REQUEST AUTHORIZATION FOR MAYOR AND FINANCE OFFICER TO SIGN PROFESSIONAL SERVICES AGREEMENT OR AMENDMENT
Date: 6/11/2020

Project Name & Number: Analysis of Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas (SFHA) Meade/Hawthorne Drainage Basin, Project Number 18-2458
CIP #: 51190

Project Description: To provide professional engineering services related to the preparation of detailed hydrologic and hydraulic analyses, Letter of Map Revision (LOMR) to SFHA's identified in the current National Flood Insurance Rate Maps and recommendations for drainage infrastructure projects within the Meade/Hawthorne Drainage Basin to reduce current flood risks.

Consultant: Advance Engineering and Environmental Services, Inc. (AE2S)

Original Contract Amount: $164,272.00
Original Contract Date: 1/22/19
Original Completion Date: 12/31/19

Addendum No: 2

Amendment Description: The Amendment to the Agreement includes adjustment of the project schedule and additional and/or modified project tasks determined to be necessary including hydraulic/hydrologic models for mapping and stormwater infrastructure evaluation, FEMA LOMR review comments and a web-based informational meeting not contemplated in agreements to date, as reflected in Exhibits A and B. The new contract completion date shall be July 30, 2020.

Current Contract Amount: $164,272.00
Change Requested: $18,097.00
New Contract Amount: $182,369.00
New Completion Date: July 30, 2020

Funding Source This Request:

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<td>$182,369.00</td>
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Agreement Review & Approvals

Project Manager
Date: 6/11/2020

Division Manager
Date: 6/16/2020

Department Director
Date: 6/16/2020

City Attorney
Date: 6/15/2020

Routing Instructions
Route: two originals of the Agreement for review and signatures.
Finance Office - Retain one original
Project Manager - Retain second original for delivery to Consultant
cc: Public Works Engineering Project Manager

FINANCE OFFICE USE ONLY
Appropriation Date: 6/14/2020
Cash Flow Date: 6/14/2020

Rev. 09/2009
AMENDMENT NO. 2 TO AGREEMENT

Project: Analysis of FEMA SFHA Meade/Hawthorne Drainage Basin
         Project No. 18-2458 / CIP 51190

Background Data: Effective Date of Agreement: January 22, 2019
                 Owner: City of Rapid City
                 Engineer: AE2S

Nature of Amendment:
The Amendment to the Agreement includes adjustment of the project schedule and
additional and/or modified project tasks determined to be necessary including
hydraulic/hydrologic models for mapping and stormwater infrastructure evaluation,
FEMA LOMR review comments and a web-based informational meeting not
contemplated in agreements to date, as reflected in Exhibits A and B. The new contract
completion date shall be July 30, 2020.

Current Contract Amount: $164,272.00

Change Requested: $ 18,097.00

New Contract Amount: $182,369.00

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. The effective date of this Amendment is:

CITY OF RAPID CITY:
By: ____________________________
    Steve Allender, Mayor
Date Signed: ____________________

ATTEST:
By: ____________________________
    Pauline Sumption, Finance Officer
Date Signed: ____________________

Engineer:
By: ____________________________
    AE2S
Date Signed: 6/11/2020
EXHIBIT A
SCOPE OF SERVICES
AMENDMENT NO. 2 TO EXISTING CONTRACT

Analysis of FEMA SFHA Meade/Hawthorne Drainage Basin
Project No. 18-2458 / CIP 51190

The City of Rapid City has requested an amendment to the original contract for professional services for the Meade/Hawthorne Drainage Basin.

The proposed amendment for the Meade/Hawthorne Drainage Basin consists of:

1. Revising the scope to reflect:
   a. Additional effort to support obtaining a FEMA Letter of Map Revision (LOMR) associated with:
      i. Revising the hydrology and hydraulics approach from the original contract.
      ii. FEMA requesting additional documentation beyond the documentation requested on previously approved LOMRs.
   b. Additional effort to support the DBDP evaluation associated with:
      i. Revising the hydrology approach from the original contract.
      ii. Preparing an opinion of probable cost update for a DBDP alternative developed by others in 2004.

2. Revising the schedule to reflect delays by FEMA in reviewing and providing comments on the Letter of Map Revision (LOMR) submittal made on October 1, 2019.

The City requested that Advanced Engineering and Environmental Services, Inc. (AE2S) submit an amendment to the existing contract for these additional services.

AMENDED PROJECT SCOPE

AE2S will complete the additional or modified tasks as part of this amendment. Task and subtask numbering are consistent with the original contract. Modified scope items are in strike-out and italics.

TASK 1 - MEETINGS AND PROJECT MANAGEMENT:

1.1 Meetings – Prepare for, attend, take and distribute minutes for the following meetings:

D. Floodplain – Public Informational Meeting to Present Floodplain Revisions and Information on Property Owner Improvements to Reduce Flood Risk

D. Floodplain and Drainage Basin Design Plan – Web-based informational meeting that will be recorded and posted to the City’s website.
TASK 2 - DATA COLLECTION:
No additional services.

