

Memorandum

To: Programs, Projects, and Operations Subcommittee
From: Lori Ann Laster, Stormwater Management Engineer
Date: October 1, 2024
Re: Memorandum of Understanding with Omaha Public Works for 120th Street Bridge Remapping

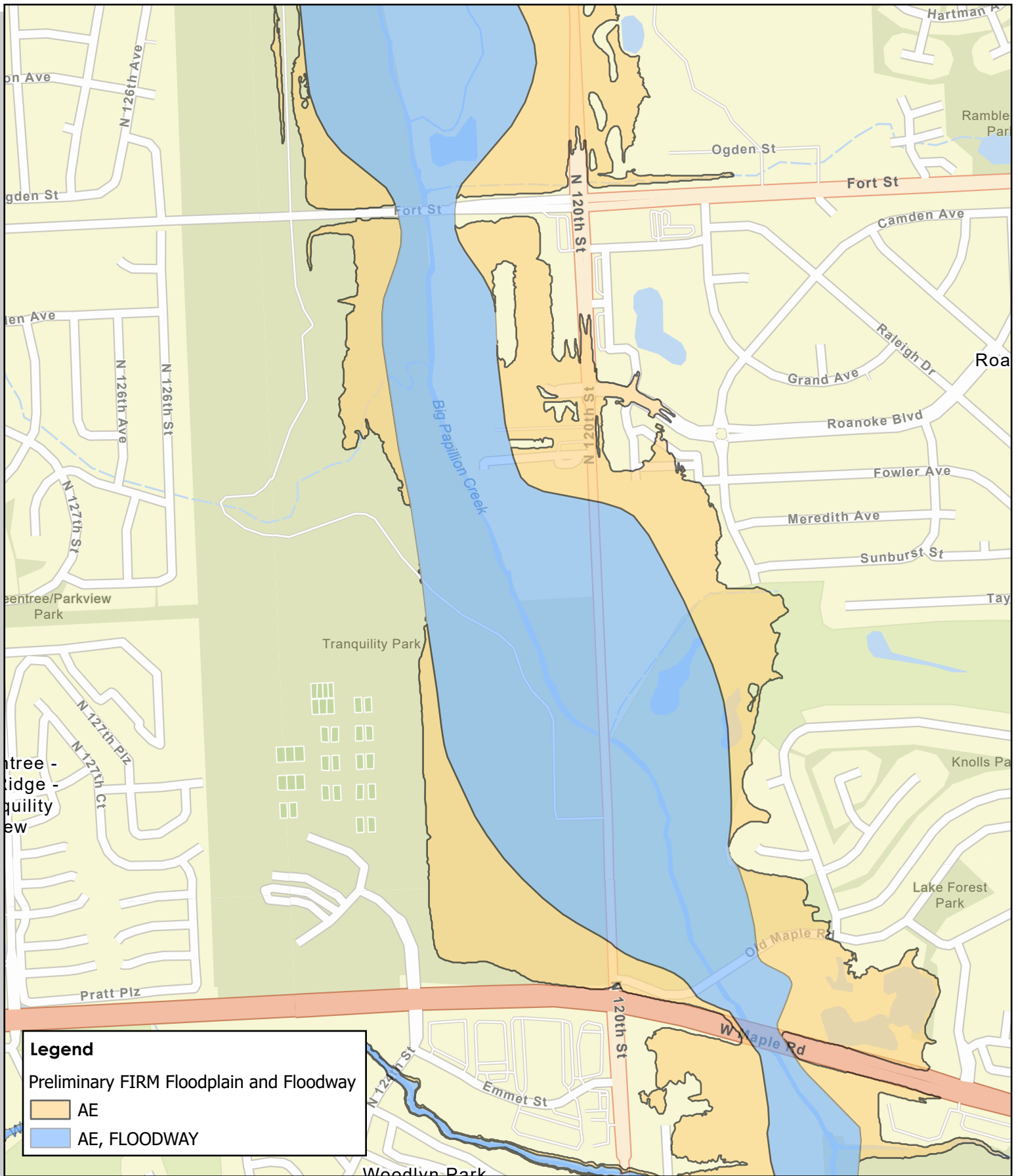
Updated flood risk mapping on Big Papillion Creek began in 2008 with the final modeling work being completed in 2019. However, FEMA did not release preliminary maps until 2022. In the time between the final modeling and release of the new maps, many things have changed within the watershed. While FEMA does require a 90-day appeal period for the preliminary maps, they do not consider new infrastructure or new construction as an appeal. The 120th Street Bridge between Maple Street and Fort Street was replaced after 2019, with the design of the project completed in 2016 before new hydraulic models were available.

