Memorandum

To: Prog

Programs, Projects and Operations Subcommittee

From:

Paul Woodward, Water Resources Engineer

Date:

June 1, 2007

Re:

Additional Professional Services for Papio Reservoir 1 and 3C Preliminary

Design/Study

In December 2005, the NRD Board approved a professional services contract with HDR Engineering, Inc. (HDR) to provide a preliminary study of Papio Dam Sites 1 and 3C for a total cost of \$621,907. Since that time, an amendment in the amount of \$98,687.00 was added to the contract in March 2007 to further evaluate the regional reservoir alternative, bringing the total contract cost to \$720,594. Of this total, \$614,042.48 has been billed as of April 28, 2007, leaving \$74,432.77 remaining under the contract.

Also in March, the Subcommittee and Board were updated on several of the originally scoped tasks which have required additional study and additional meetings. These out-of-scope services were documented by HDR in a memo dated March 1, 2007 which is attached along with the original memo provide by staff to the PPO Subcommittee in which the information was reviewed, but no action was recommended.

Since that time, HDR and District staff have reviewed these out-of-scope services, including additional steering committee and public meetings, more detailed hydrologic analysis, one additional flood control alternative, and more detailed land value assessments. These added services are considered justified as they were approved by District management prior to proceeding and were determined necessary to facilitate the most comprehensive and complete study possible. The costs of these additional services is estimated at \$85,079.

In summary, HDR is requesting that these additional services in the amount of \$85,079 be approved as outlined in the enclosed Amendment No. 2, increasing the total maximum contact fee to \$805,673.

Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute the proposed Amendment No. 2 to the professional services contract with HDR Engineering, Inc. for the Papio Reservoir Sites 1 and 3C Preliminary Design/Study, increasing the maximum contract fee to \$805,673, subject to changes deemed necessary by the General Manager and approved as to form by District legal counsel.

June 7, 2007

Sent electronically on June 7, 2007

John Winkler General Manager Papio-Missouri River Natural Resources District 8901 S. 154th Street Omaha, NE 68138-3621

RE:

Preliminary Evaluations and Design of Reservoir Sites 1 and 3C

HDR Job Number: 35008 Contract Amendment No. 2

Dear John:

Enclosed is Amendment No. 2 that outlines the additional professional services performed in connection with the evaluation of Reservoir Sites 1 and 3C. This amendment is for the additional public involvement associated with the project, the more detailed hydrologic and hydraulic analyses requested, the analysis of the conservation measures alternative, and the additional economic analysis associated with parcel evaluations. The amended agreement is not to exceed \$805,673 which is the sum of \$621,907 from the original agreement dated January 31, 2006, plus an additional \$98,687 from Amendment No. 1, plus an additional \$85,079 from Amendment No. 2.

Please sign and date both copies of the Agreement. Retain one copy for your records and return the other signed copy for our files. If you have any questions, please contact me at 926-7110 at your convenience.

Very truly yours,

HDR ENGINEERING, INC.

John J. Engel, P.E. Project Manager

Enclosure

HDR Engineering, Inc.

8404 Indian Hills Driva Omaha, NE 68114-4098 Phone: (402) 399-1000 Fax: (402) 399-1238 www.hdrinc.com

AMENDMENT NO. 2 AMENDMENT TO AGREEMENT FOR ENGINEERING SERVICES

WHEREAS:

HDR ENGINEERING, INC. ("HDR") entered into an Agreement on January 31, 2006 to perform engineering services to prepare preliminary evaluations and preliminary design for Dam Sites 1 and 3C ("Project");

Papio-Missouri River Natural Resources District ("P-MRNRD") desires to amend this Agreement in order for HDR to perform services beyond those previously contemplated;

HDR is willing to amend the agreement and perform the additional engineering services.

NOW, THEREFORE, HDR and P-MRNRD do hereby agree:

The Agreement and the terms and conditions therein shall remain unchanged other than those sections and exhibits listed below;

Exhibit A, "Engineer's Services" shall be amended to include the scope of services presented in Exhibit A1.

Exhibit C, "Payments to Engineer for Services and Reimbursable Expenses" shall be amended to include the fee estimate presented in Exhibit C1.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment as of the day and year written below:

HDR ENGINEERING, INC. ("HDR")	PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT ("P-MRNRD")
Ву:	Ву:
lts:	lts:
Date:	Date:

Page 1 of 1 Page (Amendment No. 2)

EXHIBIT A1

Papio-Missouri River Natural Resources District Additional Services Sites 1 and 3C in Washington County, NE Amendment No. 2



The purpose of this amendment is to address additional services performed in the Study of Reservoir Sites 1 and 3C (Study). Additional services beyond the original contract are identified and referenced to the original contract scope items dated January 31, 2006. Exhibit C1 documents the costs associated with these additional services.

