



BOARD OF SUPERVISORS AGENDA ITEM REPORT CONTRACTS / AWARDS / GRANTS

☐ Award ☒ Contract ☐ Grant

Requested Board Meeting Date: 09/01/20

* = Mandatory, information must be provided

or Procurement Director Award ☐

***Contractor/Vendor Name/Grantor (DBA):**

JE Fuller / Hydrology & Geomorphology, Inc. (Headquarters: Tucson AZ)

***Project Title/Description:**

Brawley And Black Wash Detailed Risk Analysis And Mapping

***Purpose:**

Award: Contract CT-FC-21-117. This award of contract is recommended to the highest qualified consultant in the amount of \$599,885.00 for a contract term of 09/01/20 to 08/31/22 for detailed risk analysis and map revision services. Administering Department: Regional Flood Control District.

***Procurement Method:**

Solicitation for Qualifications No. SFQ-PO-2000015 was conducted in accordance with A.R.S. § 34-603 and Pima County Board of Supervisors Policy D 29.1. Three (3) responsive statements of qualifications were received and evaluated by a five (5) member committee using qualifications and experience-based selection criteria. Based upon the evaluation of the respondents' written representations of their qualifications and necessary due diligence, a short list of three (3) respondents were invited to interviews. As a result of the combined scoring of the written statements of qualifications and interviews, the highest qualified consultant is recommended for award.

Attachments: Notice of Recommendation for Award and Contract.

***Program Goals/Predicted Outcomes:**

Multiple FEMA mapped floodplains in Altar and Avra Valleys are not accurately reflected on the current Flood Insurance Rate Maps (FIRMs). That basis for most of the current flood hazard mapped was developed in the 1960s and 1970s. Better data and floodplain modeling programs will produce more accurate flood risk and flood hazard maps. The goal of this project is to provide FEMA with flood risk map and floodplain work map products to republish the FIRMs to indicate current flood hazards.

***Public Benefit:**

More accurate flood risk map and flood hazard mapping data will lower future flood damages by regulating development to current flood hazards. The new data will be beneficial when designing public infrastructure.

***Metrics Available to Measure Performance:**

The project must meet FEMA Risk Map and floodplain work map requirements as outlined in the Mapping Activity Statement (MAS), associated with the grant, and incorporated into the contract. The MAS requires quarterly reporting and an independent review process to insure mapping accuracy and conformance to FEMA requirements.

***Retroactive:**

No

Contract / Award Information

Document Type: CT Department Code: FC Contract Number (i.e., 15-123): 21-117
Commencement Date: 09/01/20 Termination Date: 08/31/22 Prior Contract Number (Synergen/CMS): _____
☐ Expense Amount: \$* 599,885.00 ☐ Revenue Amount: \$ _____

*Funding Source(s) required: FEMA Grant

Funding from General Fund? ☐ Yes ☒ No If Yes \$ _____ % _____

Contract is fully or partially funded with Federal Funds? ☒ Yes ☐ No

If Yes, is the Contract to a vendor or subrecipient? Vendor

Were insurance or indemnity clauses modified? ☐ Yes ☒ No

If Yes, attach Risk's approval.

Vendor is using a Social Security Number? ☐ Yes ☒ No

If Yes, attach the required form per Administrative Procedure 22-10.

Amendment / Revised Award Information

Document Type: _____ Department Code: _____ Contract Number (i.e., 15-123): _____
Amendment No.: _____ AMS Version No.: _____
Commencement Date: _____ New Termination Date: _____

Prior Contract No. (Synergen/CMS): _____

☐ Expense or ☐ Revenue ☐ Increase ☐ Decrease Amount This Amendment: \$ _____

Is there revenue included? ☐ Yes ☐ No If Yes \$ _____

*Funding Source(s) required:

Funding from General Fund? ☐ Yes ☐ No If Yes \$ _____ % _____

Grant/Amendment Information (for grants acceptance and awards) ☐ Award ☐ Amendment

Document Type: _____ Department Code: _____ Grant Number (i.e., 15-123): _____

Commencement Date: _____ Termination Date: _____ Amendment Number: _____

☐ Match Amount: \$ _____ ☐ Revenue Amount: \$ _____

*All Funding Source(s) required:

*Match funding from General Fund? ☐ Yes ☐ No If Yes \$ _____ % _____

*Match funding from other sources? ☐ Yes ☐ No If Yes \$ _____ % _____

*Funding Source: _____

*If Federal funds are received, is funding coming directly from the Federal government or passed through other organization(s)? _____

Contact: **Keith E. Rogers**
Digitally signed by Keith E. Rogers
DN: cn=Keith E. Rogers, o.ou,
email=keith.rogers@pima.gov, c=US
Date: 2020.08.14 07:40:29 -0700

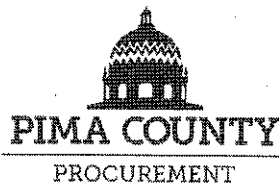
Terri Spencer
Digitally signed by Terri Spencer
DN: cn=Terri Spencer, o.ou,
email=terri.spencer@pima.gov, c=US
Date: 2020.08.14 12:07:13 -0700

Department: Procurement Mary Jo Furphy Telephone: 724-3542

Department Director Signature/Date: [Signature] 8/14/2020

Deputy County Administrator Signature/Date: [Signature] 8/17/2020

County Administrator Signature/Date: [Signature] 8/17/2020
(Required for Board Agenda/Addendum Items)



NOTICE OF RECOMMENDATION FOR AWARD

Date of Issue: August 7, 2020

The Pima County Procurement Department hereby issues formal notice to respondents to **Solicitation No. SFQ-PO-2000015 for Brawley And Black Wash Detailed Risk Analysis And Mapping** that the following listed respondent will be recommended for award as indicated below. The award action is scheduled to be performed by the Board of Directors on or after September 1, 2020.

Award is recommended to the most qualified Respondent.

AWARDEE NAME

JE Fuller / Hydrology & Geomorphology, Inc.

OTHER RESPONDENT NAMES

Kimley-Horn and Associates, Inc.
Stantec Consulting Services, Inc.

NOTE: Pursuant to A.R.S. §34-603(H), only the names of the firms on the final list may be disclosed.

Issued by: Keith E. Rogers, CPPB; Procurement Officer

Telephone Number: 520-724-3542

This notice is in compliance with Pima County Procurement Code §11.12.010(C) and §11.20.010(C).

Copy to: Pima County SBE via e-mail at SBE@pima.gov

PIMA COUNTY REGIONAL FLOOD CONTROL DISTRICT

PROJECT: BRAWLEY AND BLACK WASH DETAILED RISK ANALYSIS AND MAPPING

CONSULTANT: JE FULLER / HYDROLOGY AND GEOMORPHOLOGY, INC.
40 E HELEN ST
TUCSON, AZ 85705

CONTRACT NO.: CT-FC-21-117

AMOUNT: \$599,885.00

FUNDING: FEMA Grant

CONSULTANT SERVICES CONTRACT

THIS Contract is entered into between Pima County Regional Flood Control District, a special taxing District under A.R.S. Title 48, hereinafter called DISTRICT, and JE Fuller / Hydrology and Geomorphology, Inc, hereinafter called CONSULTANT, collectively referred to as the Parties.

W I T N E S S E T H

WHEREAS, DISTRICT requires the services of a CONSULTANT registered in the State of Arizona and qualified to provide detailed risk analysis and mapping services for the Brawley and Black Wash Detailed Risk Analysis and Mapping project; and,

WHEREAS, CONSULTANT is qualified and willing to provide such services; and

WHEREAS, based on CONSULTANT'S representations in response to Pima County Solicitation No. SFQ-PO-2000015, CONSULTANT was determined to be the most qualified for this Project, and

WHEREAS, CONSULTANT has proposed to perform the work at a price acceptable to DISTRICT.

NOW, THEREFORE, in consideration of the foregoing recitals and other valuable and good consideration the Parties agree as follows:

ARTICLE 1 – TERM AND EXTENSION/RENEWAL/CHANGES

This Contract as approved by the Board of Directors commences on September 1, 2020, and terminates on August 31, 2022, unless sooner terminated or further extended pursuant to the provisions of this Contract.

DISTRICT has the option to extend the Contract termination date for project completion. Any modification or extension of the Contract termination date will be by formal written amendment executed by the Parties. The Procurement Director or the DISTRICT Board of Directors, as required by the Pima County Procurement Code, must approve change orders to this Contract or the Scope of Services before CONSULTANT performs the work authorized by the change order.

ARTICLE 2 – SCOPE OF SERVICES

CONSULTANT agrees to provide Detailed Risk Analysis and Mapping for the Project for the DISTRICT as described in EXHIBIT "B" - SCOPE OF SERVICES (8 pages) and in EXHIBIT "D" – MAPPING ACTIVITY STATEMENT (42 pages), attached to this Contract.

ARTICLE 3 – COMPENSATION AND PAYMENT

In consideration of the services specified in this Contract, DISTRICT agrees to pay CONSULTANT Not to Exceed Five Hundred Ninety-Nine Thousand Eight Hundred Eighty-Five Dollars and Zero Cents (\$599,885.00). CONSULTANT'S fees will be as stated in **EXHIBIT "C" - CONSULTANT FEE PROPOSAL** (7 Pages), attached to this Contract. Hourly rates and all other rates included under this Contract will remain fixed throughout the term of the Contract. DISTRICT may consider adjustments to rates in connection with any extensions of the Contract term.

Unless otherwise agreed, CONSULTANT will submit invoices monthly. All invoices will be accompanied by a narrative description of the work performed during the period covered by the invoice, time accounting information, and an allocation of all direct costs, including reimbursable costs and SUBCONSULTANT charges, to the tasks identified in the Scope of Work for which those costs were incurred. The time accounting information should be sufficient to show the workers and hours worked by day for the period covered by the invoice. SUBCONSULTANT charges will be supported by appropriate documentation with each separate invoice submitted.

For the period of record retention required under Article 22, DISTRICT reserves the right to question any payment made under this article and to require reimbursement therefor by setoff or otherwise for payments determined to be improper or contrary to the Contract or law.

CONSULTANT will not perform work in excess of the Contract Amount without prior authorization by an amendment executed by DISTRICT. Work performed in excess of the Contract Amount without prior authorization by amendment is at CONSULTANT'S own risk.

This contract is funded wholly or partially by a Grant and is subject to the additional Federal requirements in **EXHIBIT "A" - Federal Provisions (3 pages)**. For this Contract, the Federal Granting Agency is the Federal Emergency Management Agency, U.S. Department of Homeland Security.

