

MEMORANDUM

TO: Programs, Projects and Operations Subcommittee

SUBJECT: Whitted Creek Stream Restoration Project
Professional Services Contract with CH2MHILL
Scope Changes

DATE: September 30, 2009 **Update:** October 6, 2009

FROM: Martin P. Cleveland, P.E.

In November 2008, the referenced project contract with CH2MHILL was signed. The professional services contract provided for project design, contract administration and construction observation. The project design was completed in May 2009, construction bidding in May-June 2009 and construction started in August 2009.

As a result of actions by other parties (Corps of Engineers), the scope of professional services has changed, as outlined in the attached CH2MHILL letter of September 21, 2009. The out of scope items are: HEC-HMS (Hydrologic) modeling, HEC-RAS (Hydraulic) model delivery delay, preparation of a Flood Risk Reduction Project Report and additional project grant administration and coordination. The cost of this out of scope work is \$20,337.07.

CH2MHILL attempted to absorb the out of scope items into the contract budget, but these items caused the overall professional services contract maximum amount of \$298,560.00 to be exceeded. This item was brought to Board in March 2009 as an informational item (see enclosure).

It is the Management's recommendation that the Subcommittee recommend to the Board that the General Manager be authorized to execute the proposed Amendment No. 1 to the professional services contract with CH2MHill for the Whitted Creek Stream Restoration Project, increasing the maximum not to exceed amount of the contract to \$318,897.07.



CH2M HILL
222 S 15th St
Suite 1402-S
Omaha, NE 68102
Tel 402.342.9765
Fax 402.342.1313

September 21, 2009

Martin Cleveland, P.E.
Papio-Missouri River Natural Resources District
8901 South 154th Street
Omaha, NE 68138

Subject: Whitted Creek Stream Restoration Project, District Contract No. 529-A,
Amendment No. 1

Dear Mr. Cleveland:

This letter is a follow-up to a February 23, 2009 letter (attached) regarding a Work Change Directive related to the above referenced project. A summary of the previously discussed out of scope items referred to in this letter and actual costs to complete is below;

- Non-delivery by US Army Corps of Engineers (USACE) of HEC-HMS model and January 2009 updates by CH2M HILL to existing HEC-HMS model used in lieu of USACE model; \$3,342.99
- Delayed HEC-RAS model delivery by USACE and associated design rework; \$6,631.15
- USACE Levee submittal; \$7,273.33

Expanded discussions of each item were provided in a February 6, 2009 letter (attached) to the Papio-Missouri River Natural Resources District (District). These tasks were completed and the project was bid on schedule and is currently under construction.

An additional out of scope event occurred in July 2009, when the USACE revised the stream flow value that the design was based upon, doubling the values originally provided in January 2009. Due to this significant change it was necessary to review the design in light of the increased flows. Although the change in stream flows from the revised USACE model had the potential to significantly impact the design and construction, due to a conservative design there was minimal change in the design necessary and no impact to the construction contract award or construction schedule. The cost of this review effort is listed below.

- Hydraulic model and design review due to updated HEC-HMS model: \$2,059.95

Under a previous contract, CH2M HILL, INC. (CH2M HILL) prepared grant applications on behalf of the District for the Whitted Creek Stream Restoration Project. The District was awarded construction grants from the Nebraska Environmental Trust (NET) and the State of Nebraska 319(h) Non-point Source Pollution Reduction Program, each in the amount of \$300,000. The February 23, 2009 letter noted that coordination or reporting support related

to the grant administration was out of scope. At the request of the District, during July 2009 CH2M HILL provided updated grant budget summaries based on the construction contract award bid tab, and coordinated with the District regarding other grant reporting requirements including modifications to the public education sign. The cost of these efforts is listed below.