TASK 3 - HYDROLOGIC ANALYSIS:

3.7 Modify hydrologic model developed in Task 3 of the original contract to reflect the effective FEMA peak flows for use in FEMA LOMR submittal.

3.8 Determine flow split between Meade Street surface flow, Meade concrete channel east of Elm Avenue and south of Meade Street, and existing Meade St. box culvert from Elm Avenue to Meade-Hawthorne channel that begins just east of Haines Court extended.

TASK 4 - HYDRAULIC ANALYSIS AND MAPPING:

4.4 Complete floodway encroachment analysis meeting City and FEMA standards for maximum elevation rise. Floodway will be defined for the portion of the Meade/Hawthorne Channel northeast of the Meade Street / Haines Court intersection (upstream end) to the mouth at Rapid Creek (downstream end).

4.5 Provide QA-QC of hydraulic analysis and floodplain/floodway mapping.

4.6 Adjust revision area for floodplain mapping for submittal to FEMA from the upstream end of the Meade channel just east of Haines Court to Saint Anne Street to reflect survey data collected in Task 2 of the original contract and the City’s box storm sewer / culvert under Meade Street.

4.7 Input flow split values determined as part of the amended Task 3 into the revised hydraulic model.

4.8 Develop 100- and 500-year floodplain mapping for the reach that extends from the upstream end of the Meade channel just east of Haines Court to Saint Anne Street

TASK 5 - FEMA DOCUMENTATION:
No additional tasks except providing additional effort for responding to FEMA comments on the LOMR application, as outlined in Task 5.6.

5.6 Additional effort to respond to FEMA comments beyond original contract scope.

5.8 Prepare zoomed-in 8.5”x11” maps of the revised floodplain area along Meade Street for use in mailings prepared by the City.

TASK 6 - DRAINAGE INFRASTRUCTURE EVALUATION AND RECOMMENDATIONS:

6.3 Prepare cost-benefit analysis using FEMA approved standards and FEMA’s BCA Tool for two of the three alternatives (alternatives to be determined after meeting with City). Prepare cost-benefit analysis using comparison of improvement cost to value of structures protected in the 10-, 50, and 100-year events for two alternatives.

6.5 Revise hydrologic model to reflect infiltration parameters outlined in City’s Infrastructure Design Criteria Manual (IDCM) versus the parameters that reflect the unique conditions that are present in the Black Hills that is reflected in Task 3 of the original contract.
6.6 Revise hydraulic model developed in Task 4 of the original contract to reflect the revised flows developed as part of Task 6.5 in order to develop revised inundation mapping necessary to complete Task 6 of the original contract.

A. Revise flow values that are input into RAS (total of about 50 flow change locations each for 10-, 50-, 100-, and 500-year events)

B. Complete split flow analysis in HEC-RAS to determine final flow splits between various reaches in the Meade-Hawthorne basin (e.g. between Meade-Hawthorne channel and Meade Street).

C. Create revised inundation mapping with the updated flows.

6.7 Prepare an opinion of probable cost (OPC) for improvements outlined in the “Elm Avenue Drainage Study and Preliminary Storm Sewer Design”, Rapid City Project No. DR03-1333, that are east of Elm Avenue, north of Meade Street, and south of St. Patrick Street, and west of Oak Avenue. The purpose of this OPC is to serve as a comparison to the recommended and alternative DBDP improvements in this same area developed as part of this project (18-2458).

6.8 Prepare map comparing current 100-year flooding risk to proposed 100-year flooding risk for the city block that includes Peace Lutheran Church.

AMENDED PROJECT SCHEDULE

Below are the modified timeframes for each phase of work based on the Scope of Services dates.

Added in bold. Modified deadlines in strike-out and italics

Contract Negotiations Complete.......................... January 4, 2019
Final Rapid City Council Authorization NTP............. January 25, 2019
Preliminary Mapping and Study Report .................. April 30, 2019
Preliminary Results Meeting................................ May 15, 2019
FEMA LOMR Documentation ................................ June 15, 2019-October 1, 2019
Drainage Improvement Recommendations bounded by
St. Anne-Meade St-Elm Ave-Maple Ave............. November 12, 2019
Drainage Improvement Recommendations (All)....... August 31, 2019-November 27, 2019
DBDP Meeting.................................................. December 9, 2019
Project Completion Date................................. April 30, 2020-July 30, 2020
## EXHIBIT B

Analysis of FEMA SFHA Meade/Hawthorne Drainage Basin  
Project No. 18-2458 / CIP 51190, Amendment 2  
Advanced Engineering and Environmental Services, Inc.  
TASK SCHEDULE  
06/09/2020

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<td>1.1 Task 1 - Project Management and Meetings</td>
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