ARTICLE 4 – INSURANCE

The Insurance Requirements herein are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract. DISTRICT in no way warrants that the minimum limits contained herein are sufficient to protect the CONSULTANT from liabilities that arise out of the performance of the work under this Contract. CONSULTANT'S insurance will be placed with companies licensed in the State of Arizona and insureds will have an "A.M. Best" rating of not less than A- VII.

4.1 Minimum Scope and Limits of Insurance:

CONSULTANT will procure and maintain, until all of their obligations have been discharged, coverage with limits of liability not less than those stated below.

4.1.1 General Liability (CGL) – Occurrence Form with limits of \$2,000,000 Each Occurrence and \$2,000,000 General Aggregate. Policy will include bodily injury, property damage, and broad form contractual liability coverage.

4.1.2 Automobile Liability – Bodily Injury and Property Damage for any owned, hired, and/or non-owned automobiles used in the performance of this Contract with a Combined Single Limit (CSL) of \$1,000,000.

4.1.3 Workers' Compensation and Employers' Liability - Statutory requirements and benefits. Coverage is compulsory for employers of one or more employees. Employer's Liability - \$1,000,000.

Note: The Workers' Compensation requirement will not apply to a CONSULTANT that is exempt under A.R.S. § 23-901, and when such CONSULTANT executes the appropriate DISTRICT Sole Proprietor or Independent CONSULTANT waiver form.

4.1.4 Professional Liability (Errors and Omissions) Insurance – This insurance is required when soliciting work from licensed professionals. The policy limits will be not less than \$2,000,000 Each Claim and \$2,000,000 Annual Aggregate. The policy will cover professional misconduct or negligent acts for those positions defined in the Scope of Work of this contract.

In the event that the Professional Liability insurance required by this Contract is written on a claims-made basis, CONSULTANT warrants that any retroactive date under the policy will precede the effective date of this Contract and, either continuous coverage will be maintained, or an extended discovery period will be exercised, for a period of two (2) years beginning at the time work under this Contract is completed.

4.2 Additional Insurance Requirements:

The policies will include, or be endorsed to include, as required by this written agreement, the following provisions:

4.2.1 Additional Insured Endorsement: The General Liability and Business Automobile Liability Policies will each be endorsed to include DISTRICT and the Federal Emergency Management Administration (FEMA), their departments, districts, boards, commissions, officers, officials, agents, and employees as additional insured's with respect to liability arising out of the activities performed by or on behalf of the CONSULTANT.

4.2.2 Subrogation Endorsement: The General Liability, Business Automobile Liability and Workers' Compensation Policies will each contain a waiver of subrogation endorsement in favor of DISTRICT, and its departments, districts, boards, commissions, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the CONSULTANT.

4.2.3 Primary Insurance Endorsement: The CONSULTANT'S policies will stipulate that the insurance afforded the CONSULTANT will be primary and that any insurance carried by the Department, its agents, officials, employees or DISTRICT will be excess and not contributory insurance, as provided by A.R.S. § 41-621 (E).

4.2.4 Insurance provided by the CONSULTANT will not limit the CONSULTANT'S liability assumed under the indemnification provisions of this Contract.

4.3 Notice of Cancellation:

Each required Insurance policy must provide, and certificates specify, that DISTRICT will receive not less than thirty (30) days advance written notice of any policy cancellation, except 10-days prior notice is sufficient when the cancellation is for non-payments of a premium. Notice shall include the DISTRICT project or contract number and project description.

4.4 Verification of Coverage:

CONSULTANT will furnish DISTRICT with certificates of insurance as required by this Contract. An authorized representative of the insurer will sign the certificates.

4.4.1 All certificates and endorsements, as required by this written agreement, are to be received and approved by DISTRICT before work commences. Each insurance policy required by this Contract must be in effect at, or prior to, commencement of work under this Contract. Failure to maintain the insurance coverages or policies as required by this Contract, or to provide evidence of renewal, is a material breach of contract.

4.4.2 All certificates required by this Contract will be sent directly to the Department. DISTRICT project or contract number and project description will be noted on the certificate of insurance. DISTRICT reserves the right to require complete copies of all insurance policies required by this Contract at any time.

4.5 Approval and Modifications:

DISTRICT Risk Manager may approve a modification of the Insurance Requirements without the necessity of a formal Contract amendment, but the approval must be in writing. Neither the DISTRICT'S failure to obtain a required insurance certificate or endorsement, the DISTRICT'S failure to object to a non-complying certificate or endorsement, or the DISTRICT'S receipt of any other information from the CONSULTANT, its insurance broker(s) and /or insurer(s), constitutes a waiver of any of the Insurance Requirements.

ARTICLE 5 – INDEMNIFICATION

To the fullest extent permitted by law, CONSULTANT indemnifies and holds harmless DISTRICT and FEMA, their officers, employees and agents from and against any and all suits, actions, legal administrative proceedings, claims or demands and costs attendant thereto, including reasonable attorney's fees and court costs, to the extent caused by any negligent, reckless or intentionally wrongful act or omission of CONSULTANT, its agents, employees or anyone acting under its direction or control or on its behalf in connection with performance of this Contract. The obligations under this Article do not extend to the negligence of DISTRICT, its agents, employees or indemnities.

All warranty and indemnification obligations under this Contract survive expiration or termination of the Contract, unless expressly provided otherwise. Any indemnification provision inconsistent with A.R.S. § 34-226 is, in all cases, not void, but will be interpreted and applied as if it were consistent with A.R.S. § 34-226.

Upon request, CONSULTANT may fully indemnify and hold harmless any private property owner granting a right of entry to CONSULTANT for the purpose of completing the project.

ARTICLE 6 – COMPLIANCE WITH LAWS

CONSULTANT will comply with all applicable federal, state, and local laws, rules, regulations, standards and Executive Orders, without limitation to those designated within this Contract. The laws and regulations of the State of Arizona govern the rights of the Parties, the performance of this Contract, and any disputes hereunder. Any action relating to this Contract will be brought and maintained in Superior Court in Pima County. Any changes in the governing laws, rules, and regulations during the term of this Contract apply, but do not require an amendment.

ARTICLE 7 – STATUS OF CONSULTANT

The status of the CONSULTANT is that of an independent contractor and CONSULTANT is not considered an employee of Pima County and is not entitled to receive any of the fringe benefits associated with regular employment, and is not subject to the provisions of the merit system. CONSULTANT is responsible for payment of all Federal, State and Local taxes associated with the compensation received by CONSULTANT from DISTRICT. CONSULTANT is responsible for program development and operation without supervision by DISTRICT.

ARTICLE 8 – CONSULTANT'S PERFORMANCE

CONSULTANT will perform the work in accordance with the terms of the Contract and with the degree of care and skill required of any similarly situated Arizona registrant. CONSULTANT will employ suitably trained and skilled professional personnel to perform all required services under this Contract. Prior to changing any key personnel, especially those key personnel DISTRICT relied upon in making this Contract, CONSULTANT will obtain the approval of DISTRICT.

CONSULTANT is responsible for the professional quality, technical accuracy, timely completion, and the coordination of all its effort and other services furnished by CONSULTANT under this Agreement. Without additional compensation, CONSULTANT will correct or revise any errors, omission, or other deficiencies in all products of its efforts and other services provided. This includes resolving any deficiencies arising out of the acts or omissions of CONSULTANT found during or after the course of the services performed by or for CONSULTANT under this Agreement, regardless of DISTRICT having knowledge of or condoning or accepting the products or the services. Correction of such deficiencies will be at no cost to DISTRICT.

ARTICLE 9 – NON-WAIVER

The failure of DISTRICT to insist in any one or more instances upon full and complete compliance with any of the terms and provisions of this Contract or to take any action permitted as a result thereof is not a waiver or relinquishment of the right to insist upon full and complete performance of the same or any other covenant or condition either in the past or in the future. The acceptance by either party of sums less than may be due and owing it at any time is not an accord and satisfaction.

ARTICLE 10 – SUBCONSULTANT

CONSULTANT is fully responsible for all acts and omissions of its SUBCONSULTANT and of persons directly or indirectly employed by SUBCONSULTANT and of persons for whose acts any of them may be liable to the same extent that CONSULTANT is responsible for the acts and omissions of persons directly employed by it. Nothing in this Contract creates any obligation on the part of DISTRICT to pay or see to the payment of any money due any SUBCONSULTANT, except as may be required by law.

ARTICLE 11 – NON-ASSIGNMENT

CONSULTANT may not assign its rights to this Contract in whole or in part, without prior written approval of DISTRICT. DISTRICT may withhold consent to assignment at its sole discretion, provided that DISTRICT will not unreasonably withhold such approval.

ARTICLE 12 – NON-DISCRIMINATION

CONSULTANT will comply with all provisions and requirements of Arizona Executive Order 2009-09 which is hereby incorporated into this Contract as if set forth in full herein **including flow down of all provisions and requirements to any SUBCONSULTANTS**. During the performance of this Contract, CONSULTANT will not discriminate against any employee, client or any other individual in any way because of that person's age, race, creed, color, religion, sex, disability or national origin.

ARTICLE 13 – AMERICANS WITH DISABILITIES ACT

CONSULTANT will comply with all applicable provisions of the Americans with Disabilities Act (Public Law 101-336, 42 U.S.C. 12101-12213) and all applicable federal regulations under the Act, including 28 CFR Parts 35 and 36. If CONSULTANT is carrying out government programs or services on behalf of DISTRICT, then CONSULTANT will maintain accessibility to the program to the same extent and degree that would be required of the DISTRICT under 28 CFR Sections 35.130, 35.133, 35.149 through 35.151, 35.160, 35.161 and 35.163. Failure to do so could result in the termination of this Agreement.

ARTICLE 14 – CANCELLATION FOR CONFLICT OF INTEREST

This Contract is subject to the provisions of A.R.S. §38-511 which provides in pertinent part:

"The state, its political subdivisions or any department of either may, within three years after its execution, cancel any contract, without penalty or further obligation, made by the state, its political subdivisions, or any of the departments or agencies of either if any person significantly involved in initiating, negotiating, securing, drafting or creating the contract on behalf of the state, its political subdivisions or any of the departments or agencies of either is, at any time, while the contract or any extension of the contract is in effect, an employee or agent of any other party to the contract in any capacity or a consultant to any other party to the contract with respect to the subject matter of the contract."