- NET and 319 Grant coordination: \$877.12

The total cost for all out of scope work to date is \$20,337.07, supporting documentation for which is attached. As described in the February 23, 2009 letter and presented to the Programs Projects and Operations Subcommittee at the March 10, 2009 meeting, CH2M HILL charged some of these costs to the remaining budget of the previous Whitted Creek Stabilization Support Services contract. To date, \$6,331.84 was charged to this previous contract, leaving the balance for the out of scope work at \$14,005.23.

CH2M HILL informed the Programs Projects and Operations Subcommittee at the March 10, 2009 meeting that we would try, but may not be able to absorb all of the costs associated with these out of scope tasks into the existing budget. CH2M HILL attempted to do so, however was unsuccessful and will exceed the contracted budget without an amendment. We respectfully request an amendment to the existing contract in the amount of \$14,005.23 to cover the balance of the out of scope work. An amendment form is attached for your review and signature.

The District's consideration of this request is greatly appreciated. Should you have any questions or require additional information, please do not hesitate to contact me by phone at 402.342.9765 x37110 or by email at Emily.Holtzclaw@ch2m.com.

Sincerely,
CH2M HILL, INC.



Emily Holtzclaw, P.E.
Project Manager



Doug Sinton, P.E.
Operations Lead

Attachments

**AMENDMENT NO. 1 to STANDARD AGREEMENT FOR
PROFESSIONAL SERVICES DATED 3 November 2008**

CH2M HILL's Office Address: 222 South 15th Street, Suite 1402-S, Omaha, NE 68102

Project Name: Whitted Creek Stream Restoration Project

CH2M HILL Project: 381936
No.:

Client: Papio-Missouri River Natural Resources District

Address: 8901 South 154th Street

Omaha, NE 68138-3621

CLIENT requests and authorizes CH2M HILL to perform the following services:

Scope:

AMENDMENT NO. 1 will hereby modify the original Standard Agreement for Professional Services dated 3 November 2008. AMENDMENT NO. 1 represents scope, budget, and schedule modifications for ENGINEER to perform additional services related to hydrologic and hydraulic modeling, design review, and grant administration support. The scope of services will hereby be amended to add the following tasks.

ENGINEER reviewed and updated the Elliott and Associates (E&A) HEC-HMS model for Whitted Creek, which was prepared as part of the Tregaron Towne Center development in 2002. This model was used to estimate storm flows smaller than the 10-year event. It was understood that the updated E&A model would not produce exactly the same 100-year storm peak flow rate as the US Army Corps of Engineers (USACE) model. However, attempts were made to have the two models produce as similar of output as possible, considering the inherent differences in the purposes and content of the models. The updated E&A model output for smaller storms was used in the design to size the low flow channel of Whitted Creek. The preliminary flow values provided by the USACE in January 2009 for the 100-year storm were used by CH2M HILL in the HEC-RAS model for floodplain delineation.

ENGINEER delayed the design schedule to wait for the delivery of the USACE Flood Risk and Floodplain Management Section's HEC-RAS hydraulic model (electronic copies), which occurred on February 12, 2009, because the use of this model was necessary for incorporating the proposed improvements into the FEMA floodplain remapping project. The delay in delivery of the HEC-RAS model entailed some additional costs to the project (design and CAD rework because we proceeded based on assumptions that were later changed). This rework did not impact the overall construction schedule for the project.

ENGINEER prepared a Flood Risk Reduction Project Report for the USACE Emergency Management Program. The purpose of this report was to document potential impacts to the integrity of the levee and necessary changes to the associated Operations and Maintenance manuals resulting from this project.

ENGINEER reviewed the design (which was completed in May 2009 and out to bid) in light of revised (doubled) HEC-HMS model flow values provided by the USACE in July 2009. Substantial changes in the design were not necessary and the construction schedule was not delayed.

ENGINEER provided updated grant budget summaries based on the construction contract award bid tab, and coordinated with the District regarding other grant reporting requirements.

There is no change to the overall project schedule as a result of the work described above.

Compensation by CLIENT to CH2M HILL will be on the basis of:

Per conditions of the original contract dated 3 November 2008.

