

## MEMORANDUM

**TO:** Programs, Projects and Operations Subcommittee

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

**DATE:** February 24, 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 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.

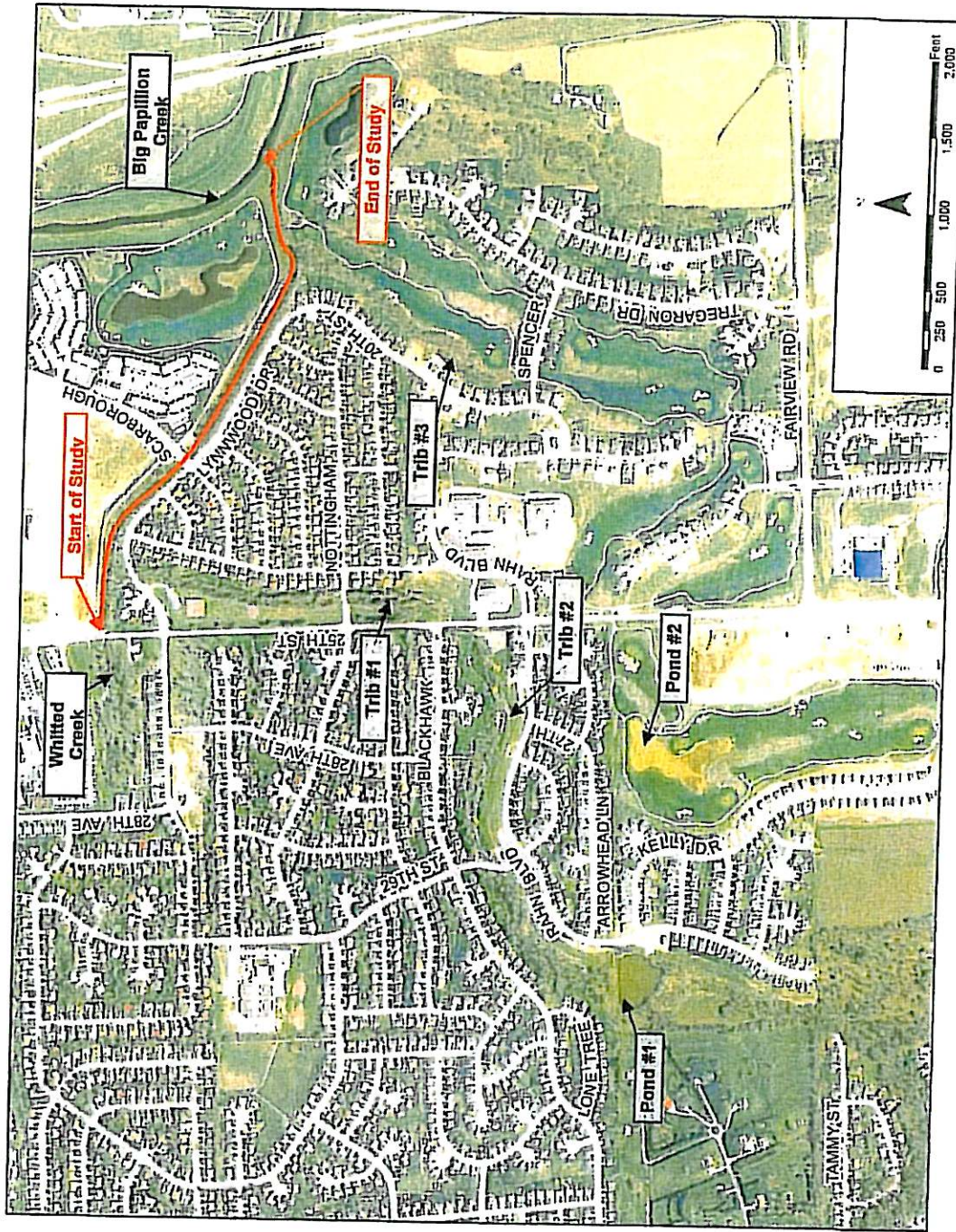


FIGURE 1  
Whitted Creek Watershed and Study Area  
Whitted Creek Stabilization Study





CH2M HILL  
222 S 15th St  
Suite 1402-S  
Omaha, NE 68102  
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](mailto: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