ARTICLE 15 – TERMINATION OF CONTRACT FOR DEFAULT

- A. Upon a failure by CONSULTANT to cure a default under this Contract within ten (10) days of receipt of notice from DISTRICT of the default, DISTRICT may, in its sole discretion, terminate this Contract for default by written notice to CONSULTANT. In this event, DISTRICT may take over the work and complete it by Contract or otherwise. The CONSULTANT and its sureties, if any, will be liable for any damage to the DISTRICT resulting from CONSULTANT'S default, including any increased costs incurred by DISTRICT in completing the work.
- B. The occurrence of any of the following constitutes an event of default:
 - 1. Abandonment of or refusal or failure to prosecute the work or any separable part thereof with the diligence that will insure completion within the time specified in this Contract, including any extension, or a failure to complete the work (or the separable part of the work) within the specified time;
 - 2. Persistent or repeated refusal or failure to supply enough properly skilled workers or materials to perform the work on schedule;
 - 3. Failure to provide competent supervision at the site;

4. Failure to take down, rebuild, repair, alter or amend any defective or deficient work, or remove any defective or deficient Material
 5. Failure to make prompt payment to subconsultants or suppliers for material or labor;
 6. Loss of CONSULTANT'S business or other required license or authority, or any curtailment or cessation for any reason of business or business operations that would substantially impair or preclude CONSULTANT'S performance of this Contract;
 7. Disregard of laws, ordinances, or the instructions of DISTRICT or its representatives, or any otherwise substantial violation of any provision of the Contract; or
 8. If a voluntary or involuntary action for bankruptcy is commenced with respect to CONSULTANT, or CONSULTANT becomes insolvent, makes a general assignment for the benefit of creditors, or has a receiver or liquidator appointed in respect of its assets.
- C. In the event of a termination for default:
1. All finished and unfinished as-builts, shop drawings, documents, data, studies, surveys, drawings, photographs, reports and other information in whatever form, including electronic, acquired or prepared by CONSULTANT for this project become DISTRICT'S property and will be delivered to DISTRICT not later than five (5) business days after the effective date of the termination;
 2. DISTRICT may withhold payments to CONSULTANT arising under this or any other Contract for the purpose of set-off until such time as the exact amount of damage due DISTRICT from CONSULTANT is determined; and
 3. Subject to the immediately preceding subparagraph (2), DISTRICT'S liability to CONSULTANT will not exceed the reasonable value of work satisfactorily performed prior to the date of termination for which payment has not been previously made.
- D. The Contract will not be terminated for default nor CONSULTANT charged with damages under this Article, if—
1. Excepting item (8) in paragraph B above, the event of default or delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the CONSULTANT. Examples of such causes include—
 - (i) Acts of God or of the public enemy,
 - (ii) Acts of DISTRICT in either its sovereign or contractual capacity,
 - (iii) Acts of another consultant in the performance of a Contract with the DISTRICT,
 - (iv) Fires,
 - (v) Floods,
 - (vi) Epidemics,
 - (vii) Quarantine restrictions,
 - (viii) Strikes,
 - (ix) Freight embargoes,
 - (x) Unusually severe weather, or
 - (xi) Delays of subconsultants or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both CONSULTANT and the subconsultants or suppliers; and
 2. CONSULTANT, within three (3) days from the beginning of any event of default or delay (unless extended by DISTRICT), notifies DISTRICT in writing of the cause(s) therefor. In this circumstance, DISTRICT will ascertain the facts and the extent of the resulting delay. If, in the judgment of DISTRICT, the findings warrant such action, DISTRICT may extend the time for completing the work.
- E. For the purposes of paragraph A above, "receipt of notice" includes receipt by hand by CONSULTANT'S onsite project manager, facsimile transmission, or under the Notices clause of this Contract.
- F. If, after termination of the Contract for default, it is determined that CONSULTANT was not in default, or that the delay was excusable, the rights and obligations of the Parties will be the same as if the termination had been issued for the convenience of DISTRICT.
- G. The rights and remedies of DISTRICT in this Article are cumulative and in addition to any other rights and remedies provided by law or under this Contract.

ARTICLE 16 – TERMINATION FOR CONVENIENCE OF DISTRICT

DISTRICT may terminate this Contract at any time by giving written notice to CONSULTANT of such termination and specifying the effective date thereof, at least fifteen (15) days before the effective date of such termination. In that event, all finished or unfinished documents and other materials will, at the option of the DISTRICT, become its property. If DISTRICT terminates the Contract as provided herein, DISTRICT will pay CONSULTANT an amount based on the time and expenses incurred by CONSULTANT prior to the termination date. However, DISTRICT will make no payment for anticipated profit on unperformed services.

ARTICLE 17 – NON-APPROPRIATION OF FUNDS

Notwithstanding any other provision in this Contract, this Contract may be terminated if for any reason the Pima County Regional Flood Control District Board of Directors does not appropriate sufficient monies for the purpose of maintaining this Contract. In the event of such termination, DISTRICT will have no further obligation to CONSULTANT, other than payment for services rendered prior to termination.

ARTICLE 18 – NOTICES

Any notice required or permitted to be given under this Contract will be in writing and will be served by delivery or by certified mail upon the other party as follows:

DISTRICT:

Suzanne Shields, Director
Regional Flood Control District
Public Works Building, 9th Floor
201 N Stone
Tucson, AZ 85701
Tel: (520) 724-4600
Fax: (520) 724-4621

CONSULTANT:

John Wallace, Vice President
JE Fuller / Hydrology And Geomorphology, Inc.
40 E Helen St.
Tucson, AZ 85705
Tel: (520) 623-3112
Fax: (520) 623-3130

ARTICLE 19 – OTHER DOCUMENTS

CONSULTANT and DISTRICT in entering into this Contract have relied upon information provided in CONSULTANT'S response to a request for fee proposal. These documents are hereby incorporated into and made a part of this Contract as if set forth in full herein, to the extent not inconsistent with the provisions of this Contract. CONSULTANT will perform services in accordance with the terms of the Contract and at a level of care consistent with prevailing industry standards. In the event any provision of this Contract is inconsistent with those of any other document, the Contract provisions will prevail.

ARTICLE 20 – REMEDIES

Either party may pursue any remedies provided by law for the breach of this Contract, provided, however, that the procedures in ARTICLE 25 are first exhausted. No right or remedy is intended to be exclusive of any other right or remedy and each is cumulative and in addition to any other right or remedy existing at law or at equity or by virtue of this Contract.

ARTICLE 21 – SEVERABILITY

Each provision of this Contract stands alone, and any provision of this Contract found to be prohibited by law will be ineffective to the extent of such prohibition without invalidating the remainder of this Contract.

ARTICLE 22 – BOOKS AND RECORDS

CONSULTANT will keep and maintain proper and complete books, records and accounts, which will be open at all reasonable times for inspection and audit by duly authorized representatives of DISTRICT.

CONSULTANT will retain all records relating to this Contract at least five (5) years after its termination or cancellation or until any related pending proceeding or litigation has been closed, if later. Alternatively, CONSULTANT may, at its option, deliver such records to DISTRICT for retention.

ARTICLE 23 – DELAYS

Neither party hereto will be in default in the performance of its obligations hereunder to the extent that the performance of any such obligation is prevented or delayed by any cause, existing or future, which is beyond the reasonable control of such party.

ARTICLE 24 – DISPUTES

In the event of a dispute between DISTRICT and CONSULTANT regarding any part of this Contract or the Parties' obligations or performance hereunder, either Party may request a special meeting between their respective representatives to resolve the dispute. If the dispute remains unresolved, then either Party may request escalation of the issue to a meeting between the Director of the Pima County Regional Flood Control District and CONSULTANT'S counterpart official, such meeting to be held within one week of the request, unless otherwise agreed. If the dispute is still not resolved after that meeting, then either Party may pursue such remedy or remedies as may be available to them under the laws of the State of Arizona.

The Parties will continue performance of their respective obligations under this Contract notwithstanding the existence of any dispute.

ARTICLE 25 – OWNERSHIP OF DOCUMENTS

All original drawings, field data, estimates, field notes, plans, specifications, documents, reports, calculations, and other information developed by CONSULTANT under this Contract vest in and become the property of DISTRICT and will be delivered to DISTRICT upon completion or termination of the services, but CONSULTANT may retain and use copies thereof. DISTRICT agrees that the material will not be used for any project other than the project for which it was designed without the express permission of CONSULTANT.

ARTICLE 26 – PUBLIC INFORMATION

Pursuant to A.R.S. § 39-121 et seq., and A.R.S. §§ 34-603(H), 604(H), in the case of construction or Architectural and Engineering services procured under A.R.S. Title 34, Chapter 6, all information submitted by CONSULTANT in any way related to this Contract, including, but not limited to, pricing, product specifications, work plans, and any supporting data becomes public information and upon request, is subject to release and/or review by the general public including competitors.

Any information submitted related to this Contract that CONSULTANT believes constitutes proprietary, trade secret or otherwise confidential information must be appropriately and prominently marked as CONFIDENTIAL prior to submittal to DISTRICT and be accompanied by an index specifically identifying and describing the general contents of each page so marked. The index is a public record and should not include any information considered confidential.

Notwithstanding the above provisions, in the event records marked CONFIDENTIAL are requested for public release pursuant to A.R.S. § 39-121 et seq., DISTRICT will release records marked CONFIDENTIAL ten (10) business days after the date of notice to CONSULTANT of the request for release, unless CONSULTANT has, within the ten (10) day period, secured a protective order, injunctive relief or other appropriate order from a court of competent jurisdiction, enjoining the release of the records. For the purposes of this paragraph, the day of the request for release is not counted in the time calculation. CONSULTANT will be notified of any request for such release on the same day of the request for public release or as soon thereafter as practicable.

DISTRICT will not, under any circumstances, be responsible for securing a protective order or other relief enjoining the release of records marked CONFIDENTIAL, nor will DISTRICT be in any way financially responsible for any costs associated with securing such an order.

ARTICLE 27 – LEGAL ARIZONA WORKERS ACT COMPLIANCE

CONSULTANT will at all times during the term of this Contract comply with all federal immigration laws applicable to CONSULTANT'S employment of its employees, and with the requirements of A.R.S. § 23-214 (A) (together the "State and Federal Immigration Laws"). CONSULTANT will further ensure that each SUBCONSULTANT who performs any work for CONSULTANT under this Contract likewise complies with the State and Federal Immigration Laws.