Original Contract value: \$298,560.00

AMENDMENT NO. 1: \$14,005.23

Total Revised Contract Amount: \$312,565.23

Other Terms: None.

Services covered by this AMENDMENT NO. 1 will be performed in accordance with the Provisions of the original Standard Agreement for Professional Services dated 3 November 2008 and any attachments or schedules. AMENDMENT NO. 1 may only be changed by written amendment executed by both parties.

CLIENT: Papio-Missouri River Natural
Resources District

CH2M HILL, INC.:

Signature _____

Signature 

Name (printed) _____

Name (printed) Doug Simon

Title _____

Title Operations Lead

Date _____

Date 9/21/2009

Whitted Creek Stream Restoration Project
Amendment No. 1 Supporting Documentation

Out of Scope Work Previously Billed to Whitted Creek Permitting Support Contract				
	HR	Rate	Cost	
<u>non-delivery of the HEC-HMS model</u>				
Design Engineer	12.0	\$144.65	\$ 1,735.80	
Project Engineer	18.0	\$82.34	\$ 1,482.12	
Project Engineer	1.0	\$125.07	\$ 125.07	
			\$ 3,342.99	
<u>delay in the HEC-RAS model delivery</u>				
Design Engineer	20.0	\$144.65	\$ 2,893.00	
CAD Technician	1.0	\$95.85	\$ 95.85	
			\$ 2,988.85	
			\$ 6,331.84	Total Previously Billed
Out of Scope Work Previously Unbilled				
	HR	Rate	Cost	
<u>delay in the HEC-RAS model delivery</u>				
CAD Technician	38.0	\$95.85	\$ 3,642.30	
			\$ 3,642.30	
<u>USACE Levee submittal</u>				
Design Engineer	41.0	\$144.65	\$ 5,930.65	
Senior Technologist, QC	6.0	\$223.78	\$ 1,342.68	
			\$ 7,273.33	
<u>Corps Model Change week of June 19 and July 3</u>				
PROJECT MANAGER	7.00	\$153.12	\$ 1,071.86	
STAFF ENGINEER 1	6.00	\$82.34	\$ 494.04	
STAFF ENGINEER 1	6.00	\$82.34	\$ 494.05	
			\$ 2,059.95	
<u>Grant Coordination</u>				
PROJECT MANAGER	2.00	\$153.12	\$ 306.24	
PROJECT MANAGER	1.00	\$153.13	\$ 153.13	
GRAPHIC DESIGNER 4	2.00	\$85.36	\$ 170.73	
STAFF ENGINEER 1	3.00	\$82.34	\$ 247.02	
			\$ 877.12	
Mileage Expenses			\$ 152.53	
			\$ 14,005.23	Total Previously Unbilled
			\$ 20,337.07	Total Out of Scope Work
			\$ 14,005.23	Amendment No. 1 request
			\$ 298,560.00	Original contract amount
			\$ 312,565.23	Modified contract amount

MEMORANDUM

TO: Programs, Projects and Operations Subcommittee

FROM: Martin P. Cleveland, P.E.

SUBJECT: Whitted Creek Stream Restoration Project
Professional Services Contract with CH2MHILL
Scope Changes Update

DATE: February 24, 2009

In November 2008, the referenced project contract with CH2MHILL was signed. The professional services contract provided for project design, contract administration and construction observation. The project design should be completed in Spring 2009, construction bidding in May-June 2009 and construction in July 2009 through May 2010.

As a result of actions by other parties (Corps of Engineers), the scope of services needs to be changed, as outlined in the CH2MHILL letter of February 23, 2009. The out of scope items are: HEC-HMS (Hydrologic) modeling, HEC-RAS (Hydraulic) model delivery delay and preparation of a Flood Risk Reduction Project Report. The cost of this out of scope work is \$17,400.

