



# City of Grand Island

Tuesday, May 21, 2002

Council Session

## Item G19

### **#2002-139 - Approval to Proceed with Engineering Services for Corrosion Control System Implementation - CH2M Hill**

*The Environmental Protection Agency (EPA) copper rule has a long history.*

*1991 EPA Lead and Copper Rule promulgated.*

*1992 City water tested at the customer's tap in accordance with EPA protocol.*

*1992 Test results show lead levels well within compliance. Copper is above action level.*

*1994 CH2M Hill is selected from RFP responses to proceed with EPA required Optimum Corrosion Control Treatment (OCCT) Study.*

*1994 Nebraska Health and Human Services (NHSS) commissioned studies of copper health affects by the Center for Disease Control (CDC).*

*1995 CDC Study in Delaware concluded "those people drinking the highest level of copper identified in Delaware are not suffering adverse acute effect from this exposure;" and in Nebraska "...no relationship between copper concentration in drinking water and gastrointestinal illness."*

*1995 Based on CDC study results, the OCCT study by CH2M Hill is put on hold.*

*1995 – 1997 A series of meetings questioning the basic science of EPA's action level involving*

*Nebraska Health and Human Services (NHHS), League of Nebraska Municipalities, cities, Senator Kerrey, Senator Hagel, Representative Barrett, and the EPA*

*1998 EPA directs NHHS to prosecute compliance with EPA Lead & Copper Rule as published in 1991.*

*March 1998 NHHS issues Administrative Order (AO) to over 60 Nebraska water systems.*

*1998 Congressmen are successful in procuring federal legislation to commission a study of copper by the National Academy of Science (NAS).*

*Dec. 1998 HHS issues a two-year extension to the Administrative Order, citing the NAS Study.*

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*1999 Grand Island begins publishing quarterly public notices of violation of the Copper Rule in accordance with the AO.*

*2000 NAS study concludes that “Additional information on total copper doses received from drinking water is needed before systemic chronic toxicity can be evaluated...” but “the committee recommends that the MCLG (Maximum Contaminant Level Goal) for copper not be increased at this time.”*

*2000 Nebraska Attorney General challenges EPA authority to set regulatory standards.*

*2001 Federal appeals court upholds dismissal of the lawsuit by Nebraska.*

*2001 NHHS ordered by EPA to resume pursuit of AOs issued in 1998.*

*2001 NHHS directs submittal of OCCT study by December 31, 2001. CH2M Hill is authorized to proceed with completion of the study originally begun in 1994. That study is submitted to NHHS prior to deadline.*

*2002 April, NHHS formally approves Grand Island’s OCCT Study. NHSS order requires installation of OCCT systems by April of 2003.*

*There are currently 82 water systems in Nebraska with copper levels above the EPA action level.*

*In accordance with the RFP from which CH2M Hill was selected from the Water System Engineering work, that firm has provided a price of \$63,288 for the engineering services for this project. Utilities Department Staff has reviewed the engineer’s proposal.*

*The CH2M Hill proposal includes engineering services for project management, engineering, design, plan and specification preparation, development of a pilot study plan, and technical assistance during the implementation of the OCCT systems.*

*It is the recommendation of the Utilities Department that CH2M Hill be authorized to proceed with the engineering required to implement the required OCCT program. The attached Proposed Scope of Services report from CH2M Hill defines the cost of engineering not to exceed \$63,288 from Enterprise Fund 525. There are sufficient funds available.*

*See attached RESOLUTION.*

**Staff Contact: Gary R. Mader**

# **Proposed Scope of Services and Fee Estimate for the City of Grand Island Corrosion Control Program.**

## **Project Understanding**

In response to the Nebraska Health and Human Services (NHHS) Department's Amended Copper Administrative Order dated December 31, 1998, a report entitled *City of Grand Island Corrosion Control Study* was prepared on behalf of the City of Grand Island (the CITY) by CH2M HILL (the CONSULTANT). The purpose of the study was to identify and evaluate corrosion control alternatives and recommend the optimal corrosion control strategy for implementation by the CITY. The analyses presented were based on documented analogous treatment with other systems of similar size, water chemistry, and distribution system configuration. Recommendations in the report favored the use of SeaQuest for corrosion control, but also left open the possibility that phosphoric acid be used as a corrosion control option. The report was submitted to NHHS in December, 2001 with report recommendations approved by NHHS in April 2002.

The Scope of Services presented herein outlines proposed activities associated with the preparation of detailed plans and specifications for the corrosion control treatment system, as well as to provide assistance in conducting, and analyzing data collected during the Corrosion Control Pilot Study. Nebraska law requires NHHS approval of plans and specifications, prepared by a registered Professional Engineer in Nebraska, prior to implementation. Additionally, ongoing technical assistance will be necessary to ensure that the Pilot Study is conducted consistently with *City of Grand Island Corrosion Control Study*, as approved by the NHHS. Data collected during the pilot study must be carefully analyzed to objectively determine the success of SeaQuest in reducing copper concentrations, as well as monitoring changes to other water quality parameters, such as pH and manganese.