DISTRICT has the right at any time to inspect the books and records of CONSULTANT and any SUBCONSULTANT in order to verify such party's compliance with the State and Federal Immigration Laws.

Any breach of CONSULTANT'S or any SUBCONSULTANT'S warranty of compliance with the State and Federal Immigration Laws, or of any other provision of this section, is a material breach of this Contract subjecting CONSULTANT to penalties up to and including suspension or termination of this Contract. If the breach is by a SUBCONSULTANT, and the subcontract is suspended or terminated as a result, CONSULTANT will be required to take such steps as may be necessary to either self-perform the services that would have been provided under the subcontract or retain a replacement SUBCONSULTANT (subject to DISTRICT approval if DBE preferences apply), as soon as possible so as not to delay project completion.

CONSULTANT will advise each SUBCONSULTANT of DISTRICT'S rights, and the SUBCONSULTANT'S obligations, under this Article by including a provision in each subcontract substantially in the following form:

"SUBCONSULTANT hereby warrants that it will at all times during the term of this contract comply with all federal immigration laws applicable to SUBCONSULTANT's employees, and with the requirements of A.R.S. § 23-214 (A). SUBCONSULTANT further agrees that DISTRICT may inspect the SUBCONSULTANT's books and records to insure that SUBCONSULTANT is in compliance with these requirements. Any breach of this paragraph by SUBCONSULTANT is a material breach of this contract subjecting SUBCONSULTANT to penalties up to and including suspension or termination of this contract."

Any additional costs attributable directly or indirectly to remedial action under this Article is the responsibility of CONSULTANT. In the event that remedial action under this Article results in delay to one or more tasks on the critical path of CONSULTANT'S approved construction or critical milestones schedule, such period of delay will be excusable delay for which CONSULTANT will be entitled to an extension of time, but not costs.

ARTICLE 28 – ISRAEL BOYCOTT CERTIFICATION:

Pursuant to A.R.S. § 35-393.01, if Contractor engages in for-profit activity and has 10 or more employees, and if this Contract has a value of \$100,000.00 or more, Contractor certifies it is not currently engaged in, and agrees for the duration of this Contract to not engage in, a boycott of goods or services from Israel. This certification does not apply to a boycott prohibited by 50 U.S.C. § 4842 or a regulation issued pursuant to 50 U.S.C. § 4842.

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ARTICLE 29 – ENTIRE AGREEMENT

This document constitutes the entire agreement between the Parties pertaining to the subject matter hereof, and all prior or contemporaneous agreements and understandings, oral or written, are hereby superseded and merged herein. This Contract may be modified, amended, altered or extended only by a written Amendment signed by the Parties.

IN WITNESS WHEREOF, the Parties have affixed their signatures to this Contract on the dates written below.

APPROVED:

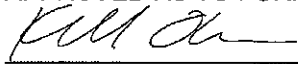
Chairman, Board of Directors

Date

ATTEST:

Clerk of the Board

APPROVED AS TO FORM:



Deputy County Attorney

Kell Olson

Name (Please Print)

8/13/2020

Date

CONSULTANT:



Signature

John M. Wallace, Vice President

Name and Title (Please Print)

8/17/2020

Date

EXHIBIT "A" – FEDERAL PROVISIONS (3 pages)

ARTICLE 1 – DEBARRED OR SUSPENDED SUBCONSULTANTS

CONSULTANT shall not subcontract, and shall ensure that no subcontracts are awarded at any tier, to any individual, firm, partnership, joint venture, or any other entity regardless of the form of business organization, that is listed in the System for Award Management (SAM), at <https://www.sam.gov> with an active exclusion. This provision shall be included in all subcontracts and all subconsultants will be required to include this provision in their subcontracts at every tier. CONSULTANT shall immediately notify DISTRICT if any subconsultant is suspended or debarred after award of the subcontract.

ARTICLE 2 – SMALL DISADVANTAGED BUSINESS ENTERPRISES AND WOMEN-OWNED BUSINESSES

If performance of this Contract will require subcontracting, then:

1. CONSULTANT will take all necessary affirmative steps to assure that minority firms, women's business enterprises, and labor surplus area firms are used when possible.
2. Affirmative steps shall include:
 - (i) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
 - (ii) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
 - (iii) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises;
 - (iv) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises;
 - (v) Using the services and assistance of the Small Business Administration, the Minority Business Development Agency of the Department of Commerce, and the County's Business Enterprise Program.

ARTICLE 3 – ACCESS TO RECORDS AND RECORDS RETENTION

1. **Records to be Kept.** Records shall be maintained in accordance with requirements prescribed by the granting agency, the state agency, or DISTRICT with respect to all matters covered by this contract. Except as otherwise authorized, such records shall be maintained for a period of five (5) years after receipt of the final payment under this contract. In the event of a conflict between or among the requirements of the DISTRICT, state agency or granting agency, the most stringent will govern.
2. **Documentation of Costs.** All costs shall be supported by properly executed payrolls, time records, invoices, contracts, vouchers, orders, or other accounting documents. All documents pertaining in whole or in part to this contract shall be clearly identified and readily accessible.
3. **Inspection of Records.** At any time during normal business hours and as often as DISTRICT, the granting agency, the state agency, and/or the Comptroller General of the United States may deem necessary, the Consultant shall make available to DISTRICT, the granting agency or state agency and/or representatives of the Comptroller General for examination all of its records, with respect to all matters covered by this contract, and will permit them to audit, examine and make excerpts or transcripts from such records including contracts, invoices, materials, payrolls, records of personnel, conditions of employment and any other data relating to matters covered by this contract.

ARTICLE 4 – CLEAN AIR AND CLEAN WATER COMPLIANCE

If this Contract exceeds \$100,000, then:

In compliance with Section 306 of the Clean Air Act, as amended, (42 U.S.C. 1857(h)), Section 508 of the Clean Water Act, as amended, (33 U.S.C. 1368), Executive Order 11738, and the Regulations (40 CFR, part 15) of the Environmental Protection Agency with respect thereto, CONSULTANT agrees, with regard to this Contract and all subcontracts exceeding \$100,000, that:

1. Any facility to be utilized in the performance of this contract or any subcontract shall not be a facility listed on the EPA List of Violating Facilities pursuant to 40 CFR 15.20.
2. They will comply with all requirements of Section 306 of the Clean Air Act, as amended, and Section 508 of the Clean Water Act, as amended, and all regulations and guidelines issued thereunder.
3. They will promptly notify DISTRICT of any notification received from the EPA Office of Federal Activities, indicating that a facility utilized or to be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
4. They will include the provisions of paragraph 1 through 4 of this subpart in every nonexempt subcontract, and take such action as the DISTRICT, State or Federal Government may direct as a means of enforcing such provisions.

ARTICLE 5 - COPYRIGHT

The Federal awarding agency reserves a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use, for Federal Government purposes:

1. The copyright in any work developed under a grant, subgrant, or contract under a grant or subgrant; and
2. Any rights of copyright to which a grantee, subgrantee or a Consultant purchases ownership with grant support.

ARTICLE 6 - PROHIBITION AGAINST LOBBYING

CONSULTANT certifies, to the best of his or her knowledge and belief, that:

1. No federally appropriated funds have been paid or will be paid, by or on behalf of the Consultant, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal loan, the entering into of any cooperative agreement, or the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan or cooperative agreement.
2. If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The Consultant shall require that the language of this certification be included in the award documents for all sub-awards at all tiers including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements.
4. This certification is a material representation of fact upon which reliance was placed when this contract was made or entered into. Agreement to this certification is a prerequisite for making or entering into this contract imposed by Section 1352, title 31, U.S. Code. Any person or agency that makes an expenditure prohibited by this section is subject to a civil penalty from \$10,000 up to \$100,000 for each failure. This penalty also applies to any person or agency that fails to submit or amend the disclosure form (LLL), when required. Failure to submit the required certification may result in payment under this contract being delayed or denied.

ARTICLE 7 - EQUAL EMPLOYMENT OPPORTUNITY

CONSULTANT shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR Chapter 60).

ARTICLE 8 - COPELAND ACT REQUIREMENTS

CONSULTANT shall comply the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in the Department of Labor Regulations (29 CFR Part 3), which are hereby incorporated by reference in this Contract.

ARTICLE 9 – RIGHTS IN DATA AND PATENT RIGHTS (OWNERSHIP AND PROPRIETARY INTEREST)

DISTRICT shall have exclusive ownership of, all proprietary interest in, and the right to full and exclusive possession of all information, materials, and documents discovered or produced by Consultant pursuant to the terms of this Contract, including but not limited to reports, memoranda or letters concerning the research and reporting tasks of this Contract.

ARTICLE 10 – DAVIS BACON WAGE RATES

The Davis-Bacon wage rates are not applicable to this program. However, if you use grant funds in conjunction with other federal programs, Davis-Bacon requirements may apply to the extent required under the other federal programs.

END OF EXHIBIT A

EXHIBIT "B" - SCOPE OF SERVICES
(8 Pages)

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August 6, 2020

Terry Hendricks
Pima County Regional Flood Control District
201 N. Stone Ave, 9th Floor
Tucson, AZ 85701

RE: Pima County SFQ-PO-2000015 – Brawley and Black Wash Detailed Risk Analysis and Mapping
Scope of Services and Fee Estimate

Dear Terry:

JE Fuller/Hydrology & Geomorphology (JE Fuller) is pleased to provide the attached scope of services and fee estimate for the referenced project. The scope of services is structured following the tasks in the Mapping Activity Statement (MAS) per our previous coordination. The fee estimate is structured to provide estimates for each task outlined in the scope of services. In addition, we have included hourly rate schedules for both JE Fuller and our subconsultant CMG Drainage Engineering.

Sincerely,

John M. Wallace, P.E., CFM
Vice President, JE Fuller

Attachments (page #s do not include header sheets):

1. Scope of Services (5 pages)
2. Fee Estimate (1 page)
3. JE Fuller rate schedule (1 page)
4. CMG Drainage Engineering rate schedule (1 page)

Pima County SFQ-PO-2000015
Brawley and Black Wash
Detailed Risk Analysis and Mapping

Scope of Services

Prepared by JE Fuller/Hydrology & Geomorphology

August 6, 2020

Background

The Brawley and Black Wash Detail Risk Analysis and Mapping Project is part of a Cooperative Technical Partnership (CTP) grant between the Federal Emergency Managing Agency (FEMA) and the Pima County Regional Flood Control District (District). This Scope of Services is in addition to the Scope of Services found in the attached Mapping Activity Statement (MAS, Exhibit B) specific to this project found in sections 1.1.2 through 1.1.2.8 (MAS pages 5-10).

