ITEM # 32
DATE: 07-24-12

COUNCIL ACTION FORM

SUBJECT: PROFESSIONAL SERVICES CONTRACT FOR GASIFICATION SYSTEM FINANCIAL MODELING STUDY

BACKGROUND:

In 2010, the City began investigating alternatives to the current method of directly injecting Refuse-Derived Fuel (RDF) into the Electric Plant's coal-fired boilers. The current method of processing has several drawbacks: approximately 30% of the Municipal Solid Waste (MSW) received cannot be processed into fuel; bottlenecks in the processing flow reduces MSW throughput and storage; burning RDF requires costly special boiler equipment and additional ash disposal costs; and the cost of keeping boilers running to dispose of RDF is sometimes higher when it would be more economical to turn off the boilers and purchase energy from the outside market. Most importantly, evolving federal regulations may actually force the City to move away from a coal-fired power plant. Having that assured "market" for our RDF is the key factor that has made our Resource Recovery System economically successful since the day it opened.

In December 2011, the URS Corporation completed a feasibility analysis of waste-to-energy conversion alternatives for the City at a cost of $89,600. URS made a series of recommendations to improve the existing process, several of which were implemented. URS also provided a basic analysis of different technologies available to convert waste into a "syngas" or liquid fuel. However, the cost estimates provided by URS were not specific to the City's particular situation. After receiving the URS report, Council directed staff to continue gathering more information about gasification.

In response, staff initiated **a Financial Modeling Study to determine the costs and technical viability of different gasification alternatives as they would be integrated into Ames' specific MSW and electricity portfolio**. Electric Services is currently engaged in a parallel study to consider alternatives to provide electricity to the City. This second study will determine the costs to integrate gasification into several different combustion options, including options that could operate independent of the Electric Plant. The City has also asked that the financial model consider the costs of building a new Mass Burn-to-Energy facility, which would take either raw MSW or processed MSW and burn it in a new boiler without converting it to syngas first. Under all scenarios, virtually all recoverable metals would still be removed and recycled.

This financial modeling will require that the firm consider the costs of overcoming technical challenges associated with the new processes, including interfacing with generation equipment, gas cleanup, emissions controls, emergency trip contingencies, and permitting.

On April 20, 2012, the Request for Proposal (RFP) was issued to twenty-seven firms. The document was also advertised on the Current Bid Opportunities section of the Purchasing webpage. On May 18, 2012, responses were received from seven firms. These proposals

were then sent to an evaluation team consisting of the Assistant City Manager, the Public Works Director, the Resource Recovery Plant Superintendent, the Electric Services Director and the Management Analyst.

The evaluation team members independently evaluated and scored all seven proposals. Each proposal was evaluated based on a combination of the cost, experience and qualifications of key personnel, the firm's financial modeling experience, the proposed timeline of deliverables, how well the proposed methodology demonstrates an ability to meet the needed scope of services, soundness and feasibility of the approach, prior experience and demonstrated technical capability. The score for each of these criteria was based on a scale of 1 to 10 and then assigned a corresponding weight factor. The maximum possible score, combining all five evaluators, was 5000. The knowledge and experience related scores represented 85% of the overall score, and proposed fees accounted for 15%. The proposal rankings and fees listed below include the not to exceed costs for options 1, 2 and 3.

Firm	Total Score	Rank	Fee Proposal
HDR Engineering, Omaha, NE	3745	1	$93,705
Burns & McDonnell Engineering Co., Kansas City, MO	3525	2	$138,000
Black & Veatch Corporation, Overland Park, KS	3511	3	$300,300
D & B Engineers, South Plainfield, NJ	3264	4	$110,750
Zachery Engineering, Minneapolis, MN	3262	5	$272,000
Gershman Brickner & Bratton, Inc., Fairfax, VA	3191	6	$400,500
URS Corp, Los Angeles, CA	2941	7	$148,700

The evaluation team invited the top three firms for interviews. All three were asked to provide a brief presentation introducing their team members and their roles, and demonstrating their understanding of the scope of services. Interviews were evaluated based on a combination of each firm's knowledge and experience, communication style, methods and process, completeness of addressing questions and issues, and interest in the project. As with the proposal scoring, each criteria was weighted and given a score based on a scale of 1 to 10. The interview scores, with a maximum possible of 5000 were as follows:

Firm	Total Score	Fee Proposal
Burns & McDonnell Engineering Co	4010	$138,000
HDR Engineering	3845	$93,705
Black & Veatch Corporation	3245	$300,300

After combining the results of these two evaluations, and based on a unanimous decision by the evaluation team following the interviews and responses to follow up questions, final rankings were determined as follows:

Firm	Rank
HDR Engineering	1
Burns & McDonnell Engineering Co	2
Black & Veatch Corporation	3

While Burns and McDonnell Engineering Co. had the highest score from the interviews, a series of follow-up questions led staff to believe that HDR Engineering would be the most successful firm in completing the project. There were very specific reasons why HDR Engineering stood out as the strongest firm. These include the following:

1. The evaluation team determined that HDR Engineering, Inc. will offer **the best value** in terms of the cost of the deliverables for the Financial Modeling Study.

2. Since gasification technology is on the leading edge, few firms can provide **practical experience in an industrial application**. HDR Engineering, Inc. demonstrated their expertise in actively working on a number of gasification projects in California and Minnesota as well as currently implementing a mass-burn system in Hawaii. It is the only firm that submitted a proposal that has implemented a gasification system in an industrial setting.

3. HDR Engineering, Inc. demonstrated a clear understanding of the project parameters and goals through numerous discussions with staff. Staff believes that HDR Engineering, Inc. will provide the **best-developed cost analysis**, with the greatest precision in cost estimates.

In the FY 2012/13 Resource Recovery CIP and budget, $50,000 is earmarked for a Financial Modeling Study. An additional $43,705 will be required to fund this study. Given the importance of this study, it is recommended that this additional funding come from the Resource Recovery Fund balance.

ALTERNATIVES:

1. Award a contract to HDR Engineering, Inc., Omaha, Nebraska, in an amount not to exceed $93,705 for professional services for the Financial Modeling Study for a Gasification System for Resource Recovery Plant, and amend the FY 2012/13 budget to reflect the balance of funding coming from the Resource Recovery Fund balance.

2. Direct staff to enter into negotiations with one of the other consulting firms that submitted proposals for the Financial Modeling Study for a Gasification System for the Resource Recovery Plant.

3. Reject all proposals and do not contract for professional services for a Financial Modeling Study for a Gasification System for Resource Recovery Plant at this time.

MANAGER'S RECOMMENDED ACTION:

The proposed Financial Modeling Study will determine costs and viability of different gasification alternatives as they would be integrated into Ames' specific MSW and electricity portfolio. This step is critical in determining whether newer technologies are compatible with the City's Resource Recovery System and Electric utility. **The Council should note that this is not a conceptual design study, nor will the end result of this study be a "project".** Should one or more of the technology options be determined to be

financially and technically feasible, the City Council would then determine whether or not to secure services to design a project.

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, thereby approving the professional services contract with HDR Engineering, Inc., of Omaha, Nebraska, in an amount not to exceed $93,705 for a Financial Modeling Study for a Gasification System for the Resource Recovery Plant, with the added funding to come from the Resource Recovery Fund balance.