CH2MHILL will attempt to absorb the out of scope items into the existing contract budget, but it is possible that these items may cause the overall professional services contract maximum amount of \$298,560 to be exceeded. In that event the contract will be brought back to the Subcommittee and Board for consideration.

No Subcommittee action is required at this point in time.

Attachment

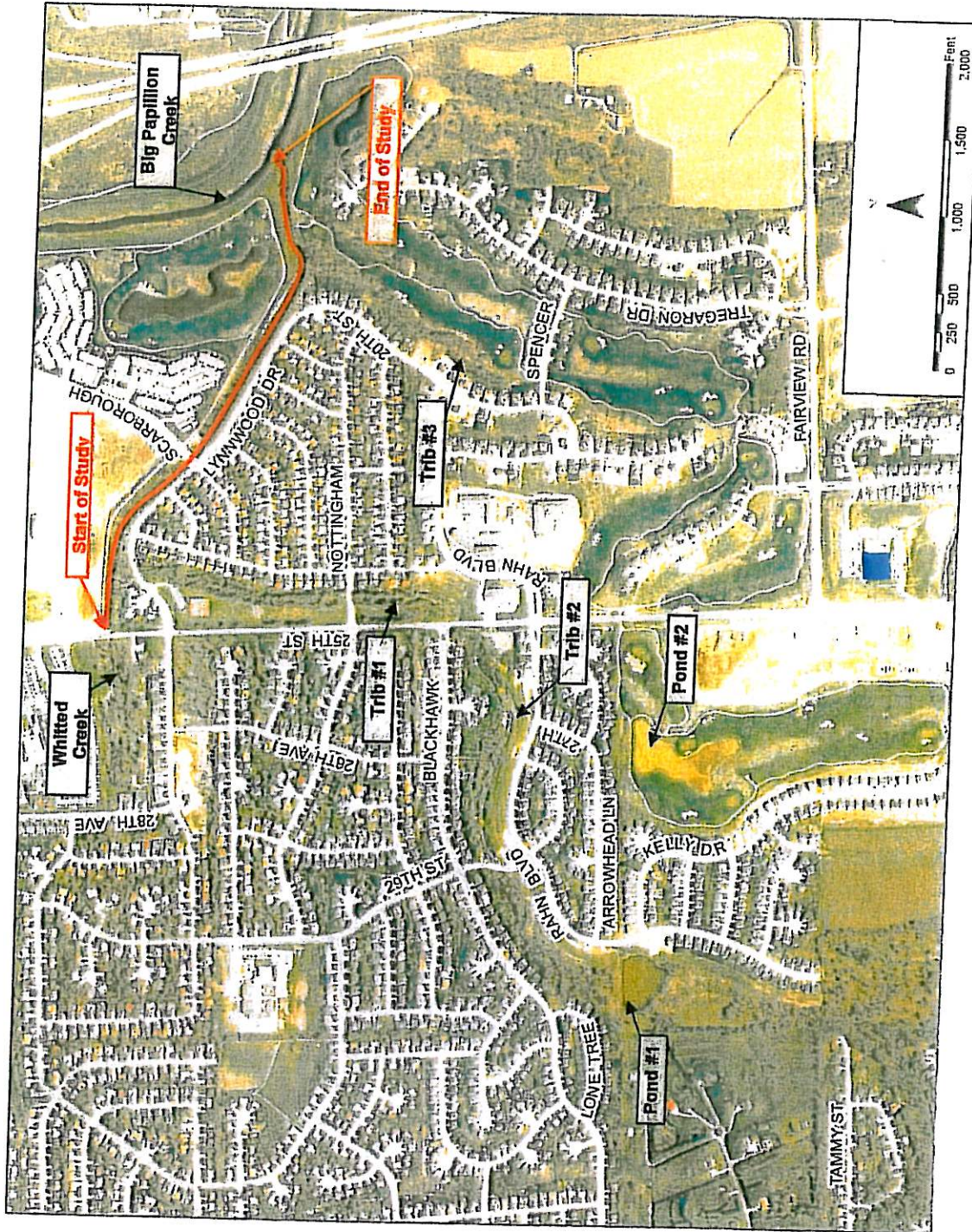


FIGURE 1
 Whitted Creek Watershed and Study Area
 Whitted Creek Stabilization Study