The purpose of this project is to develop Flood Risk Data and redefine the Special Flood Hazard Areas for the Altar, Black, Blanco, Brawley, East Branch Brawley, Los Robles and West Robles Washes as show on Flood Insurance Rate Maps (FIRMs) panels 04019C 1005, 1010, 1015, 1020, 1040, 1605, 1610, 1615, 1620, 1650, 2225, 2240, 2245, 2250, 2805, and 2810.

The Floodplains to be re-mapped are Altar, Black, Blanco, Brawley, East Branch Brawley, Los Robles and West Robles Washes. The approximate limits of the project are shown on Figure 1.

For purposes of this scope of services, the Project Manager is the Pima County Regional Flood Control District assigned project manager and the Study Contractor is JE Fuller/Hydrology and Geomorphology, Inc.

The Brawley and Black Wash Detailed Risk Analysis and Mapping will include the following tasks:

Task 1 – Project Management

The Project Manager and Study Contractor will participate in the active process of planning, organizing, and managing resources towards the successful accomplishment of the work effort to complete the project.

The Study Contractor shall be responsible for taking notes during project milestone meetings and submitting a summary of the meeting note to the Project Manager for review and approval.

The Study Contractor will also assist the District in preparing for and attending up to two Open house meetings to share with the public the results of the study. The Study Contractor will also provide data as requested by the Project Manager for the development of an internet website to assist the District with public outreach.

Task 2 – Acquisition and Development of Topographic Data

The Study Contractor shall use CTP provided LiDAR and aerial photographic data for the hydraulic analyses. Accuracy for the topographic data shall be evaluated based on the current FEMA requirements for flood hazard study level of detail.

Deliverables

- Applicable mass points and breakline data,
- Applicable gridded digital elevation model data,

- Other supporting files consistent with FEMA Data Capture Standards (DCS),
- Metadata file complying with the NFIP Metadata Profiles Specifications, and
- Topographic data update to the National Digital Elevation Program (NDEP).

This task will also include the following data gathering and research;

- The Study Contractor shall research and gather existing reports including but not limited to; Studies conducted by or for the Pima County Regional Flood Control District, Stream gage data, Flood Insurance Studies, USGS Reports and FIRM data.
- It is assumed that these data will be collected in digital form, but that where digital data are not available, the Study Contractor shall collect the data in paper form and scan it so that the data will be available as .pdf or other appropriate digital form for future use.
- The Study Contractor will research and obtain historic flood data such as observed flood depths and newspaper articles to document past flooding and provide a map indicating problem areas identified by any flood data obtained.
- Gather appropriate spatial data on existing conditions including:
 - As-built plans for Major infrastructure such as bridges.
 - Vegetation and land use mapping
- Identify data gaps: Study Contractor shall identify data gaps that would prevent the Study Contractor from preparing hydrologic and hydraulic mapping consistent with FEMA's guidelines for Risk Map Products and Flood Hazard Mapping.
- Fill topographic data gaps through Survey.
- The Study Contractor shall identify all rights-of-entry needs and coordinate with the District to obtain the necessary rights-of-entry.

Task 3 – Prepare Basemap

The basemap preparation activities for floodplain mapping consist of obtaining and formatting the digital basemap (raster or vector) for the project. Activities also include the review of the basemap and obtaining the necessary documentation/verification so basemap data source(s) may be used and distributed by FEMA. The Study Contractor shall prepare and provide the digital basemap, which may include, but not limited to, the following:

- Obtain digital files (raster or vector) of the basemap data from the CTP to ensure that the FEMA Geospatial Data Coordination Policy and Implementation Guide are followed. A review of any FEMA Region IX discovery products shall be conducted to ensure the basemap product is compatible with FEMA Region IX;
- Secure the necessary permission from the basemap source to allow FEMA's use and distribution of hardcopy and digital map products using the digital basemap, free of charge;
- Review and supplement the content of the acquired basemap to comply with FEMA standards;
- For the basemap components that have a mandatory data structure, convert the basemap data to the format required by FEMA standards, and
- Verify that the digital data meets the minimum standards and specifications that FEMA requires for FIRM production.

Task 4 – Develop Hydrologic Data

The hydrology for the watershed consists of a patchwork of studies for individual LOMRs. The underlying hydrologic values outside those LOMRs is dated. Many of the major watercourses have interconnected and braided flow corridors. New hydrologic models for FEMA mapped and named watercourses is needed.

Deliverables

- The Study Contractor is to develop hydrologic modeling to reflect the flood flow frequencies required by Risk Map and FIRM production standards,
- A separate report on the hydrologic modeling,
- The digital model and watershed workmaps are to be provided to the CTP and FEMA.
- Hydrographs of the 0.2, 1, 2, 4, and 10 percent chance flood events are to be provided to the CTP at the major concentration points.
- QA/QC reports will be supplied to CTP and FEMA by the Project Manager

Task 5 – Develop Hydraulic Data

The Study Contractor will perform hydraulic analyses of the study area using FLO-2D (FEMA approved Pro version) for hydraulic modeling for the storm return event described in Task 4. Modeling results will be provided in FLO-2D output files and flood depth grid format for use in developing additional Risk MAP Products. It is anticipated that multiple models, depending on grid size, will be required to cover the entire project area. The Study Contractor will submit model input and output files, and depth and velocity data in GIS shapefiles to the CTP and upload the data into the MIP.

The Study Contractor may use the Corps' HEC-RAS program to complete this task instead of the FLO-2D program if the Project Manager pre-approves the modeling parameterizations and assumptions.

Deliverables

- Digital copies of all hydraulic modeling (input and output) files;
- Applicable modeling input and output data and GIS layers;
- Metadata file complying with the NFIP Metadata Profile Specifications;
- Digital versions of draft text for inclusion in the FIS report;
- Digital versions of all backup data used in the analyses including work maps; and
- Raster data and/or shapefile data.
- QA/QC reports will be supplied to CTP and FEMA by the Project Manager

Task 6 – Development of Non-Regulatory Products

Risk assessment data and analyses are defined as processes for analyzing or evaluating the risk associated with a hazard, and using that information to make informed decisions on the appropriate ways to reduce the impacts of the hazard on people and property. As part of the Risk MAP program, non-regulatory Flood Risk Products shall be developed for the study area. The Study Contractor will develop depth grid and velocity grid mapping for the study area for the

0.2, 1,2,4, and 10 percent annual chance storms, and this data will be provided to the CTP.

Deliverables

- Depth and Analysis Grids dataset, including:
 - Applicable multi-frequency (0.2, 1, 2,4, and 10 percent annual chance) flood depth, and flow velocity grids.

Task 7 – Perform Floodplain Mapping

In addition to the flow depth grid Risk Map data, the Study Contractor is to generate and deliver workmaps. Mapping will be provided to CTP as GIS shapefiles defining the boundary of the SFHA.

Deliverables

- Delineated SID 84 recurrence intervals - annual chance floodplain boundaries (excluding the optional “1-percent plus” event);
- Metadata file complying with the NFIP Metadata Profile Specifications;
- Support documentation;
- Applicable backup or supplemental information including supporting calculations and assumptions used in the floodplain mapping activities and required for review of the
- hydraulic analyses and floodplain mapping;
- Digital versions of draft text for inclusion in the FIS report; and
- Applicable input data, output data, and GIS data layers.

Task 8 – Develop Draft DFIRM Database

The Study Contractor shall prepare a DFIRM database in accordance with FEMA standards and guidance including applicable relevant technical reference documents for upload to the MIP. The Study Contractor will coordinate with the appropriate Mapping Partners as necessary to resolve any problems that are identified during development of the DFIRM database.

Deliverables

- Applicable DFIRM database files prepared in accordance with FEMA standards and in the required format(s); and
- Metadata file complying with the NFIP Metadata Profile Specifications.

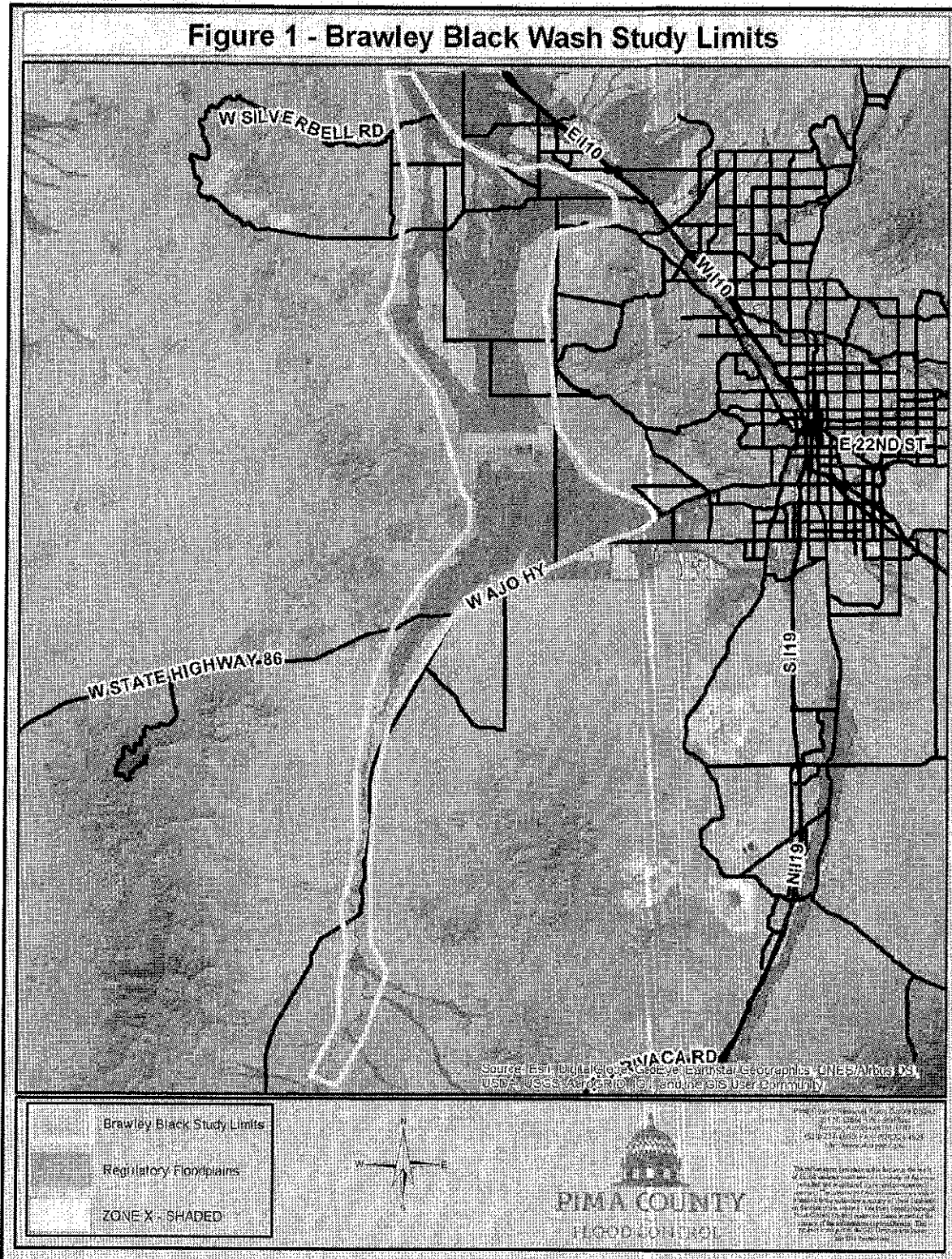


EXHIBIT "C" – CONSULTANT FEE PROPOSAL
(7 pages)