The following specific tasks shall be performed by the ENGINEER.

### **Task 1 – Project Management**

- 1.1 CONSULTANT shall provide routine project management services including, but not limited to, budget and schedule tracking, project team coordination, progress updates for the CITY, and preparation of invoices.

### **Task 2 – Prepare Plans and Specifications**

- 2.1 CONSULTANT shall prepare contract documents consisting of plans and specifications for the implementation of the corrosion control system including, but not limited to, proposed metering pumps, chemical storage facilities, and other miscellaneous mechanical modifications to the distribution system that will be required prior to beginning the Pilot Study. These final plans and specifications shall be consistent with the corrosion control methodology approved by NHHS.
- 2.2 CONSULTANT shall submit five (5) copies of DRAFT plans and specifications at the 90 percent Design Stage to the CITY for review. CONSULTANT shall incorporate CITY comments into the final contract documents.

- 2.3 CONSULTANT shall submit twelve (12) copies of FINAL plans and specifications to the CITY.

### **Task 3 – Corrosion Control Pilot Study Implementation Plan**

- 3.1 CONSULTANT shall develop specific operational and sampling methodologies for the pilot study, in concert with the chemical supplier (Aqua Smart, Inc.), to include:
- 3.1.1 Develop operational procedures for running the pilot study, including metering pump settings, logistical issues, etc.
  - 3.1.2 Identify sampling locations throughout the distribution system that will best demonstrate the effectiveness of the pilot study.
  - 3.1.3 Develop sampling protocol outlining a sample schedule, number of samples to be collected, and a list of parameters for laboratory analysis
- 3.2 CONSULTANT shall summarize Corrosion Control Program Operational Methodology and Sampling Protocol in a brief Technical Memorandum (TM). It is assumed that fifteen (15) copies will be provided to the CITY.

### **Task 4 – Technical Assistance During Pilot Study**

- 4.1 CONSULTANT shall conduct a field visit to all chemical injection sites to be included in the pilot study to verify all instrumentation and connections have been installed as recommended. CONSULTANT will accompany CITY personnel during initial sampling to insure proper protocols are followed. It is assumed that the site visit shall be conducted in one business day with one CONSULTANT representative on site. CITY to provide sampling results to CONSULTANT as collected.
- 4.2 CONSULTANT will be available for frequent communications with CITY personnel regarding interim results and procedural questions.
- 4.3 CONSULTANT shall review intermediate data collected during the pilot study and coordinate with Aqua Smart, Inc. to 1) ensure that the chemical additions are being added in sufficient quantities to control corrosion, or 2) prevent any unforeseen water quality problems from developing that are a direct result of the pilot study. It is assumed that the CONSULTANT shall spend a maximum of 2 labor hours per month during the pilot testing reviewing intermediate results.
- 4.4 CONSULTANT shall review final data collected during the pilot study and make a final recommendation for future corrosion control, to include either:
- a) Continuation of the pilot study until more conclusive data is collected, or
  - b) Future implementation of a corrosion control program based on the positive results of the pilot study, or
  - c) Recommendations for an alternative corrosion control treatment method should the pilot study results be inconclusive.

- 4.5 At the conclusion of the pilot study, CONSULTANT shall prepare and submit five (5) copies of a DRAFT report on the pilot study results to the CITY for review. CONSULTANT shall incorporate CITY comments in FINAL report.
- 4.6 CONSULTANT shall submit fifteen (15) copies of FINAL report to CITY.
- 4.7 CONSULTANT shall prepare and deliver a presentation to City Council summarizing results and recommendations of the corrosion control pilot testing program.