The original bridge was much lower and constricted flow. When the amount of flow was updated to incorporate new hydrological data, the original bridge geometry showed a large increase in the Special Flood Hazard Area and floodway along Big Papillion Creek. The new bridge was constructed with a larger opening and some downstream channel improvements. Knowing that the preliminary map was showing incorrect data, the District contracted with JEO Consulting Group, Inc. to prepare an application for a Letter of Map Revision to make sure the most current data would be used to determine the SFHA and floodway boundaries after the new maps are effective.

The contract with JEO included the task of updating the existing hydraulic model and submitting the data to FEMA. However, as the model was updated, there were some concerns about the original modeling method. The storm event on May 21 this year flooded this area and the District and JEO were able to capture some additional data. After discussing the concerns about the original model and the additional data from the flood event, Staff, JEO, and Omaha Public Works staff all agreed that a 2-dimensional model would be the best fit for this area. In order to create the new model to meet FEMA mapping standards, a contract amendment would be necessary. Omaha Public Works has agreed to split the cost of the amendment with the District.

The original contract amount was \$51,340. To update the model and complete the application, JEO has requested an additional \$24,870 bringing the total contract amount to \$76,210. The attached Memorandum of Understanding outlines the amendment tasks and the cost share from Omaha Public Works in the amount of \$12,870.

Recommendation that the General Manager be authorized to execute the Memorandum of Understanding with Omaha Public Works to cost share on the 120th Street Remapping project. subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.



Legend

Preliminary FIRM Floodplain and Floodway

- AE
- AE, FLOODWAY

Preliminary FIRM Floodway and Floodplain

Omaha, NE



Created By: ECM
 Date: 10/01/2024
 Software: ArcGIS Pro
 File: 240629.00

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MEMORANDUM OF UNDERSTANDING FOR COST SHARING
BETWEEN THE CITY OF OMAHA, NEBRASKA
AND THE PAPIO-MISSOURI RIVER NATURAL
RESOURCES DISTRICT

THIS MEMORANDUM OF UNDERSTANDING (hereinafter "MOU") is made and entered into on this [REDACTED] day of [REDACTED], 2024, by and between the CITY OF OMAHA, NEBRASKA, a municipal corporation and political subdivision of the State of Nebraska (hereinafter "CITY"), and PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT, a political subdivision of the State of Nebraska (hereinafter "DISTRICT"), collectively referred to herein as "the Parties."

WHEREAS, DISTRICT works in partnership with the Federal Emergency Management Agency to produce floodplain mapping in adherence to the National Flood Insurance Program requirements;

WHEREAS, CITY has caused for the construction of the Big Papillion Creek 120th Street Bridge (hereinafter "the Bridge") as part of the reconstruction of 120th Street between Stonegate Drive and Roanoke Boulevard;

WHEREAS, the construction of the Bridge has impacted the geometry of the surrounding floodplains, causing necessity for an update to the current floodplain maps (hereinafter, "the Map Revision");

WHEREAS, DISTRICT has already retained an engineer consultant to update the Bridge Hydraulic Model and prepare a Letter of Map Revision;

WHEREAS, the Map Revision will require additional professional services from the DISTRICT's engineering consultant which will be agreed to by the DISTRICT through a contractual amendment (hereinafter, "the Amendment"); and

WHEREAS, the Parties desire to share the cost of the Amendment as it will provide general benefit to both Parties.

NOW, THEREFORE IT IS UNDERSTOOD BY AND BETWEEN THE PARTIES HERETO THAT:

1. GENERAL PURPOSE: In consideration of these mutual promises, the Parties hereby agree to equally share the cost of the Amendment. DISTRICT shall submit a request for reimbursement to the CITY for the CITY's portion of the agreed upon costs which shall be paid to DISTRICT without unreasonable delay. The total Amendment cost is twenty-four thousand eight hundred and seventy dollars (\$24,870.00). The CITY shall reimburse the DISTRICT for the Amendment, not to exceed, twelve thousand four hundred and thirty-five dollars (\$12,435.00).