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Pima County SFQ-PO-2000015
Brawley and Black Wash
Detailed Risk Analysis and Mapping

Fee Estimate

Prepared by JE Fuller/Hydrology & Geomorphology

August 6, 2020

PROJ: Pima County Regional Flood Control District/Brawley and Black Wash Detailed Risk Analysis and Mapping

DETAIL: Fee Estimate

Firm	Staff	Rate	Labor Hours by Task # and Title							
			1	2	3	4	5	6	7	8
JE Fuller	Project Management			Acquisition and Development of Topographic Data	Prepare Base Map	Develop Hydrologic Data	Develop Hydraulic Data	Development of Non-Regulatory Products	Perform Floodplain Mapping	Develop DFIRM Database
	PP	\$165	72				30	45	24	
	PM	\$155	88	30			32	45	24	
	ME	\$145								
	SE	\$135	96	59	70	120	192	232	104	76
	PE	\$130			74	200	194	232	120	
	MS	\$130		30						
	JE/EIT	\$115				100	128	120	40	
	CADD/GIS	\$100						120		120
	MTR	\$100				32				
	Env Plnr	\$100	40							
	Admin	\$105				2				
CMG Drainage	PP	\$150				30	24		24	
	PM	\$135	16			30	24		24	
	SPE/H	\$120				260	200		100	
	PE/H	\$104		40		260	220		100	
	DSN	\$91		32	20			140	80	
	CADD	\$78			38			140	80	30
	Admin	\$57				2				
	Putt Land Survey			\$12,000						
Total Labor by Task			\$44,640.00	\$35,587.00	\$23,854.00	\$133,924.00	\$133,980.00	\$118,620.00	\$84,680.00	\$24,600.00

PROJECT TOTAL	\$599,885.00
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Pima County SFQ-PO-2000015
Brawley and Black Wash
Detailed Risk Analysis and Mapping

JE Fuller Labor Rates

Prepared by JE Fuller/Hydrology & Geomorphology

August 6, 2020

Pima County Regional Flood Control District					7/6/2020
Brawley and Black Wash Detailed Risk Analysis and Mapping					
JE Fuller Billing Rates					
		HOURLY RATES			
		Labor	Overhead*	Profit	Fully Burdened
	DISCIPLINE	\$/hr	186.24%	8.0%	\$hr
	Project Principal (PP)	\$52.40	\$97.60	\$12.00	\$165.00
	Project Manager (PM)	\$49.23	\$91.68	\$11.27	\$155.00
	Master Engineer (ME)	\$46.05	\$85.77	\$10.55	\$145.00
	Senior Engineer (SE)	\$42.88	\$79.85	\$9.82	\$135.00
	Engineer (PE)	\$41.29	\$76.89	\$9.45	\$130.00
	Master Surveyor (MS)	\$41.29	\$76.89	\$9.45	\$130.00
	Junior Engineer/EIT (JE/EIT)	\$36.52	\$68.02	\$8.36	\$115.00
	CADD/GIS	\$31.76	\$59.15	\$7.27	\$100.00
	Meteorologist (MTR)	\$31.76	\$59.15	\$7.27	\$100.00
	Environmental Planner	\$31.76	\$59.15	\$7.27	\$100.00
	Admin	\$33.35	\$62.11	\$7.64	\$105.00
* Based on 2019 audited overhead rate					

Pima County SFQ-PO-2000015
Brawley and Black Wash
Detailed Risk Analysis and Mapping

CMG Drainage Engineering Labor Rates

Prepared by JE Fuller/Hydrology & Geomorphology

August 6, 2020

**CMG DRAINAGE
ENGINEERING, INC.**

3555 N. Mountain Ave. • Tucson, AZ 85719 • phone: (520) 882-4244 • fax: (520) 888-1421

CMG DRAINAGE ENGINEERING, INC.**Hourly Billing Rates**

July 22, 2020

Project: Brawley/Black Wash Detailed Risk Analysis & Mapping

Item No.	Discipline	A	B	C	D
		Direct Labor Rate	Overhead	Profit	Billing Rate
1	Project Principal	\$61.19	\$77.70	\$11.11	\$150.00
2	Project Manager	\$55.07	\$69.93	\$10.00	\$135.00
3	Sr. Project Engineer / Hydrologist	\$48.95	\$62.16	\$8.89	\$120.00
4	Project Engineer / Hydrologist	\$42.42	\$53.87	\$7.70	\$104.00
5	Designer	\$37.12	\$47.14	\$6.74	\$91.00
6	CADD Technician	\$31.82	\$40.41	\$5.78	\$78.00
7	Clerical / Administration	\$23.25	\$29.53	\$4.22	\$57.00

Formulas:

(A) Direct Labor Rate

(B) Overhead @ 127% x (A)

(C) Profit @ 8% x (A + B)

(D) Billing Rate (A + B + C)

Direct Costs

Document/Plan Reproduction	Rate
Outside Vendor Printing & Reproduction Services	At Cost
In-House Printing & Photo Copies 8-1/2" x 11"	\$0.15/Sheet
In-House Printing & Photo Copies 11" x 17"	\$0.30/Sheet

EXHIBIT "D" MAPPING ACTIVITY STATEMENT
(42 pages)

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**PIMA COUNTY REGIONAL FLOOD CONTROL DISTRICT
COOPERATING TECHNICAL PARTNERS (CTP)
FLOOD RISK PROJECT
MAPPING ACTIVITY STATEMENT (MAS)
June 17, 2019**

MAS No. EMF-2019-CA-00019

The Flood Risk Project described in this MAS dated June 17, 2019 shall be completed in accordance with the CTP Partnership Agreement dated August 20, 2014 between Pima County Regional Flood Control District (herein referred to as "CTP") and the Federal Emergency Management Agency (FEMA).

The Flood Risk Project documented in this MAS is comprised of the following three separate projects:

1. Brawley and Black Wash Detailed Risk Analysis and Mapping
2. Southern Santa Cruz River Physical Map Revision (PMR)
3. Sabino Creek and Bear Canyon Wash Detailed Risk Analysis and Mapping

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1.2 Project No. 2: Southern Santa Cruz River PMR	
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1.2.2 Proposed Scope of Services	
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1 OBJECTIVE AND SCOPE

The Flood Risk Project documented in this MAS is comprised of the following three separate projects:

1. Brawley and Black Wash Floodplain Delineation Study (Study) and Mapping project;
2. Southern Santa Cruz River Floodplain Delineation Study and Mapping project; and
3. Sabino Creek and Bear Canyon Wash Floodplain Delineation Study and Mapping project.

The MAS activities associated with the above listed projects are discussed below in Section 1.1 through Section 1.3

The objective of the Flood Risk Project (projects listed above) documented in this MAS is to develop and/or support flood hazard data and program-related tasks through completing technical floodplain study and mapping activities. These activities are intended for incorporation as new or updated Flood Insurance Rate Maps (FIRM) and Flood Insurance Study (FIS) reports for one or more communities within the project area.

All processes and Deliverables shall be completed in accordance with the latest standards by the FEMA for Flood Risk Map floodplain study, analysis, and mapping. Guidelines and standards are located on FEMA's website <https://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping>. The guidelines and standards define the specific implementation of statutory and regulatory requirements for the National Flood Insurance Program (NFIP) flood risk analysis and mapping. Pima County Flood Control District is responsible for the work of all production teams as they address the performance of flood risk projects), related risk map activities, and post the projects to the Mapping Information Platform (MIP). The guidelines and standards are organized in hierarchy:

Program Standards – A required element of the Risk MAP program. Exceptions to the program standards can only be granted by program leadership through an exemption process.

Working Standards – A required element usually at a higher level of specificity than the program standards. Working standards are applied by specialists (engineers, planners, technicians, scientists, etc.) and have minimal ethical, political and legal impacts to the program. The FEMA regional offices may occasionally grant exceptions to these requirements.

Guidance – A recommended approach to meet the standard. Accepted approaches are not limited to this recommended approach; mapping partners may use other methods to meet or exceed the standards.

Best Practices/Lessons Learned – Any method, in addition to guidance, that meets or exceeds the standard. Best practices are shared by regions and mapping partners following successful approaches to program activities.

All study contractors are to follow the standards for the Risk MAP program which have been published as a FEMA policy. This policy supersedes all of the standards included in the previous Guidelines and Specifications for Flood Hazard Mapping Partners and associated Procedural memorandums. However, useful guidance is still available in these documents (<https://www.fema.gov/media-library/assets/documents/34953>). Additional information can be found on FEMA's website at <https://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping>.

The watersheds and jurisdictions in which flood risk projects will be performed as well as their applicable project type/activities are summarized in Table 1.1 Flood Risk Project Watersheds and Jurisdictions. Applicable project activities should be identified in the last column of the table for each watershed, county/parish, or community listed in Table 1.1 (e.g., Non-Regulatory Products, FIRM/FIS updates, Preliminary Distribution, Post-Preliminary Processing).