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Tel 402.342.9765
Fax 402.342.1313

February 23, 2009

Martin Cleveland, P.E.
Papio-Missouri River Natural Resources District
8901 South 154th Street
Omaha, NE 68138

Subject: Whitted Creek Stream Restoration Project, District Contract No. 529-A,
Work Change Directive

Dear Mr. Cleveland:

This letter is a follow-up to a February 6, 2009 letter regarding a Work Change Directive related to the above referenced project.

At the time of this writing, it is anticipated that this work change directive will not require adjustment to the contracted budget, but will result in modest design schedule modifications [approximately one (1) month delay] that should not impact the overall construction schedule.

A summary of the out of scope items and estimated costs to complete are highlighted below with expanded discussion of each provided later in the letter;

- Non-delivery of HEC-HMS model and updates to existing HEC-HMS model: \$3,200
- Delayed HEC-RAS model delivery and associated design rework: \$6,700
- US Army Corps of Engineers (USACE) Levee submittal: \$7,500

Based on previous telephone conversations with the Papio-Missouri River Natural Resources District (District) regarding these out of scope items, it is understood that CH2M HILL will attempt to absorb the cost of scope changes into the existing budget to the extent practical and will utilize the remaining budget from the previous Whitted Creek Stabilization Support Services contract. The scope of this previous project is essentially complete, and the District was recently notified of a \$300,000 award from the Nebraska Environmental Trust, as well as a \$300,000 award from the State of Nebraska 319(h) Non-point Source Pollution Reduction Program. Any coordination or reporting support related to the grant administration can be negotiated under a separate scope of work.

Through project execution, CH2M HILL will continue to track the budget closely. It is recognized by the District and CH2M HILL that existing budgets ultimately may not be able to absorb all of the costs associated with the out of scope tasks. Should it become apparent that the out of scope work will exceed the contracted budget or schedule, CH2M HILL will

promptly notify the District and bring forward an amendment request to complete the project in accordance with contract terms and conditions.

HEC-HMS Modeling

The contracted scope of work includes incorporating the Whitted Creek improvements into the ongoing Federal Emergency Management Agency (FEMA) floodplain remapping project for the Big Papillion Creek system. In order to accomplish this work in a timely manner, the contracted project scope included the assumption that the USACE Flood Risk and Floodplain Management Section would provide electronic copies of the HEC-HMS hydrologic and HEC-RAS hydraulic models to CH2M HILL by early January 2009. The USACE informed the District and CH2M HILL on January 5, 2009 that they would not release the preliminary HEC-HMS model to "outside entities", but did provide CH2M HILL with peak flow values for the 10-year, 50-year, 100-year, and 500-year events, which are output from this model. Recent communication with the USACE indicates that the final HEC-HMS model will not be provided to the District until it is considered final (estimated for mid to late 2009).

Due to schedule constraints related to the design of the Whitted Creek improvements, CH2M HILL recommended reviewing and updating, as necessary, the Elliott and Associates (E&A) HEC-HMS model for Whitted Creek, which was prepared as part of the Tregaron Towne Center development in 2002. This model has more detailed subcatchment delineation than the USACE model (possibly producing more refined results) and will be used to estimate storm flows smaller than the 10-year event. It is understood that the updated E&A model may not produce exactly the same 100-year storm peak flow rate as the USACE model. However, attempts will be made to have the two models produce as similar of output (for the same size rainfall events) as possible, considering the inherent differences in the purposes and content of the models. The updated E&A model output for smaller storms will be used in the design to size the low flow channel of Whitted Creek. The preliminary flow values provided by the USACE for the 100-year storm will be used by CH2M HILL in the HEC-RAS model for floodplain delineation.