2. DURATION: This MOU shall commence immediately upon the execution hereof by the Parties and shall remain in effect until terminated. This MOU shall automatically terminate upon completion of the Amendment and upon satisfaction and payment by the Parties. Amendment costs shall continue to be shared pursuant to this MOU until the effective date of termination.

3. INTERLOCAL AGREEMENT ACT: The Parties do not intend to create a separate legal or administrative entity related to this Amendment. The Parties do not intend to own any property related to this Amendment.

4. MOU COORDINATION: This MOU shall be administered primarily through the Public Works Director of the CITY and the General Manager of the DISTRICT. The aforementioned representatives shall be reasonably available to consult with each other and/or their representatives to discuss performance of this MOU.

5. AMENDMENTS: This MOU may not be amended except by mutual agreement of the Parties and then only in writing. Clarifications of this MOU not inconsistent with its terms may be made in writing administratively between the Parties.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals the day and year first above written.

CITY OF OMAHA, NEBRASKA, a municipal corporation and Nebraska political subdivision

By: _____

Robert G. Stubbe, Public Works Director

RESOURCES DISTRICT, a political subdivision of
the State of Nebraska

By: _____

John Winkler, General Manager



SCOPE OF SERVICES – Amendment #1

Big Papillion Creek 120th Street Bridge Letter of Map Revision

JEO Project 240629.00

Papio-Missouri River NRD

September 10, 2024

AMENDMENT BACKGROUND AND DESCRIPTION:

The Papio-Missouri River NRD (NRD) is currently in the process of finalizing floodplain map updates for the Big Papillion Creek Watershed through a Federal Emergency Management Agency (FEMA) floodplain mapping project, case # 17-07-0403S which is the basis for the current Preliminary Flood Insurance Rate Map (FIRM) for Douglas County. As part of completing this project, it was identified that geometry changes to the 120th Street Corridor have occurred that are not fully reflected in the hydraulic model supporting the revised floodplain maps. Based on this, a Letter of Map Revision (LOMR) is needed to fully update the hydraulic model for Big Papillion Creek to match existing geometry conditions.

The initial LOMR effort prior to this amendment focused on bridge geometry modifications for 120th Street based on the one dimensional (1D) hydraulic model developed for the Preliminary FIRM. The 1D model geometry was reviewed vs. the new bridge crossing geometry as well as the 120th Street road widening and bridge approach raise geometry modifications associated with that project. Through the analysis completed as part of the original scope, it was determined that a simple change of bridge geometry in the model would not be an accurate representation of flood risk in the area, due to a combination of bridge change, road/approach modifications, and a complex hydraulic configuration. The complex hydraulics of the area also resulted in a potentially wider-than-necessary floodway in the preliminary FEMA mapping. Considering these elements and through discussion, the NRD elected to modify course of the LOMR to use a two-dimensional (2D) modeling approach. This also necessitated extending and modifying the reach and extents covered by the LOMR to cover key hydraulic components impacting flood risk assessment, address FEMA LOMR technical requirements including flood profile tie-in, and developing a detailed 2D floodway analysis for the revised LOMR reach.

Finally, while this approach revision was in development, the flood of record for Big Papillion Creek at Fort Street occurred in May 2024. JEO will use available high water mark data, along with stream gage observations, to complete hydraulic calibration of the 2D flood model to support the LOMR. This scope of services amendment includes the additional and revised tasks needed for development of revised hydraulics and submittal of the LOMR documentation required to update this reach of Big Papillion Creek for the Papio-Missouri River NRD.

This amendment modifies the original agreement dated 25 January 2024 between the NRD and JEO Consulting Group, Inc. Unless otherwise specified, the original agreement applies except as modified by the amendment.