## Fee Estimate

Task Description	Project Manager	Senior Project Engineer	Project Engineer	Junior Project Engineer	Senior Consultant (Process)	Senior Technician	Technician	Clerical	Accounting/Office	Labor	Expenses	Total
	\$139	\$109	\$ 89	\$ 72	\$155	\$ 89	\$ 72	\$ 61	\$ 61			
<b>Task 1 - Project Management</b>												
1.1 Routine project management services		48							12	\$5,964	\$351	\$6,315
<b>Task 1 - Subtotal</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>\$5,964</b>	<b>\$351</b>	<b>\$6,315</b>
<b>Task 2 - Plans and Specifications</b>												
2.1 Prepare plans and specifications	4	40	80		4	12	80	32		\$21,436	\$1,724	\$23,160
2.2 Submit DRAFT plans and specifications to City					8					\$1,240	\$47	\$1,287
2.3 Submit FINAL plans and specifications to City		8	16	4		8	20	8		\$5,224	\$624	\$5,848
<b>Task 2 - Subtotal</b>	<b>4</b>	<b>48</b>	<b>96</b>	<b>4</b>	<b>12</b>	<b>20</b>	<b>100</b>	<b>40</b>	<b>0</b>	<b>\$27,900</b>	<b>\$2,395</b>	<b>\$30,295</b>
<b>Task 3 - Corrosion Control Implementation Plan</b>												
3.1 Develop operational and sampling methodologies												
3.1.1 Developing operational procedures		8			3					\$1,337	\$64	\$1,401
3.1.2 Develop sampling locations		8			3					\$1,337	\$64	\$1,401
3.1.3 Develop list of parameters to be sampled + sampling protocols		8			3					\$1,337	\$64	\$1,401
3.2 Submit operational and sampling methodology memorandum	2	20			3					\$2,923	\$146	\$3,069
<b>Task 3 - Subtotal</b>	<b>2</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>\$6,934</b>	<b>\$339</b>	<b>\$7,273</b>
<b>Task 4 - Technical Assistance During Pilot Study</b>												
4.1 Field visit to chemical injection facilities + sampling locations		12								\$1,308	\$1,070	\$2,378
4.2 Interim communications		20								\$2,180	\$117	\$2,297
4.3 Review intermediate data		24			4					\$3,236	\$164	\$3,400
4.4 Review of final data		12								\$1,308	\$70	\$1,378
4.5 Submit DRAFT report to City	2	32			2	6				\$4,610	\$346	\$4,956
4.6 Submit FINAL report to City		8				2				\$1,050	\$159	\$1,209
4.7 Presentation to City Council	8	12								\$2,420	\$1,367	\$3,787
<b>Task 4 - Subtotal</b>	<b>10</b>	<b>120</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>\$16,112</b>	<b>\$3,292</b>	<b>\$19,404</b>
<b>Total for Tasks 1 and 2</b>	<b>4</b>	<b>96</b>	<b>96</b>	<b>4</b>	<b>12</b>	<b>20</b>	<b>100</b>	<b>40</b>	<b>12</b>	<b>\$33,864</b>	<b>\$2,746</b>	<b>\$36,610</b>
<b>Total for Tasks 1, 2 and 3</b>	<b>6</b>	<b>140</b>	<b>96</b>	<b>4</b>	<b>24</b>	<b>20</b>	<b>100</b>	<b>40</b>	<b>12</b>	<b>\$40,798</b>	<b>\$3,086</b>	<b>\$43,884</b>
<b>Total for Tasks 1, 2, and 4</b>	<b>14</b>	<b>216</b>	<b>96</b>	<b>4</b>	<b>18</b>	<b>28</b>	<b>100</b>	<b>40</b>	<b>12</b>	<b>\$49,976</b>	<b>\$6,039</b>	<b>\$56,015</b>
<b>Total for Tasks 1, 2, 3 and 4</b>	<b>16</b>	<b>260</b>	<b>96</b>	<b>4</b>	<b>30</b>	<b>28</b>	<b>100</b>	<b>40</b>	<b>12</b>	<b>\$56,910</b>	<b>\$6,378</b>	<b>\$63,288</b>

RESOLUTION 2002-139

WHEREAS, in 1991, the Environmental Protection Agency promulgated rules pertaining to the acceptable level of lead and copper in the public drinking water; and

WHEREAS, the copper levels tested at customer taps in various areas of the City have levels higher than the acceptable rate; and

WHEREAS, in April of 2002, the Nebraska Health and Human Services ordered the City of Grand Island to install Optimum Corrosion Control Treatment (OCCT) systems by April of 2003 to comply with such regulations; and

WHEREAS, on April 10, 2000, by Resolution 2000-110, the City Council for the City of Grand Island awarded the proposal submitted by CH2M Hill of Englewood, Colorado for municipal water system engineering services for the Utilities Department; and

WHEREAS, due to CH2M Hill's experience and history working with the City's water system, it is recommended that CH2M Hill be authorized to proceed with the engineering required to develop specifications and provide engineering services for the installation of the OCCT systems.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF GRAND ISLAND, NEBRASKA, that CH2M Hill is hereby authorized to proceed with the engineering required to develop specifications and provide engineering services for the installation of the OCCT systems in an amount not to exceed \$63,288.

BE IT FURTHER RESOLVED, that an agreement between the City and CH2M Hill be entered into for such project, and the Mayor is hereby authorized and directed to execute such agreement on behalf of the City of Grand Island.

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Adopted by the City Council of the City of Grand Island, Nebraska on May 21, 2002.

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RaNae Edwards, City Clerk

Approved as to Form	?
May 16, 2002	? City Attorney