



City of Grand Island

Tuesday, May 07, 2002

Council Session

Item G10

#2002-125 - Approving Engineering Services for Well Field Collection Basin Project

The City of Grand Island's Platte River wellfield typically contributes approximately 70-80 percent of the total water supply to the distribution system, and as such, is a critical link in the City's overall water supply. The existing 250,000 gallon collection basin at the well field provides wet well storage for low pressure pumps at the well field pump station which pump water to three storage tanks located within the City limits. Currently, there is no redundancy within the collection basin to allow continued operation of the well field pump station should the collection basin need to be out of service for any reason, effectively eliminating the well field supply during a down period. As additional high pressure wells within the City limits are abandoned due to water quality concerns, increased emphasis will be placed on the well field supply and the opportunity to construct improvements at the collection basin will be further limited.

In accordance with the RFP from which CH2M Hill was selected for the Water System Engineering work, that firm has provided a price of \$74,414 for the engineering services for this project. Utilities Department Staff has reviewed the engineer's proposal.

CH2M Hill proposes to design improvements to the well field collection basin which will provide partial redundancy to allow continued well field supply should a portion of the basin need to be taken out of service, and to allow future expansion of this critical facility.

It is the recommendation of the Utilities Department that CH2M Hill be authorized to proceed with the engineering required to develop specifications and provide engineering services for modifications to the Well Field Collection Basin.

The attached Proposed Scope of Services report from CH2M Hill defines the cost of engineering not to exceed \$74,414. There are sufficient funds available in Water Fund 525. See attached RESOLUTION.

Staff Contact: Gary R. Mader; Dale Shotkoski

Proposed Scope of Services and Fee Estimate for the City of Grand Island Wellfield Collection Basin Project.

TO: City of Grand Island

FROM: CH2M HILL

DATE: May 3, 2002

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Inserted: April 29, 2002

Project Understanding

The City of Grand Island's Platte River wellfield typically contributes approximately 70-80 percent of the total water supply to the distribution system, and as such, is a critical link in the City's overall water supply. The existing 250,000 gallon collection basin at the wellfield provides wet well storage for low pressure pumps at the wellfield pump station which pump water to three storage tanks located within the City limits. Currently, there is no redundancy within the collection basin to allow continued operation of the wellfield pump station should the collection basin need to be out of service for any reason, effectively eliminating the wellfield supply during a down period. As additional high pressure wells within the City limits are abandoned due to water quality concerns, increased emphasis will be placed on the wellfield supply and the opportunity to construct improvements at the collection basin will be further limited.

The following scope of services outlines a strategy for the design of improvements to the wellfield collection basin which will provide partial redundancy to allow continued wellfield supply should a portion of the basin need to be taken out of service. The scope of services and fee estimate that are provided as part of this memorandum outline the following: 1) preparation of engineering contract documents, consisting of drawings and specifications, to allow the City to bid and construct the wellfield collection basin improvements; and, 2) additional engineering services including services during bidding and construction. It is anticipated that drawings and specifications will be submitted at the 50% and 90% design phases for City review and comment prior to issuing final drawings and specifications.

Proposed Scope of Services

CH2M HILL, Inc. (CONSULTANT) shall provide design services to the City of Grand Island (CITY) related to the preparation of contract documents for construction of improvement to the Platte River wellfield collection basin.

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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: Design Services

- 2.1 CONSULTANT shall review and evaluate data that pertain to the Platte River wellfield collection basin, such as structural, site, piping, pumping station operations and other data as required to accomplish the design. This will include a review of existing design drawings, pumping station operations and other pertinent data. It is assumed that this information will be provided by CITY staff.
- 2.2 CONSULTANT shall identify, if necessary, additional data required for the structural and operational evaluation of the wellfield collection basin. It is assumed that additional data will be obtained by CITY staff.
- 2.3 CONSULTANT shall evaluate available storage capacity within basin compartments in relation to pump operations to assess whether adequate storage is available. The CONSULTANT shall summarize results in a brief technical memorandum to the CITY.
- 2.4 CONSULTANT shall review and evaluate wellfield collection basin supply line piping plans to assess the need for piping improvements with the construction of a wall internal to the existing collection basin.
- 2.5 CONSULTANT shall prepare contract documents consisting of drawings and specifications to allow the CITY to bid and construct improvements to the wellfield collection basin. The previous preliminary layout provided to the CITY will serve as the basis for the design. Engineering services will include:
 - 2.5.1 Development of a drawing title sheet and structural and site work legends.
 - 2.5.2 Development of structural plans, sections, and details for the design of a wall internal to the existing wellfield collection basin.
 - 2.5.3 Development of structural plans, sections, and details for the installation of an access hatch and vent.
 - 2.5.4 Development of plans, sections, and details for collection basin supply line piping improvements.
 - 2.5.5 Preparation of an engineering cost estimate.
 - 2.5.6 Development of appropriate specifications for items listed under Tasks 2.5.1 through 2.5.5.
 - 2.5.7 Quality Assurance/Quality Control through Senior Review of all submittals.
- 2.6 Deliverables:
 - 2.6.1 CITY will provide the information referred to under Task 2.1.
 - 2.6.2 CONSULTANT shall prepare, if necessary, a list of additional information requirements to be provided by the CITY.
 - 2.6.3 CONSULTANT shall prepare a technical memorandum summarizing the hydraulic evaluation of the collection basin in relation to pumping station pump operations.
 - 2.6.4 CONSULTANT shall submit five copies of the design package at the 50-percent and 90-percent design stage to the CITY to include those items listed under Task 2.5.

