

MEMORANDUM

TO: Programs, Projects and Operations Subcommittee

FROM: Lori Ann Laster, Stormwater Management Engineer

SUBJECT: Review and Recommendation on Contract Amendment with Stantec Consulting Services, Inc. for Papio Hydraulic Modeling

DATE: June 6, 2018

A flood study of the Papillion Creek Watershed has been ongoing since 2003. This study is a collaboration between the Federal Emergency Management Agency (FEMA), US Army Corps of Engineers (USACE) and the District. In 2010, the flood maps for the West Papillion basin were completed and published. The study for the Big and Little Papillion branches began in June 2008 and it was intended for flood maps to be published in 2013 however, due to delays in USACE funding, the timeline has changed and it is currently anticipated that the maps will be published in 2019.

As part of the Big and Little Papio project, new hydrology for the watershed was completed in 2010 by the USACE. The peak flows increased substantially in many parts of the watershed. The next step of the study, the hydraulics, began in 2011 but the USACE funding stalled and in 2014 it was determined that the USACE could not complete the project. FEMA provided the funding to finish the hydraulics using their contractor and the initial results were presented at a March 2016 Flood Risk Review meeting. Significant increases in flows and floodplains are seen on the proposed flood maps especially along the Little Papillion Creek.

In June 2016, the District contracted with FYRA Engineering to reexamine the hydrology. National Oceanic and Atmospheric Administration (NOAA) published *Atlas 14 Precipitation-Frequency Atlas of the United States Volume 8 for the Midwestern States* which updated rainfall depths and distribution patterns. Additionally, the District and the Papillion Creek Watershed Partnership has or will complete four flood control reservoirs by 2019. FYRA Engineering presented this information to the District and indicated that an update of the hydrology provides the most current data and could make a significant impact on the proposed flood maps.

In April 2017, the District contracted with Stantec Consulting Services, Inc. to incorporate the new data in the upcoming flood maps. During their work, several new bridge structures were identified that were not in the original survey work completed by USACE. Additionally, the new hydrology data resulted in a floodplain on Cole Creek that is not consistent with the historic flooding problems witnessed by the City of Omaha and the District. FYRA Engineering has been working to revise the hydrology model based on some additional data and localized analysis. This new data developed by FYRA will need to be incorporated into the hydraulic models and new maps prepared by Stantec.

The attached Amendment No. 1 to Stantec's contract will cover these services for an amount not to exceed \$67,379.84, for a total contract amount of \$497,061.65.

Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute the proposed contract Amendment No. 1 with Stantec Consulting Services, Inc. for an update of the Papillion Creek Watershed hydraulic modeling in an amount not-to-exceed \$67,379.84, bringing the total contract amount to \$497,061.65, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.

This is **EXHIBIT K**, consisting of 5 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated 4/28/2017.

**AMENDMENT TO OWNER-ENGINEER AGREEMENT
Amendment No. 1**

The Effective Date of this Amendment is: _____.

Background Data:

Effective Date of Owner-Engineer Agreement: 4/28/2017

Owner: Papio-Missouri River Natural Resources District

Engineer: Stantec Consulting Services Inc

Project: Hydraulic Modeling for Papillion Creek Watershed

Nature of Amendment: [Check those that are applicable and delete those that are inapplicable.]

- ✓ Additional Services to be performed by Engineer
- ✓ Modifications to services of Engineer
- ✓ Modifications of payment to Engineer
- ✓ Modifications to time(s) for rendering services

Description of Modifications:

Stantec Consulting Services, Inc is presenting this addendum to the current project, Hydraulic Modelling for Papillion Creek Watershed. The attached proposal includes the following tasks:

- Revise Hydrologic Data - revise the hydrology submittal because of new discharges being applied to Cole Creek;
- Revise Hydraulic Data - add 11 new structures not in current modelling affecting 8 steams; incorporating LOMR modelling into Hell Creek; and re-modelling Cole Creek with new discharges;
- Independent QA/QC of Revised Hydraulic Data;
- Levee Data Certification Training - develop a workshop for levee accreditation to present to Papio-Missouri River Natural Resources District and guest.

MODIFIED VERSION of

Exhibit K – Amendment to Owner-Engineer Agreement.

Agreement Summary:

Original agreement amount:	\$ 429,681.81
Net change for prior amendments:	\$ 0.00
This amendment amount:	\$ 67,379.84
Adjusted Agreement amount:	\$ 497,061.65

Change in time for services (days or date, as applicable): 12/21/2018 date of completion

The foregoing Agreement Summary is for reference only and does not alter the terms of the Agreement, including those set forth in Exhibit C.

Owner and Engineer hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect.

OWNER:

ENGINEER:

Papio-Missouri River Natural Resources District

Stantec Consulting Services, Inc.

