + Expenses	Estimated at 130,000
Resident Project Representative <sup>4</sup>	Hourly + Expenses	Estimated at 862,000
Electronic O&M Manuals	Lump Sum	218,500
<b>Subtotal of Lump Sum Expenses</b>		<b>\$ 6,557,500</b>
<b>Subtotal of Hourly + Expenses Estimates</b>		<b>1,052,000</b>
<b>TOTAL</b>		<b>\$ 7,609,500</b>

<sup>1</sup> Not included in this agreement would be any cost for the design engineers' involvement in a Value Engineering review. Should Value Engineering be desired, a change order could be executed to cover the design team's involvement.

<sup>2</sup> All costs associated with the reproduction and distribution of paper and electronic bidding documents will be paid by the Engineer and reimbursed by the City. The actual amount payable under this line item will likely range from \$50,000 to \$100,000, depending on the size of the final bidding documents and number of plan sets distributed.

<sup>3</sup> Post-construction services would include any services provided after final completion, such as investigating deficiencies or warranty follow-up with the contractor.

<sup>4</sup> The estimate assumes a 33-month construction period. The actual expenses could vary based on the actual construction time.

**Task Order 4.2.** This task order is for the design, bidding, and construction phases of the Lime Pond Improvements. City staff will administer a contract for the removal of lime from the existing pond, and FOX Engineering will prepare the plans and specifications for subdividing the pond into smaller, more functional cells.

<b>Task Order 4.2</b>	<b>Compensation Method</b>	<b>Amount</b>
Preliminary Design	Lump Sum	\$ 18,200
Final Design	Lump Sum	44,600
Bidding Administration	Lump Sum	10,800
Bidding Documents <sup>1</sup>	Hourly + Expenses	Estimated at \$3,750
Construction Administration	Lump Sum	47,700
Resident Project Representative <sup>2</sup>	Hourly + Expenses	Estimated at 21,500

Record Drawings	Lump Sum	8,500
Post-Construction Services <sup>3</sup>	Hourly + Expenses	Estimated at 3,000
<b>Subtotal of Lump Sum Expenses</b>		<b>\$ 129,800</b>
<b>Subtotal of Hourly + Expenses Estimates</b>		<b>28,250</b>
<b>TOTAL</b>		<b>\$ 158,050</b>

<sup>1</sup> All costs associated with the reproduction and distribution of paper and electronic bidding documents will be paid by the Engineer and reimbursed by the City for actual expenses.

<sup>2</sup> The estimate assumes 240 hours of part-time observation. To the extent that construction schedules align, observation of the lime pond modifications will be coordinated with observation of the treatment plant construction, reducing the observation expenses.

<sup>3</sup> Post-construction services would include any services provided after final completion, such as deficiency or warranty follow-up with the contractor.

**Task Order 4.3.** This task order is for the portion of the project that includes the untreated well water piping, finished water piping, and lime residual piping to connect the new treatment plant with the existing lime ponds and high service pump station.

<b>Task Order 4.3</b>	<b>Compensation Method</b>	<b>Amount</b>
Preliminary Design	Lump Sum	\$ 69,000
Final Design	Lump Sum	135,200
Bidding Administration	Lump Sum	15,500
Bidding Documents <sup>1</sup>	Hourly + Expenses	Estimated at 3,750
Construction Administration	Lump Sum	110,900
Resident Project Representative <sup>2</sup>	Hourly + Expenses	Estimated at 85,500
Construction Staking	Lump Sum	16,300
Record Drawings	Lump Sum	10,300
Post-Construction Services <sup>3</sup>	Hourly + Expenses	Estimated at 3,000
Easement Acquisition and Wetland Mitigation Assistance <sup>4</sup>	Hourly + Expenses	Estimated at 23,000
<b>Subtotal of Lump Sum Expenses</b>		<b>\$ 357,200</b>
<b>Subtotal of Hourly + Expenses Estimates</b>		<b>115,250</b>
<b>TOTAL</b>		<b>\$ 472,450</b>

<sup>1</sup> All costs associated with the reproduction and distribution of paper and electronic bidding documents will be paid by the Engineer and reimbursed by the City for actual expenses.

<sup>2</sup> The estimate assumes a construction period of 100 working days. This includes observations related to the Storm Water Pollution Prevention Plan. To the extent that construction schedules align, observation of the lime pond modifications will be coordinated with observation of the treatment plant construction.

<sup>3</sup> Post-construction services would include any services provided after final completion, such as deficiency or warranty follow-up with the contractor.

<sup>4</sup> It is not yet known if easement acquisition assistance or wetland mitigation assistance will be required. It has been included in the estimate but will only be expensed if the City requests the service from the Engineer.

The total of the three task orders is as shown below.

	Lump Sum	Hourly + Expenses	Total
4.1	6,557,500	1,052,000	7,609,500
4.2	129,800	28,250	158,050
4.3	357,200	115,250	472,450
Total	7,044,500	1,195,500	8,240,000

The cost estimate for the New Water Treatment Plant Project shown in the 2012-17 Capital Improvements Plan included \$6,540,000 for design, bidding, and construction activities and \$818,000 for the estimated resident project representative. Much of the increased expense for design services can be attributed to the addition of the Leadership in Energy and Environmental Design (LEED) certification and is offset by the Green Project Reserve forgivable loan (grant) of approximately \$5,880,000 for constructing to a LEED certification standard.

The anticipated construction schedule would have the interconnecting piping work and the lime pond improvements occurring during the summer of 2014. Construction of the treatment plant would begin during the summer of 2014, with the facility coming on-line in early 2017.

#### **ALTERNATIVES:**

1. Approve Task Orders 4.1, 4.2, and 4.3 to the Master Agreement with FOX Engineering for professional services related to the new Water Treatment Plant in a lump sum amount of \$7,044,500, plus an estimated amount not to exceed \$1,195,500 for services to be billed on an hourly basis.
2. Approve modified Task Orders that exclude work not desired by Council at this time.
3. Take no action on engineering services, and direct staff on the future of the project.

#### **MANAGER'S RECOMMENDED ACTION:**

Expansion of the treatment capacity of the City's Water Plant first appeared in the 2007-2012 Capital Improvements Plan. This is a project that is exceptionally important for the long-term vitality of the Ames community, both in terms of increasing the capability of the utility to meet growing demands as well as to improve the redundancy and reliability of the treatment process.

At the project outset, a competitive selection process was conducted to identify a consultant to partner with. A collaborative team consisting of FOX Engineering, HDR Engineers, and Barr Engineering was selected as the team that best met the needs of the project. Staff has been very pleased with the quality of services provided to date by the team. City staff has met with the design team to carefully review the scope of work

covered by these task orders and is comfortable that the scope of services includes only those tasks that are essential to the project and that the estimated hours are reasonable.

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, thereby approving Task Orders 4.1, 4.2, and 4.3 to the Master Agreement with FOX Engineering for professional services related to the new Water Treatment Plant in a lump sum amount of \$7,044,500, plus an estimated amount not to exceed \$1,195,500 for services to be billed on an hourly basis.