

**COUNCIL ACTION FORM**

**SUBJECT:**     **PROJECT TO RETURN GAS TURBINE 1 TO SERVICE**

**BACKGROUND:**

On January 29, 2015, City Council approved preliminary plans and specifications for GT1 Return to Service Project.

Bid documents were issued to fourteen companies. The bid was advertised on the Current Bid Opportunities section of the Purchasing webpage and a Legal Notice was published in the Ames Tribune. The bid was also sent to two plan rooms.

**Council should note that the work to return GT1 to service is divided into three work categories and the bid document was subdivided into the following three separate bids based on these categories. This approach allows the City flexibility on how to evaluate and award a contract for these categories.**

On March 12, 2015, bids were received from five companies as demonstrated on the attached report.

**Bid No. 1 Engine**

This bid includes the repair of the original engine or replacement with a refurbished engine, the repair or replacement of the engine's support equipment (damaged by the failure of the engine's 1<sup>st</sup> stage compressor), the restoration of the engine's control system, and the installation of the engine along with the necessary connections for it to be ready to operate. **The Engineer's estimate for this scope is \$1,200,000 and should be covered by insurance less a \$350,000 deductible.**

**Four bids were received for this work category as demonstrated on the attached report.** The selected Base and Options are summarized below. Council should note that the selected Base items and Option items are highlighted in bold text on attached report.

BIDDER	BASE: ALT 2 REPLACE	SELECTED OPTIONS*	OVERALL
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Turbo Services, Inc. Margate, FL	\$900,000	\$35,000	\$935,000
<b>Wood Group Pratt &amp; Whitney Bloomfield,CT</b>	<b>\$985,000</b>	<b>(-\$35,050)</b>	<b>\$949,950</b>
Worldwide Turbines Boca Raton, FL	\$985,000	\$210,000	\$1,195,000
MMC Contractors National, Inc. Kansas City, MO	\$1,577,358**	(-\$369,800)	\$1,207,558
* Bids analyzed with two options (fuel manifold replacement & credit for engine core) **Bid amount excludes Iowa sales tax since three out of four bidders are not licensed to collect.			

Electric Services staff, along with an engineer from Black & Veatch Corporation (B & V), performed a careful and extensive evaluation of the bids.

After receiving the bids, a team comprised of the consulting engineer, Assistant Director and the Plant Engineer reviewed the bids and provided follow-up questions to each of the bidders. **Wood Group Pratt & Whitney (WGPW) was the only company to provide the requested technical specifications, operating data, and performance characteristics. Also taken into consideration is that WGPW is the Original Equipment Manufacturer of the engine.**

**Staff has concluded that it would be in the City's best interest to award the Bid No. 1 Engine to the apparent second low bid submitted by Wood Group Pratt & Whitney, Bloomfield, CT, in the amount of \$949,950.** This vendor is not licensed to collect taxes for the State of Iowa. The City of Ames will pay applicable sales tax directly to the State of Iowa.

### **Bid No. 2 Inlet Air System**

This bid includes the repair or replacement of the inlet sound attenuation enclosure, plus replacement of the evaporative cooler. The evaporative cooler is a system that cools the air entering the engine, making the air denser. The greater the density of the air, the greater the amount of air the engine can compress and convert into thrust, which results in greater engine output. This work is not part of the insurance claim. **The Engineer's estimate for this scope is \$670,000.** This work, while not directly related to the failure, has been planned in the CIP since 2011, and would have been needed even had the unit not failed.

**Two bids were received for this work category as reflected on the attached report. The selected Base and Options are summarized below.** Council should note that the selected Base items and Option items are highlighted in bold text on attached report.

BIDDER	BASE	SELECTED OPTIONS	OVERALL
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MMC Contractors National, Inc. Kansas City, MO	\$1,095,900	N/A	\$1,095,900
Universal Acoustic & Emission Technologies, Inc. Stoughton, WI	\$962,280.99	N/A	\$962,280.99

Electric Services staff, along with an engineer from Black & Veatch Corporation (B & V), performed a careful and extensive evaluation of the bids.

Based on the results of the bid prices and evaluation of the Inlet Air System bids, the low bid submitted by Universal Acoustic & Emission Technologies, Inc. in an amount of \$962,280.99 is acceptable. **However, each bidder offered deductions on their bid prices if both Bid 2 and 3 were awarded to them. To examine this benefit, Bid No. 2 Inlet Air System and Bid No. 3 Exhaust Air System were evaluated as a package following the Bid #3 evaluation.**

### **Bid No. 3 Exhaust System**

This bid includes the repair and/or replacement of the engine's exhaust plenum and silencer. This work is not part of the insurance claim. **The Engineer's estimate for this scope is \$210,000.** This work also had been planned in the CIP, and would have been needed even had the unit not failed.

**Two bids were received for this work category as demonstrated on the attached report.** The selected Base and Options are summarized below. Council should note that the selected Base items and Option items are highlighted in bold text on attached report.