TASK 200 PUBLIC INVOLVEMENT

Due to the level of public interest in the Study, there have been substantial additions to the public involvement scope task. These additional efforts have been necessary and beneficial in reaching a broad range of stakeholders and providing information to the public on the purpose and need for the Study, the methodologies and processes being employed, and to provide a means of two-way communication. Specific additions include:

<u>Subtask 210.2 Communication and Meetings</u> - A total of 6 meetings were originally planned with the Project Steering Committee. A total of 11 meetings have been conducted through June 1, 2007.

Subtask 230.5 Final Public Meeting (Task Added)

An additional public meeting has been added to the project. The first public meeting was an introduction to the project and a means to identify potential impacts that needed to be considered in the study. The second public meeting presented the results of the analysis of project need and alternatives. The third and final public meeting, scheduled for June 21, 2007, will present the findings of the impact analysis of Sites 1 and 3C.

This final public meeting will include the preparation of presentation materials along with boards. It is assumed that the preparation, materials, labor, etc., for the final public meeting will be equivalent to the December 5, 2006 meeting.

Subtask 230.3.1 Education and Informational Materials

A DVD video compilation of project alternatives will be removed from the project scope and fee.

TASK 400 HYDROLOGY/HYDRAULICS ANALYSES

Refinements to the hydrologic and hydraulic models were necessary to better reflect current conditions and accurately determine the existing flood control needs, as well as accurately predict the benefits of the flood control alternatives.

For example, the converted FEMA regulatory hydraulic models originally intended for use in the study do not reflect existing topographic conditions. Better topographic data was available which enabled a more realistic prediction of water surface elevations in addition to serving as the basis for the flood damage assessment.

<u>Task 420 Hydrologic Model Development</u> - The hydrologic model resolution was increased for flexibility during analysis of flood control alternatives, to allow analysis of regional detention structures alternatives, and for consistency of results with the upcoming hydrologic modeling to be completed during the flood hazard remapping of the Big Papillion Creek. The following activities were beyond those identified in the original scope of work:

- Modified the HEC-HMS model prepared for the Stage I Papillion Creek Watershed study to refine the hydrologic parameters for the Big Papillion Creek Watershed in Washington and Douglas Counties to approximately 1 square mile basin areas down to the confluence with Little Papillion Creek (Stage I model typically had 3 to 5 square mile basins). The model resolution was increased for flexibility during analysis of flood control alternatives, to facilitate analysis of regional detention facilities, and for consistency with the upcoming hydrologic modeling to be completed during the remapping of the Big Papillion Creek. Hydrologic parameters were verified by comparing timing, runoff volume, and discharge with the calibrated model prepared for the Stage I hydrologic modeling.
- Multiple storm centerings (approximately 10) according to USACE and FEMA
 methodology were used to accurately determine peak discharges along Big Papillion
 Creek from Nebraska Highway 36 to the confluence with Little Papillion Creek for
 "with" and "without" project conditions for the 10-, 25-, 50-, and 100-year storm
 events.

<u>Task 440 Hydraulic Model Development -</u> The existing regulatory hydraulic model consisted of various parts of 4 different HEC-2 models, all containing outdated topography. A new HEC-RAS model using current topography was developed for increased accuracy of flood control alternative analyses and to ensure consistency of results with the upcoming hydraulic modeling to be completed during the flood hazard remapping of the Big Papillion Creek. The following activities were beyond those identified in the original scope of work:

- Developed a new HEC-RAS model for the reach of Big Papillion Creek from Nebraska Highway 36 to the confluence with Little Papillion Creek. Utilized 2004/2005 LiDAR topographic and aerial photographic data for defining the channel geometry, floodplain parameters, and associated hydraulic parameters including Manning's 'n' values, obstructions, and ineffective flow areas.
- Performed field reconnaissance to verify hydraulic model parameters such as ineffective flow boundaries, Mannings' roughness coefficients, and obstructions.
- Performed reconnaissance level field measurements of approximately 30 bridges along Big Papillion Creek. Used field measurements along with existing regulatory Flood Insurance Study hydraulic model data, CLOMR and LOMR data to incorporate bridge information and associated hydraulic parameters into HEC-RAS model.