MODIFIED AND ADDITIONAL TASKS:

The consultant shall perform the following revised and additional tasks for this project:

Task 1: Updated Bridge Hydraulic Model and Floodplain Mapping Tie-in Assessment

Task 1.5 – Detailed 2D Hydraulic Model – the screening level 2D model previously developed will be modified and refined to reflect:

- Extended 2D model reach anticipated to be required to cover key hydraulic components relevant to the hydraulic model findings as well as FEMA LOMR tie-in requirements.
- Geometry edits for both the roadway widening and road raise as well as the updated 120th Street Bridge.
- Calibration of the 2D hydraulic model to the May, 2024 Big Papillion Creek flood event observations.
- Additional analysis of flood profiles required to match the Preliminary FIS as well as review of tie-in for those profiles.
- Development of a detailed 2D floodway analysis for the revised LOMR reach.

Task Deliverables:

- 2D Hydraulic Model
- Summary Technical Memo

Updated Key Assumptions:

- Hydrology will not be revised.
- The hydraulic model will not be updated except for the modifications required by the addition of the revised geometry and the defined 2D model reach. If FEMA LOMR review requires model modifications unrelated to the geometry revisions and anticipated 2D model reach, this may require additional services.
- Results will be subject to change based on potential agency reviews as well as the FEMA LOMR review process.

Task 2: Letter of Map Revision (LOMR)

This task includes preparation and submittal of a LOMR. The LOMR will evaluate revised conditions since development of the current FIRM which include updates hydraulic analyses completed under Task 1. The LOMR process will involve submittal of documentation demonstrating current flood hazards.

Task 2.5 - FEMA LOMR Review Coordination (Additional)

LOMR complexity has increased with the extension of the LOMR reach, modification of the approach to 2D hydraulics, and with the addition of the 2D floodway analysis. JEO anticipates the possibility of more in-depth review by the FEMA MT-2 team and potential associated technical coordination as part of the LOMR submittal and review process. Additional budget has been allotted for this eventuality.

Task 3: Project Management

Task 3.1 – Project Management (Additional)

The timeline of the project and baseline project management will be extended due to the increases in project complexity.

Task Deliverables:

- Monthly Progress Reports
- Meeting Minutes

REVISED PROJECT SCHEDULE:

We anticipate completion of the submittal phase of this project within 3 months of receiving amendment approval. The overall project timeline is dependent upon the Letter of Final Determination for the updated FEMA mapping and LOMR review time; LOMR review time can be multiple months.

AMENDMENT FEE AND REVISED PROJECT FEE:

The consultant will provide the additional services described herein for an hourly-not-to-exceed amount of \$24,870.00 for a revised total project fee of \$76,210.00. The consultant will invoice monthly for services to date, due upon receipt. Invoices unpaid after 30 days will accrue interest at 12% per annum (1% per month), credited first to interest and then to principal.

Amendment 1	
Task 1.5 – Detailed 2D Hydraulic Model	\$18,400.00
Task 2.5 – Additional FEMA Review Coordination	\$5,980.00
Task 3 – Additional Project Management	\$490.00
Amendment Total	\$24,870.00
Original Agreement	\$51,340.00
REVISED TOTAL	\$76,210.00

FEE FOR ADDITIONAL SERVICES:

If necessary further additional services can be provided according to the current hourly rate schedule.

SERVICES NOT INCLUDED:

If necessary, a fee for these services can be negotiated.

1. Significant hydrologic analysis.
2. Significant hydraulic model edits beyond those required for the defined LOMR reach.
3. Additional site visits, meetings, and public information efforts not previously noted.
4. Complete topographic survey of floodplain areas.
5. Preliminary and final design of potential improvements.
6. Coordination of securing funding or grants from outside parties.
7. Detailed real estate/easement review or negotiation of right-of-way and/or easements.
8. Detailed coordination with public and/or private utilities.

SERVICES PROVIDED BY THE NRD:

1. Designate staff member as project representative.
2. Provide available data, flooding history, previous studies, etc. as needed.
3. Provide feedback and review of all submittals in a timely manner.
4. Perform public notice processes associated with the LOMR submittal, as needed.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment #1:

Owner:

Engineer: JEO Consulting Group, Inc.



By: Amanda Grint

By: Dan Fricke

Title: Assistant General Manager

Title: Project Manager

Date Signed: _____

Date Signed: 10 September 2024