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- 2.6.5 CONSULTANT shall submit ten copies of the final design package to the CITY to include those items listed under Task 2.5. The CITY will distribute copies to prospective bidders.

Optional Services

Task 3: Services during Bidding and Construction

- 3.1 CONSULTANT shall provide up to two man-days of assistance during the bidding phase to answer questions from bidders and prepare an addendum, if necessary.
- 3.2 CONSULTANT shall attend a pre-construction meeting in Grand Island to discuss the approach with the construction contractor and answer any initial questions.
- 3.3 CONSULTANT shall provide up to two man-weeks assistance to review submittals and answer questions during the construction period. It is assumed that no as-built drawings will be prepared as part of this scope of services.

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Fee Estimate

Task Description	Project Manager	Design Manager	Senior Project Engineer	Structural Engineer	Senior Consultant	Senior Technician	Technician	Clerical	Accounting/Office	Labor	Expenses	Total
	\$ 139.00	\$ 109.00	\$ 109.00	\$ 109.00	\$ 155.00	\$ 89.00	\$ 72.00	\$ 61.00	\$ 61.00			
Task 1 - Project Management												
1.1 Project Management	8	40						12	20	\$7,424	\$515	\$7,939
Task 1 - Subtotal	8	40	0	0	0	0	0	12	20	\$7,424	\$515	\$7,939
Task 2 - Design Services												
2.1 Data Review		4		8					4	\$1,552	\$323	\$1,875
2.2 Identification of Additional Data Requirements				2						\$218	\$13	\$231
2.3 Hydraulic Evaluation			40							\$4,360	\$257	\$4,617
2.4 Preparation of contract documents										\$0	\$0	\$0
2.4.1 Title Sheet, Structural Legend, and Site Work Legend				24				20		\$4,056	\$283	\$4,339
2.4.2 Structural Plans, Sections, and Details for Wall Construction				24				20		\$4,056	\$283	\$4,339
2.4.3 Structural Plans, Sections and Details for Access and Vent				24				20		\$4,056	\$283	\$4,339
2.4.4 Pipeline Plan, Profile, and Details			20	24		20				\$6,576	\$412	\$6,988
2.4.5 Engineering Cost Estimate		8			16					\$3,352	\$154	\$3,506
2.4.6 Quality Assurance/Quality Control					8					\$1,240	\$51	\$1,291
2.5 Plans and Specifications			8	24			40	80		\$11,248	\$2,628	\$13,876
Task 2 - Subtotal	0	12	68	130	24	20	100	80	4	\$40,714	\$4,689	\$45,403
Optional Services												
Task 3 - Services During Bidding and Construction												
3.1 Bidding services		8		16						\$2,616	\$154	\$2,770
3.2 Attend construction meeting		16		16						\$3,488	\$1,526	\$5,014
3.3 SDC		12		80				20		\$11,248	\$2,041	\$13,289
Task 3 - Subtotal	0	36	0	112	0	0	0	20	0	\$17,352	\$3,721	\$21,073
Total for Tasks 1 and 2	8	52	68	130	24	20	100	92	24	\$48,138	\$5,203	\$53,341
Total for Tasks 1, 2 and 3	8	88	68	242	24	20	100	112	24	\$65,490	\$8,924	\$74,414

RESOLUTION 2002-125

WHEREAS, the City of Grand Island Platte River wellfield contributes 70-80 percent of the total water supply to the distribution system, which is a critical link in the City's overall water supply; and

WHEREAS, the existing 250,000 gallon collection basin at the well field provides wet well storage for low pressure pumps at the well field pump station which pumps water to three storage tanks located within the city limits; and

WHEREAS, continued operation of the well field pump station would be jeopardized if the collection basin would be out of service for any reason; and

WHEREAS, it is necessary to complete water system engineering work to provide assurance of continued operation of the well field pump station if the collection basin is inoperable for any reason; 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 modifications to the Well Field Collection Basin.

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 modifications to the Well Field Collection Basin in the not to exceed amount of \$74,414.

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 7, 2002.

RaNae Edwards, City Clerk

Approved as to Form	?
May 2, 2002	? City Attorney