TASK 700 ENVIRONMENTAL EVALUATION

<u>Task 760 Flood Control Alternatives Analyses</u> - During the flood control alternative analyses an additional alternative of full implementation of conservation measures was requested by the Steering Committee and included in the analysis. The impact of conservation measures was also a question raised often during the public meetings. This alternative was in addition to the four listed below that were included in the original scope of work:

- Multiple small detention cells
- Flood conveyance improvements
- Floodplain acquisition evaluated regulatory, existing and future land use conditions.
- Reservoir Sites 1 and 3C scenarios

TASK 800 PROJECT ECONOMICS

<u>Subtask 820.1 Flood Control Benefits</u> - The following economic activities were beyond those identified in the scope of work:

- Floodplain parcel evaluation a parcel by parcel evaluation was used in the flood control benefit analysis as assessed values were developed rather than a per acre metric as was originally defined in the scope. This was necessary to more accurately depict alternative costs and flood control benefits.
- Land value assessment The costs associated with each alternative were evaluated based on an evaluation of each individual parcel assessment that may be impacted. In addition, additional research and analysis on recent comparable sales data was conducted to obtain a better land valuation estimate over the assessor's records for use in evaluating alternative costs.

EXHIBIT C1

Article 2 of the Agreement is amended and supplemented to include the following agreement of the parties:

C2.01 Compensation for Basic Services – Direct Labor Costs Times a Factor Method of Payment.

- A.1. An amount equal to Engineer's Direct Labor Costs times a factor of 3.15 for the services of Engineer's employees engaged on the Project, plus Reimbursable Expenses, provided however, and notwithstanding anything to the contrary contained in this Agreement, the total amount of money due to ENGINEER for such services and for Reimbursable Expenses and Engineer's Consultant's charges shall not exceed the amount of \$805,673, which is computed as the sum of (\$621,907) from the original Agreement, plus an additional (\$98,687) from Amendment No. 1, plus an additional (\$85,079) from this Amendment #2, unless an additional payment for the services, expenses or charges being furnished, expended, or incurred, the amount of \$805,673, which is computed as the sum of (\$621,907) from the original Agreement, plus an additional (\$98,687) from Amendment No. 1, plus an additional (\$85,079) from this Amendment No. 2 being intended by the parties as the maximum amount of money be due to the Engineer under this Agreement.
- A.2. The fee schedule is attached to this Exhibit C1 as Attachment A.

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Memorandum

To: Programs, Projects and Operations Subcommittee

From: Paul Woodward, Water Resources Engineer

Date: March 2, 2007

Re: Additional Professional Services for Papio Reservoir 1 and 3C Preliminary

Design/Study

In December 2005, the NRD Board approved a professional services contract with HDR Engineering, Inc. (HDR) to provide a preliminary study of Papio Dam Sites 1 and 3C for a total cost of \$621,907. Since that time, HDR has completed a majority of the services it was tasked to perform. A total of \$543,946.48 has been billed as of February 3, 2007, leaving \$77,960.52 remaining under the contract. These completed tasks include putting together a Public Involvement Plan, analyzing flood control needs, comparing alternatives, and evaluating costs and benefits. As the study has progressed, several of these tasks have required additional study and additional meetings.

HDR has submitted the enclosed memo dated March 1, 2008 which identifies services which have been or will be provided and were not included within the original contract and scope. These out-of-scope services include additional steering committee and public meetings, more detailed hydrologic analysis, one additional flood control alternative, and more detailed land value assessments. These added services were discussed with Management prior to proceeding and were determined necessary to facilitate the most comprehensive and complete study possible.

At this point, this information is being provided for your review. As with past professional services contracts, there may be opportunities prior to completion to offset some of the costs (\$94,649) of these added services. Within the next couple months, HDR and District staff will review services yet to be provided and determine if efficiencies can be realized which would help offset additional services necessary.

In conclusion, HDR has or will be providing professional services not originally scoped in order to successfully complete the Papio Reservoir Site 1 and 3C Preliminary Study. Future tasks within the contract will be closely monitored for ways to conserve costs; however, an amendment to the contract may be brought to the subcommittee and Board for their consideration in order to cover the costs for additional services.