Table 1.1: Flood Risk Project Watersheds and Jurisdictions

Watershed/Project Name	Geographic Footprint	Communities Included in Project	Project Type Non-Re Products, FIRM FIS, etc.
Brawley Wash HUC 8/Brawley and Black Wash	HUC-8 Code 15050304	Unincorporated Pima County, the Town of Marana, the Tohono O'odham Nation, the Pascua Yaqui Tribe	PMR FIRM/FIS Updates Non-Regularly Products: Water Surface Elevation, Elevation Grids; Multi-Frequency Flood Depth Grids; Multi-Frequency Flood Velocity Grids; 1% Annual Chance Flood Depth Grid
Upper Santa Cruz River HUC 8/Southern Santa Cruz	HUC-8 Code 15050301	Unincorporated Pima County, the Town of Sahuarita, the Tohono O'odham Nation	PMR FIRM/FIS Updates
Rillito HUC-8/Sabino and Bear Creeks	HUC-8 Code 15050302	Unincorporated Pima County, City of Tucson	LOMR or PMR FIRM/FIS Updates Non-Regularly Products: Water Surface Elevation, Elevation Grids; Multi-Frequency Flood Depth Grids; Multi-Frequency Flood Velocity Grids; 1% Annual Chance Flood Depth Grid

The scope of work for each project of this Flood Risk Project is summarized below in Section 1.1 through Section 1.3.

1.1 Project 1: Brawley and Black Wash Detailed Risk Analysis and Mapping

CTP: Pima County Regional Flood Control District

CTP Contractor: To be determined through procurement processes.

1.1.1 Introduction and Project Understanding

The FEMA mapped floodplains in Avra Valley include the Altar, Black, Blanco, Brawley, East Branch Brawley, Los Robles and West Robles washes. The FEMA watercourses start at Arizona State Highway 86 and flow north to the Santa Cruz River. The watersheds feeding these watercourses is 1,340 square miles. The existing floodplain mapping is a rough representation of the areas inundated during a flood in 1962. The regulatory inundation mapping is not reflecting current conditions; new FIRM mapping is needed. The new mapping would modify the Special Flood Hazard Areas (SFHAs) shown on FIRM panels 04019C 1005, 1010, 1015, 1020, 1040, 1605, 1610, 1615, 1620, 1650, 2225, 2240, 2245, 2250, 2805, and 2810.

The existing SFHAs do not accurately reflect the regulatory event. Revised maps would result in reduced flood risks for future developments impacted by the floodplain and increased awareness for flood emergency response needs and flood preparedness.

The work requires a hydrologic and hydraulic study. The CTP (Pima County Regional Flood Control District) is currently undertaking a study to determine discharge values for all tributary watersheds that feed Avra Valley. This information (along with additional research and modeling) will be used to determine regulatory discharge values. Two-dimensional hydraulic modeling (FLO-2D) will be required to develop the distributary flows through the valley to establish gridded flood depth information to help regulate development.

Improved flood hazard mapping will be based on multi-frequency flood depth grids generated through FLO-2D of the project area. The Study Contractor may use the U.S. Army Corps of Engineers' (Corps) HEC-RAS program (Version 5.0.5) to complete this task instead of the FLO-2D program if the Project Manager pre-approves the modeling parameterizations and assumptions. In addition to improved floodplain study, the flood depth grids and velocity grids will be provided to FEMA for development of additional Risk MAP Products and to update the impacted FIRM panels.

1.1.2 Proposed Scope of Services

The Brawley and Black Wash Detailed Risk Analysis and Mapping will include the following study activities:

1. Project Management

2. Acquisition and Development of Topographic Data
3. Prepare Basemap
4. Develop Hydrologic Data
5. Develop Hydraulic Data
6. Develop Non-Regulatory Products
7. Perform Floodplain Mapping to workmap stage
8. Develop draft Digital Flood Insurance Rate Map (DFIRM) Database

The above study activities will be reviewed via a QA/QC process to confirm outputs conform with FEMA production standards and will be documented in a Technical Support Data Notebook (TSDN) deliverable to FEMA. In addition, Non-Regulatory Risk MAP Products (depth and velocity grids) will be provided to help communicate to the public the hazards associated with the identified SFHAs. Project models, data, maps, and outputs submitted to the MIP.

1.1.2.1 Project Management

1. Project Management is the active process of planning, organizing, and managing resources towards the successful accomplishment of the activities discussed under Section 2.
2. Brawley and Black Wash Detailed Risk Analysis and Mapping

The Study Project Manager will coordinate with the CTP and the FEMA Regional Office with respect to project management activities and technical mapping activities.

Deliverables

- Monthly Earned Value data reporting to the CTP and through FEMA's Mapping Information Platform (MIP) with variance explanations to support management of technical mapping activities within the specified timeframe, for both Regulatory and Non-Regulatory Products;
- Coordination and progress meeting scheduling, agendas, and meeting minutes; and
- Overall project QA/QC maintenance information, such as maintaining a QA/QC log and providing a QA/QC approach to Pima County for review and approval.

1.1.2.2 Acquisition and Development of Topographic Data

The Study Contractor shall use CTP provided LiDAR and aerial photographic data for the hydraulic analyses. Accuracy for the topographic data shall be evaluated based on the current FEMA requirements for flood hazard study level of detail.

Deliverables

- Applicable mass points and breakline data;
- Applicable gridded digital elevation model data;
- Other supporting files consistent with FEMA Data Capture Standards (DCS);

- Metadata file complying with the NFIP Metadata Profiles Specifications; and
- Topographic data update to the National Digital Elevation Program (NDEP).

1.1.2.3 Prepare Basemap

The basemap preparation activities for floodplain mapping consist of obtaining and formatting the digital basemap (raster or vector) for the project. Activities also include the review of the basemap and obtaining the necessary documentation/verification so basemap data source(s) may be used and distributed by FEMA. The Study Contractor shall prepare and provide the digital basemap, which may include, but not limited to, the following:

- Obtain digital files (raster or vector) of the basemap data from the CTP to ensure that the FEMA Geospatial Data Coordination Policy and Implementation Guide are followed. A review of any FEMA Region IX discovery products shall be conducted to ensure the basemap product is compatible with FEMA Region IX;
- Secure the necessary permission from the basemap source to allow FEMA's use and distribution of hardcopy and digital map products using the digital basemap, free of charge;
- Review and supplement the content of the acquired basemap to comply with FEMA standards;
- For the basemap components that have a mandatory data structure, convert the basemap data to the format required by FEMA standards; and
- Verify that the digital data meets the minimum standards and specifications that FEMA requires for FIRM production.

1.1.2.4 Develop Hydrologic Data

The hydrology for the watershed consists of a patchwork of studies for individual LOMRs. The underlying hydrologic values outside those LOMRs is dated. Many of the major watercourses have interconnected and braided flow corridors. New hydrologic models for FEMA mapped and named watercourses is needed.

Deliverables

- The Study Contractor is to develop hydrologic modeling to reflect the flood flow frequencies required by Risk Map and FIRM production standards;
- A separate report on the hydrologic modeling is to be approved prior to hydraulic modeling;
- The digital model and watershed workmaps are to be provided to the CTP and FEMA.
- Hydrographs of the 0.2, 1, 2, 4, and 10 percent chance flood events are to be provided to the CTP at the major concentration points.
- QA/QC reports will be supplied to CTP and FEMA

1.1.2.5 Develop Hydraulic Data

The Study Contractor will perform hydraulic analyses of the study area using FLO-2D (FEMA approved Pro version) for hydraulic modeling for the storm return event described in task 1.1.2.4. Modeling results will be provided in FLO-2D output files and flood depth grid format for use in developing additional Risk MAP Products. It is anticipated that multiple models, depending on grid size, will be required to cover the entire project area. The Study Contractor will submit model input and output files, and depth and velocity data in GIS shapefiles to the CTP and upload the data into the MIP.

The Study Contractor may use the Corps' HEC-RAS program (Version 5.0.5) to complete this task instead of the FLO-2D program if the Project Manager pre-approves the modeling parameterizations and assumptions.

Deliverables

- Digital copies of all hydraulic modeling (input and output) files;
- Applicable modeling input and output data and GIS layers;
- Metadata file complying with the NFIP Metadata Profile Specifications;
- Digital versions of draft text for inclusion in the FIS report;
- Digital versions of all backup data used in the analyses including work maps; and
- Raster data and/or shapefile data.
- QA/QC reports will be supplied to CTP and FEMA

1.1.2.6 Development of Non-Regulatory Products

Risk assessment data and analyses are defined as processes for analyzing or evaluating the risk associated with a hazard, and using that information to make informed decisions on the appropriate ways to reduce the impacts of the hazard on people and property. As part of the Risk MAP program, non-regulatory Flood Risk Products shall be developed for the study area. The Study Contractor will develop depth grid and velocity grid mapping for the study area for the 0.2, 1, 2, 4, and 10 percent annual chance storms, and this data will be provided to the CTP.

Deliverables

- Depth and Analysis Grids dataset, including:
 - Applicable multi-frequency (0.2, 1, 2, 4, and 10 percent annual chance) flood depth, and flow velocity grids.

1.1.2.7 Perform Floodplain Mapping

In addition to the flow depth grid Risk Map data, the Study Contractor is to generate and deliver workmaps. Mapping will be provided to CTP as GIS shapefiles defining the boundary of the SFHA that match FEMA SID 84 in the standards and guidance table.

Deliverables

- Delineated SID 84 recurrence intervals - annual chance floodplain boundaries;
- Metadata file complying with the NFIP Metadata Profile Specifications;
- Support documentation;
- Applicable backup or supplemental information including supporting calculations and assumptions used in the floodplain mapping activities and required for review of the hydraulic analyses and floodplain mapping;
- Digital versions of draft text for inclusion in the FIS report; and
- Applicable input data, output data, and GIS data layers.

1.1.2.8 Develop DFIRM Database

The Study Contractor shall prepare a DFIRM database in accordance with FEMA standards and guidance including applicable relevant technical reference documents for upload to the MIP. The Study Contractor will coordinate with the appropriate Mapping Partners as necessary to resolve any problems that are identified during development of the DFIRM database.

Deliverables

- Applicable DFIRM database files prepared in accordance with FEMA standards and in the required format(s); and
- Metadata file complying with the NFIP Metadata Profile Specifications.

Additionally, the CTP will develop new and/or updated flood hazard data as summarized in Table 1.1.a – Brawley and Black Wash, Total Stream Mile Counts by Type of Study. There are seven FEMA watercourses in the Brawley HUC-8 Watershed to be re-mapped. Those are the Altar, Black, Blanco, Brawley, East Branch Brawley, Los Robles and West Robles washes. Currently, these watercourses are mapped as Zone A, Zone AE and Zone AO on the FEMA FIRM panels. The floodplains are not currently mapped through the Schuk Toak District of the Tohono O'Odham Nation.