By: _____

By:  _____

Name: John Winkler
Title: General Manager

Name: Jason Schneider
Title: Associate, Project Manager

Date Signed:

Date Signed: 6/6/2018

MODIFIED VERSION of

Exhibit K – Amendment to Owner-Engineer Agreement.

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Schedule

Papillion Creek Watershed	Baseline Start Date	Baseline End Date
1 CTP Program Management	5/1/2017	12/21/2018
2 Project Management	5/1/2017	12/21/2018
3 Develop Flood Risk Products	10/29/2018	12/7/2018
4 Develop Topographic Data	5/1/2017	5/19/2017
5 Develop Hydrologic Data	5/1/2017	7/27/2018
5a Revise Hydrology Data	7/1/2018	7/27/2018
6 Develop Hydraulic Data	5/1/2017	9/14/2018
6a Revise Hydraulic Data	7/1/2018	9/14/2018
7 Independent QA/QC Hydraulic Data	10/1/2017	9/14/2018
7a Independent QA/QC of Revised Hydraulic Data	8/20/2018	9/14/2018
8 Perform Floodplain Mapping	9/17/2018	10/26/2018
9 Perform Independent QA/QC Floodplain Mapping	10/8/2018	10/26/2018
10 Levee Data Certification Training	8/6/2018	9/28/2018

All changes or delays in scheduled will be coordinated with the Papio NRD and a corrective action plan will be prepared if deemed necessary.

1. Schedule assumes a July 1, 2018 start date.
2. Assumes all hydrology submittal from consultant will be complete and no additional review required.

Cost Proposal

Tasks	5-A Revise Hydrologic Data	6-A Revise Hydraulic Data	7-A Independent QA/QC of Revised Hydraulic Data	10 Levee Data Certification Training	TOTAL HOURS	Labor Rate	Total
Principal					0		
Program Manager					0		
Sr. Project Manager					0		
Project Manager	2	19	3	12	36	\$ 49.47	\$ 5,342.76
Sr. Engineer	0	28	8	56	92	\$ 48.86	\$ 13,485.36
Engineer	36	246	64	8	354	\$ 38.20	\$ 40,568.40
Jr. Engineer	0	0	0	0	0	\$ 30.09	\$ -
Sr. GIS Specialist	0	6	0	0	6	\$ 28.47	\$ 512.46
GIS Specialist	0	64	8	8	80	\$ 28.20	\$ 6,768.00
Jr. GIS Specialist					0		\$ -
Sr. Surveyor					0		\$ -
Survey					0		\$ -
Jr. Survey					0		\$ -
Admin/Billing	0	2	0	0	2	\$ 23.81	\$ 142.86

Total Hours	38	365	83	84	570	Total Check
Total Labor Cost	\$4,422	\$41,185	\$9,629	\$11,583	\$66,819.84	\$66,819.84

Engineering Labor Rate is Average Project Engineers

Project Multiplier 3.0

OTHER DIRECT COST SUMMARY

M&IE Per Diem				\$180.00
Lodging				\$240.00
Parking				
Car Rental				\$80.00
Mileage				
Fuel				\$60.00
Postage & Express Delivery				
Large Format Plot				

Other Direct Cost \$0.00 \$0.00 \$0.00 \$560.00

TOTAL TASK COST \$4,422 \$41,185 \$9,629 \$12,143 \$67,379.84

Unit Cost:

1. Large format color plots are charged at \$8 per 24" x 36"
2. Rental Car assumed a rate of \$60 per day.
3. Fuel was charged at \$30 per tank.

Task Name	PM	Sr Eng	Eng	Jr Eng	Sr GIS	GIS	Admin	Total Hrs
Total Project	36	92	354	0	6	80	2	570
5-A Revise Hydrologic Data	2	0	36	0	0	0	0	38
Revise FIRM Database Files - Cole Creek			6					6
Revise Digital Version of all Data Used including GIS Layers	1		16					17
Revise Digital Version of Draft Text for the FIS Report	1		14					15
6-A Revise Hydraulic Data	19	28	246	0	6	64	2	365
Format new collected survey data & As Builts	1	4	22					27
Revise HEC-RAS Models	6	8	44					58
Model Floodway	6	8	64					78
Run Check RAS			16					16
Prepare Digital Flood Profiles	1	4	32					37
Prepare Floodway Data Tables	1	4	32					37
Detailed Flood Hazard and Floodway Delineations	2		4		6	64		76
Revise Digital Data Capture Standard (DCS) Data	2		32				2	36
7-A Independent QA/QC of Revised Hydraulic Data	3	8	64	0	0	8	0	83
Internal QA	1	4	24					29
Independent QR of deliverable	1		8					9
Address QR comments	1	4	32			8		45
10 Levee Data Certification Training	12	56	8	0	0	8	0	84
Prepare Certification Training in accordance with new Guidance Document		32	8			8		48
Presentation Deliver	12	24						36