HEC-RAS Model Delivery Delay

As mentioned previously, the contracted project scope included the assumption that the USACE Flood Risk and Floodplain Management Section would provide electronic copies of the HEC-RAS hydraulic model to CH2M HILL by early January 2009. Because the use of the USACE HEC-RAS model of Whitted Creek is necessary for incorporating the proposed improvements into the FEMA floodplain remapping project, CH2M HILL waited for the delivery of this model, which occurred on February 12, 2009. The delay in delivery of the HEC-RAS model entailed some additional costs to the project (approximately \$6,700 of design and CAD rework was necessary because we had to proceed with work based on assumptions that were later changed), and will delay the contracted project schedule for 90 percent and 100 percent designs, and therefore the bid advertisement date by approximately one month (into May and June of 2009). At this time, this one month delay is not expected to

impact the overall construction schedule for the project, which is for the construction to be complete by June 2010.

The USACE has stated that they will provide water surface elevations in Papillion Creek at the confluence with Whitted Creek (to estimate tail water conditions from the Papillion Creek into Whitted Creek) in late summer 2009, which is when the Papillion Creek HEC-RAS model is expected to be complete. Based on communications with the USACE, these Papillion Creek water surface elevations will not be incorporated into the final FEMA Whitted Creek HEC-RAS model as downstream boundary conditions. In the past, the Papillion Creek 10-year storm event water surface elevation was used in the Whitted Creek model as a downstream boundary condition. Rather, the USACE stated that the "normal depth slope" method will be used by the USACE in the final Whitted Creek model for the downstream boundary condition. Therefore, CH2M HILL will not wait for the Papillion Creek HEC-RAS model to be complete and tail water surface elevations to be available in order to finish the Whitted Creek project design. Rather, CH2M HILL will proceed based on the direction provided by the USACE to use the "normal depth slope" method as a downstream boundary condition in Whitted Creek.

Flood Risk Reduction Project (Levee) Report

During the 30 percent design meeting, Pamela Graham from the USACE Emergency Management Program was provided with an overview of the project. She indicated that, due to the proximity of the project to the levees on site (within the "critical area" for a levee, generally 300 ft riverward to 500 ft landward), it would be necessary to submit a Flood Risk Reduction Project Report to her group. The purpose of this report is to document potential impacts to the integrity of the levee and necessary changes to the associated Operations and Maintenance manuals resulting from this project. Previous guidance from the USACE, in the form of levee Operations and Maintenance manuals, indicated that channel work must be only 15 feet from the toe of levee. The Whitted Creek project will impact the stream channel within 300 ft of the levee. Therefore, preparation of this submittal, the USACE review period, and addressing any review comments from the USACE were not included in the contracted scope of work.

It is anticipated that the remaining budget within the previous Whitted Creek Stabilization Support Services contract will be sufficient to offset the anticipated efforts required to complete the required Flood Risk Reduction Project Report and address USACE comments. The District has directed CH2M HILL to redirect the use of the remaining funds in the USACE Permit Coordination task to support this effort. There is an estimated five week period necessary for the USACE to review this submittal and provide comments. Should this review period extend longer, CH2M HILL will revisit the need to make further adjustments to the project schedule and scope of work at that time. The additional costs associated with preparation of and addressing USACE Emergency Management Program review comments for the Flood Risk Reduction Project Report will be tracked, charged, and invoiced separately from the Whitted Creek Stream Restoration project to the remaining budget of the Whitted Creek Stabilization Support Services project (under the USACE Permit Coordination task).

The District's consideration of this request is greatly appreciated. Should you have any questions or require additional information, please do not hesitate to contact me by phone at 402.342.9765 x37110 or by email at Emily.Holtzclaw@ch2m.com.

Sincerely,
CH2M HILL

A handwritten signature in blue ink that reads "Emily Holtzclaw". The signature is written in a cursive, flowing style.

Emily Holtzclaw, P.E.
Project Manager