BIDDER	BASE	SELECTED OPTIONS	OVERALL
Universal Acoustic & Emission Technologies, Inc. Stoughton, WI	\$536,148.24	N/A	\$536,148.24
<b>MMC Contractors National, Inc. Kansas City, MO</b>	<b>\$612,900.00</b>	<b>N/A</b>	<b>\$612,900.00</b>

Electric Services staff, along with an engineer from Black & Veatch Corporation (B & V), performed a careful and extensive evaluation of the bids. In reviewing the apparent low bid from Universal Acoustic & Emission Technologies, it was noted that the Universal Acoustic proposed equipment was 10 feet taller than the existing equipment. This led to questions and uncertainty regarding the ability for the existing support structure to handle the increased weight. Universal Acoustic offered no guarantee that additional support was not necessary. **To safely consider this option, a detailed structural analysis would need to be performed; a cost for this was not included. Results of the study will likely lead to additional support bracing, increasing the cost. MMC's bid requires no structural analysis.**

Staff has concluded that it would be in the City's best interest to award the Bid No. 3 Exhaust System to the apparent second low bid submitted by MMC Contractors National, Inc. of Kansas City, MO in the amount of \$612,900.

### **Bid #2 and Bid #3 Combined**

As mentioned above, Bid No. 2 Inlet Air System and Bid No. 3 Exhaust Air System were evaluated as a package. Each bidder offered deductions on their bid prices if both phases were awarded to them. Listed below is a summary of the bids evaluated as a package.

BIDDER	BID NO 2. INLET AIR SYSTEM	BID NO 3. EXHAUST AIR SYSTEM	DEDUCTION**	OVERALL
Universal Acoustic & Emission Technologies, Inc. Stoughton, WI	\$962,280.99	\$536,148.24*	(\$12,000)	\$1,486,429.23
<b>MMC Contractors National, Inc. Kansas City, MO</b>	<b>\$1,095,900</b>	<b>\$612,900</b>	<b>(\$180,310)</b>	<b>\$1,528,490</b>

\* Complete cost is uncertain due to existing load-carrying capability of the support structure of the equipment being proposed.

\*\* Deduction if Bid #2 and Bid #3 are awarded to the same company

**Based on the results of the "packaged" bid prices and evaluation of the Inlet and Exhaust bids, staff has concluded it would be in the City's best interest to award to the apparent second overall low bid submitted by MMC Contractors National, Inc., Kansas City, MO, in the amount of \$1,528,490 (inclusive of Iowa sales tax) for the combination of bids #2 and #3.**

### **Funding For the Project**

The FY 2014/15 Capital Improvements Plan includes \$1,500,000 for the GT1 Engine Replacement and Generator/Turbine Inspection and Overhaul and \$300,000 for the GT1 Evaporator Cooler. Costs associated with the failure of the engine, less a \$350,000 deductible are covered by insurance, estimated to be \$941,260. **Therefore, the estimated budget, including CIP and insurance payment is \$2,741,260. The expenses total \$2,819,750, leaving a difference of \$78,490.**

**This shortfall will be covered by savings in the Cooling Tower Repairs project that was included in the FY 2015/16 CIP. The bid came in for this project approximately \$1,000,000 less than budgeted.**

To date the budget for this CIP project has the following items encumbered:


\$1,500,000	FY 2014/15 CIP GT1 Inspection & Overhaul
\$ 300,000	FY 2014/15 Evaporator Cooler
\$ 941,260	Insurance Payment (estimated)
<b>\$2,741,260</b>	<b>Total Revenue Available For the Project</b>
\$153,310	Paid to WGPW for inspection of GT1 and removal and disassembly of the engine
\$188,000	Encumbered not-to-exceed amount for Engineering Services
<b>\$949,950*</b>	<b>Cost for Bid No. 1 Engine (pending Council approval of award for this agenda item)</b> * Amount does not include applicable Iowa sales tax. City of Ames will pay applicable sales tax directly to the State of Iowa.
<b>\$1,095,900</b>	<b>Cost for Bid No. 2 Inlet Air System (pending Council approval of award for this agenda item)</b>
<b>\$612,900</b>	<b>Cost for Bid No. 3 Exhaust System (pending Council approval of award for this agenda item)</b>
<b>(\$180,310)</b>	<b>Deduction for combining Bid #2 and Bid #3 to same company</b>
<b>\$2,819,750</b>	<b>Total Estimated Cost For The Project</b>

### **ALTERNATIVES:**

1. a. Award a contract to Wood Group Pratt & Whitney, Bloomfield, CT, for Bid No.1 Gas Generator in the amount of \$949,950 plus applicable sales taxes to be paid directly by the City of Ames to the State of Iowa.
- b. Award a contract to MMC Contractors National, Inc, Kansas City MO, for Bid No. 2 Inlet Air System in the amount of \$915,590 (inclusive of Iowa sales tax).
- c. Award a contract to MMC Contractors National, Inc, Kansas City MO, for the Bid No. 3 Exhaust System in the amount of \$612,900 (inclusive of Iowa sales tax).
2. Award contract in an alternative combination.
3. Reject all bids and delay return to service of GT1.

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

It is important that GT1 be repaired and available for service prior to next summer, due to the high price of capacity, which is escalating rapidly due to the retirement of fossil-fired generating units as a result of impending environmental regulations. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1 as stated above.