To: Paul Woodward, P-MRNRD		
From: John Engel, Project Manager	Project:	
CC: File		
Date: March 1, 2007	Job No:	

RE: Study of Reservoir Sites 1 and 3C Additional Services Update

The purpose of this memo is to provide an update on the status of additional services performed to date in the Study of Reservoir Sites 1 and 3C (Study). Additional services beyond the original contract, and associated costs, for these additional services are identified below and referenced to the original contract scope items dated January 31, 2006. Attachment A documents the costs associated with these additional services.

TASK 200 PUBLIC INVOLVEMENT

Due to the level of public interest in the Study, there have been substantial additions to the public involvement scope task. These additional efforts have been necessary and beneficial in reaching a broad range of stakeholders and providing information to the public on the purpose and need for the Study, the methodologies and process being employed, and to provide a means of two-way communication. Specific additions include:

<u>Subtask 210.2</u> <u>Communication and Meetings</u> - A total of 6 meetings were originally planned with the Project Steering Committee. A total of 8 meetings have been conducted through January 19, 2007, and an additional 2 are planned.

Subtask 230.5 Final Public Meeting (Task Added)

An additional public meeting was added to the project. The first public meeting was an introduction to the project and a means to identify potential impacts that needed to be considered in the study. The second public meeting presented the results of the analysis of project need and alternatives. The third and final public meeting, currently scheduled for May 2007, will present the findings of the impact analysis of Sites 1 and 3C. Prior to the public meeting, the P-MRNRD will be briefed on the Study findings. This final public meeting will include the preparation of presentation materials along with boards. It is assumed that the materials, labor, etc., for the final public meeting will be equivalent to the December 5, 2006 meeting.

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TASK 800 PROJECT ECONOMICS

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ATI ACHMENI A PIO-MISSOUR RYER NATURAL NESOURCES DISTRICT RELIMINARY DESIGN OF RESERVOIR SITES I AND 3C ADDITIONAL SERVICES FEE ESTIMATE		Fee Printing		775\$	8778		57,156	ALTERNATURE.	5590	\$590	_	57,187	SACRES CONTRACTORS	5344		2344		1385		2385		290%
OURCES SITES 1		abor Tech. Fee		\$12,240	\$24,548		\$36,788		\$15,860	\$15,200	_	\$31,050	551,4025 majors	\$9.492		\$9,432	194 0243 0250	\$8.082		\$8.082	-	W 127
SSOUR RYEN NATURAL RESOURCES IN WARY DESIGN OF RESERVOIR SITES A ADDITIONAL SERVICES FEE ESTIMATE		Potet Labor Cost		82. \$1;	190 \$2	282	ł	経過 のとと	144 \$7	П	288		SEARCH SERVICE	194	P8	L		34	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		100	748 50
ALLIACHMENL A VERNATURAL RE IGN OF RESERVI		Clerical Total Hours		16	18	32	828	100000000000000000000000000000000000000			10	20	STATES IN COMMON	_	100	20	2000	Ļ		188	.32	990
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	HDR Engineering, Inc. Estimated Hours/Costs	Senior 6 Engineer Se		24	40		\$11,328	uspace and the	12	12	54	54.248	· · · · · · · · · · · · · · · · · · ·	B	-	57,418	X 2011 10 10 10 10 10 10 10 10 10 10 10 10	2	6	\$354	A STATE OF THE PARTY OF	*** DF6/213
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Section 1 (1) (1) (1) (1) (1) (1) (1) (1) (1) (TASKS PH	ES 200 - PU		Final Public Meeting (Tax	Estimated Task Hours Subtotal	Ed Tate K	ARK SERIES 400—HYDROLOGYHYDRAULIC ANALYSES	Hydrakogic Model Davelapment	Hydraulic Model Development	Estimated Task Hours Subtotal	Estimated Task Cost Subtotal	ASK SERIES 700 - ENGRONMENTAL EVALUATION FOR THE PROPERTY OF T	Flood Control Atternatives Analyses	Estimated Task Hours Subtotal	Estimated Task Cost Subtotal	ASKSERIES SUG-ECONOMIC AMALYSES	Flood Control Benefits	Estimated Test Hours Subtotal	Estimated Tank Cost Subfotal	TO SECURE AND ASSOCIATION OF THE PROPERTY OF T	**************************************
			TASK SENE	Task 210.2	Tack 230.5			TAGK SERIE	Task 420	Task 440			TASKIBERIE	Task 760			TASKBERIE	Task 820.1			V\$402728950EC	(1) 大田 大田 大田

[1] Includes administrative fee for sub-consultants and expenses (except techn. fee) 🔞