		ITB 2015-132 GT1 RETURN TO SERVICE PROJECT BID SUMMARY		
BID NO. 1 GAS GENERATOR				
BIDDER:	Turbo Services, Inc. Margate, FL	Wood Group Pratt & Whitney Bloomfield,CT	Worldwide Turbines Boca Raton, FL	MMC Contractors National, Inc. Kansas City, MO
BASE:				
ALTERNATIVE 1: REPAIR Repair existing GG1 as specified.		\$1,185,000.00	\$985,000.00	
Sales and/or Use taxes included in LS Cost		Not licensed	Not licensed	
ALTERNATIVE 2: REPLACE Replace GG1 with a reconditioned gas generator as specified.	\$900,000.00	\$985,000.00	\$985,000.00	\$1,649,400.00
Sales and/or Use taxes included in LS Cost	Not licensed	Not licensed	Not licensed	\$72,042.00
EVALUATED BASE: Excludes applicable sales taxes since three of the bidder's are not licensed to collect Iowa sales tax.	\$900,000.00	\$985,000.00	\$985,000.00	\$1,577,358.00
OPTIONS:				
Fuel manifold replacement cost	\$200,000.00	\$14,950.00	\$225,000.00	\$245,600.00
Cost for performing 2nd Performance Test for Guarantee Case #2	\$16,000.00	\$12,650.00	\$42,500.00	\$19,600.00
Deduct for Gas Generator core and auxiliaries for ALTERNATIVE 2	-\$165,000.00	-\$50,000.00	-\$15,000.00	-\$202,700.00
Deduct on Bid No. 1 ALTERNATIVE 1 if Bid No.'s 1, 2 and 3 are awarded as package to one bidder				
Deduct on Bid No. 1 ALTERNATIVE 2 if Bid No.'s 1, 2 and 3 are awarded as package to one bidder				-\$412,700.00
Deduct on Bid No. 1 ALTERNATIVE 1 if Bid No.'s 1 and 2 are awarded as package to one bidder and Bid No. 3 awarded to a separate bidder				
Deduct on Bid No. 1 ALTERNATIVE 2 if Bid No.'s 1 and 2 are awarded as package to one bidder and Bid No. 3 awarded to a separate bidder				(-\$180,310.00)
Deduct on Bid No. 1 ALTERNATIVE 1 if Bid No.'s 1 and 3 are awarded as package to one bidder and Bid No. 2 awarded to a separate bidder				
Deduct on Bid No. 1 ALTERNATIVE 2 if Bid No.'s 1 and 3 are awarded as package to one bidder and Bid No. 2 awarded to a separate bidder				(-\$180,310.00)
OVERALL PRICE FOR BID 1: GAS GENERATOR (includes Evaluated Base plus selected Options)	\$935,000.00	\$949,950.00	\$1,195,000.00	\$1,207,558.00
BID NO. 2 INLET AIR SYSTEM				
BIDDER:	MMC Contractors National, Inc. Kansas City, MO	Universal Acoustic & Emission Technologies, Inc. Stoughton, WI		
BASE:				
Refurbish and/or replace <u>entire</u> inlet air system as specified.	\$1,095,900.00	\$962,280.99		
Sales and/or Use taxes included in LS Cost	\$35,734.00	\$62,079.99		
OPTIONS:				
Deduct on Bid No. 2 if Bid No.'s 1, 2 and 3 are awarded as package to one bidder	(-\$412,700.00)			
Deduct on Bid No. 2 if Bid No.'s 1 and 2 are awarded as package to one bidder and Bid No. 3 awarded to a separate bidder	(-\$180,310.00)			
Deduct on Bid No. 2 if Bid No.'s 2 and 3 are awarded as package to one bidder and Bid No. 1 awarded to a separate bidder	-\$180,310.00	-\$6,000.00		
OVERALL PRICE FOR BID 2: INLET AIR SYSTEM (includes Base plus selected Option)	\$915,590.00	\$956,280.99		
BID NO. 3 EXHAUST SYSTEM				
BIDDER:	MMC Contractors National, Inc. Kansas City, MO	Universal Acoustic & Emission Technologies, Inc. Stoughton, WI		
BASE:				
Replace entire existing exhaust system as specified.	\$612,900.00	\$536,148.24		
Sales and/or Use taxes included in LS Cost	\$17,897.00	\$34,302.24		
OPTIONS:				
Deduct on Bid No. 3 if Bid No.'s 1, 2 and 3 are awarded as package to one bidder				
Deduct on Bid No. 3 if Bid No.'s 1 and 3 are awarded as package to one bidder and Bid No. 2 awarded to a separate bidder				
Deduct on Bid No. 3 if Bid No.'s 2 and 3 are awarded as package to one bidder and Bid No. 1 awarded to a separate bidder		-\$6,000.00		
OVERALL PRICE FOR BID 3: EXHAUST AIR SYSTEM (includes Base plus selected Option)	\$612,900.00	\$530,148.24		
OVERALL PACKAGE PRICE FOR BID 2 INLET AND BID 3 EXHAUST (includes package discounts)	\$1,528,490.00	\$1,486,429.23		