**Table 1.1.a: Total Stream Mile Counts by Type of Study, Brawley and Black Wash
Detailed Risk Analysis and Mapping**

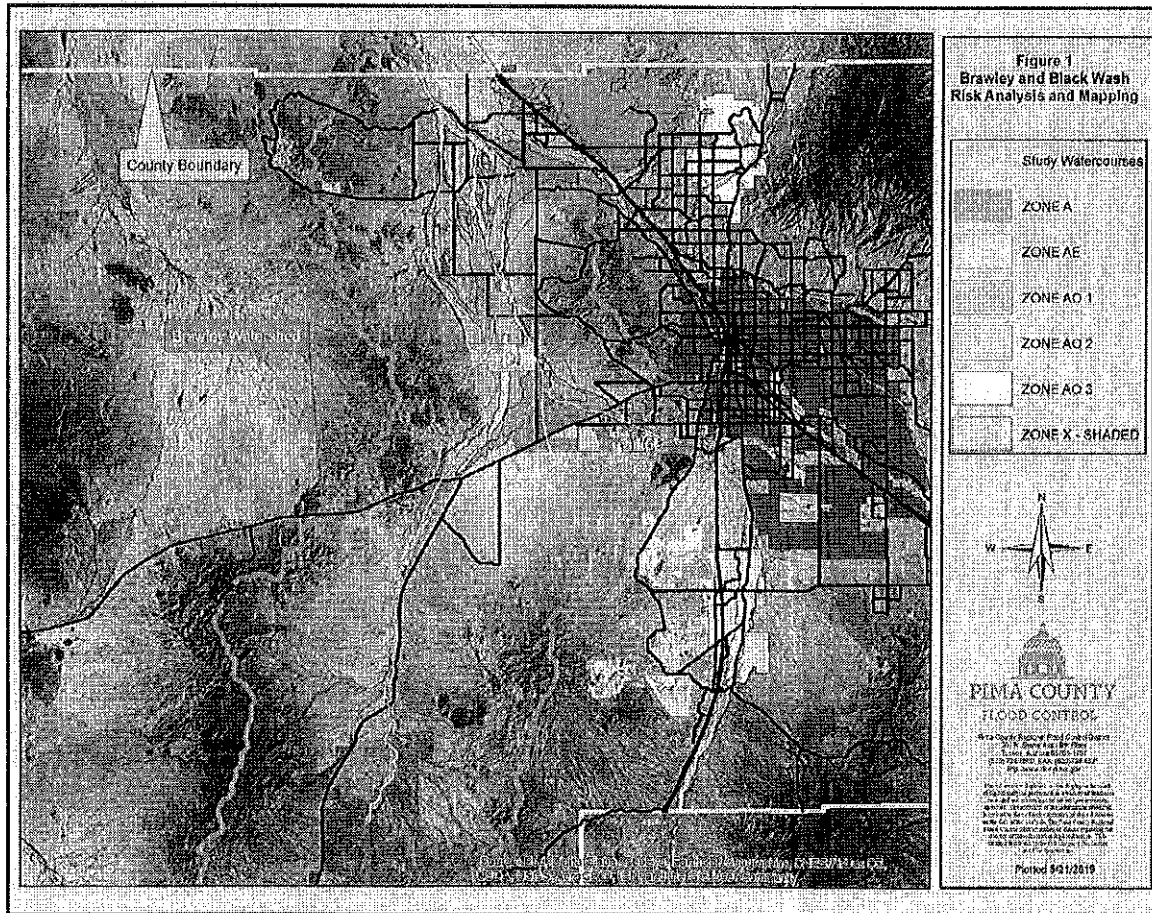
River Miles – Existing FIRM Panels					Proposed CTP Project Outcome
Watercourse	Existing Zone A	Existing Zone AO	Existing Zone AE	Existing Not-mapped	CTP Zone AE miles
Altar	20.3				20.3
Black	3.12	5.9	1.9		10.92
Blanco	8.4	7	3.4	4	22.8
Brawley	16.6	14.2	5.8	2.6	9.2

River Miles – Existing FIRM Panels

Proposed CTP Project Outcome

Watercourse	Existing Zone A	Existing Zone AO	Existing Zone AE	Existing Not-mapped	CTP Zone AE miles
East Branch Brawley	11.1	9.2			20.3
Los Robles	7	1	4.6		12.6
West Branch Brawley	1.7	8.4		3.1	13.2
Total	68.22	45.7	15.7	9.7	139.32

Figure 1 shows the project location.



1.2 Project 2: Southern Santa Cruz PMR

CTP: Pima County Regional Flood Control District

CTP Contractor: To be determined through procurement processes.

1.2.1 Introduction and Project Understanding

The FEMA mapped floodplain for the Southern Santa Cruz River has been studied through a Risk Map Analysis using the two-dimensional (2-D) HEC-RAS program (Version 5.0.5). That analysis demonstrated flood flow distribution different than what is reflected on current effective FIRMs. This project is to refine Pima County's 2-D analysis products to meet FEMA standards, develop an updated floodway and other study components for map and FIS update, and produce a draft DFIRM database. This PMR project to revise the SFHAs for the Santa Cruz River will be reflected on FIRM panels: 04019C 2880, 2890, 2893, 3455, 3460, 3465, 3935, 3845, 3955, 3965, and 4360. The study would also provide floodplain information for the San Xavier District of the Tohono O'odham Nation.

1.2.2 Proposed Scope of Services

The Southern Santa Cruz PMR will include the following study activities:

1. Project Management
2. Acquisition and Development of Topographic Data
3. Prepare Basemap
4. Develop Hydraulic Data
5. Perform Floodplain Mapping to the workmap stage
6. Develop DFIRM Database
7. QA/QC reports will be supplied to CTP and FEMA

The above study activities will be reviewed via a QA/QC process to confirm outputs conform with FEMA production standards and will be documented in a Technical Support Data Notebook (TSDN) deliverable to FEMA. Project models, data, maps, and outputs submitted to the MIP.

1.2.2.1 Project Management

Project Management is the active process of planning, organizing, and managing resources towards the successful accomplishment of the activities discussed under Section 2. The Southern Santa Cruz PMR Study Project Manager will coordinate with the CTP and the FEMA Regional Office with respect to project management activities and technical mapping activities.

Deliverables

- Monthly Earned Value data reporting to the CTP and through FEMA's MIP with variance explanations to support management of technical mapping activities within the specified timeframe for Regulatory Products;
- Coordination and progress meeting scheduling, agendas, and meeting minutes; and
- Overall project QA/QC maintenance information, such as maintaining a QA/QC log and providing a QA/QC approach to the District for review and approval.

1.2.2.2 Acquisition and Development of Topographic Data

The Study Contractor shall use CTP provided LiDAR and aerial photographic data for the hydraulic analyses. Accuracy for the topographic data shall be evaluated based on the current FEMA requirements for flood hazard study level of detail.

Deliverables

- Applicable mass points and breakline data;
- Applicable gridded digital elevation model data;
- Other supporting files consistent with FEMA DCS;
- Metadata file complying with the NFIP Metadata Profiles Specifications; and
- Topographic data update to the NDEP;
- QA/QC reports will be supplied to CTP and FEMA.

1.2.2.3 Prepare Basemap

The basemap preparation activities for floodplain mapping consist of obtaining and formatting the digital basemap for the project. Activities also include the review of the basemap and obtaining the necessary documentation/verification that basemap data source(s) may be used and distributed by FEMA. The Study Contractor shall prepare and provide the digital basemap, which may include, but not limited to, the following:

- Obtain digital files of the basemap data from the CTP ensure that the FEMA Geospatial Data Coordination Policy and Implementation Guide are followed. A review of any FEMA Region IX discovery products shall be conducted to ensure the basemap product is compatible with FEMA Region IX;
- Secure the necessary permission from the basemap source to allow FEMA's use and distribution of hardcopy and digital map products using the digital base map, free of charge;
- Review and supplement the content of the acquired basemap to comply with FEMA standards;
- Convert the basemap data to the format required by FEMA standards for the basemap components that have a mandatory data structure; and
- Verify that the digital data meets the minimum standards and specifications that FEMA requires for FIRM production.

1.2.2.4 Develop Hydraulic Data

The Study Contractor will perform hydraulic analyses of the Southern Santa Cruz PMR project area using the HEC-RAS model used in the Upper Santa Cruz River Risk Map Study. If practicable, the Study Contractor shall develop FIRM data using the 2-D version of HEC-RAS. If not practicable, the Study Contractor shall use the information gathered in the Upper Santa Cruz River Risk Map Study to develop a one-dimensional (1-D) model to create the PMR

workmaps. The Study Contractor will submit model input and output files, and depth and velocity data in GIS shapefiles to the CTP and upload the data into the MIP.

Deliverables

- Digital copies of all hydraulic modeling (input and output) files;
- Applicable modeling input and output data and GIS layers;
- Metadata file complying with the NFIP Metadata Profile Specifications;
- Digital versions of draft text for inclusion in the FIS report; and
- Digital versions of all backup data used in the analyses including workmaps;
- QA/QC reports will be supplied to CTP and FEMA.

1.2.2.5 Develop Floodplain Workmap

The Study Contractor is to generate new FIRM and SFHA maps and data. Mapping will be provided to the CTP as GIS shapefiles defining the boundary of the SFHA for the 1 percent annual chance storm, and the boundary of the floodplains associated with the 0.2 percent annual chance storms.

Deliverables

- Delineated 0.2 and 1 percent annual chance floodplain boundaries;
- Floodway delineation;
- Metadata file complying with the NFIP Metadata Profile Specifications
- Support documentation;
- Applicable backup or supplemental information including supporting calculations and assumptions used in the floodplain mapping activities and required for review of the hydraulic analyses and floodplain mapping;
- Digital versions of draft text for inclusion in the FIS report; and
- Applicable input data, output data, and GIS data layers.

1.2.2.6 Develop DFIRM Database

The Study Contractor shall prepare a DFIRM database in accordance with FEMA standards and guidance including applicable relevant technical reference documents for upload to the MIP. The Study Contractor will coordinate with appropriate Mapping Partners as necessary to resolve any problems that are identified during development of the DFIRM database.

Deliverables

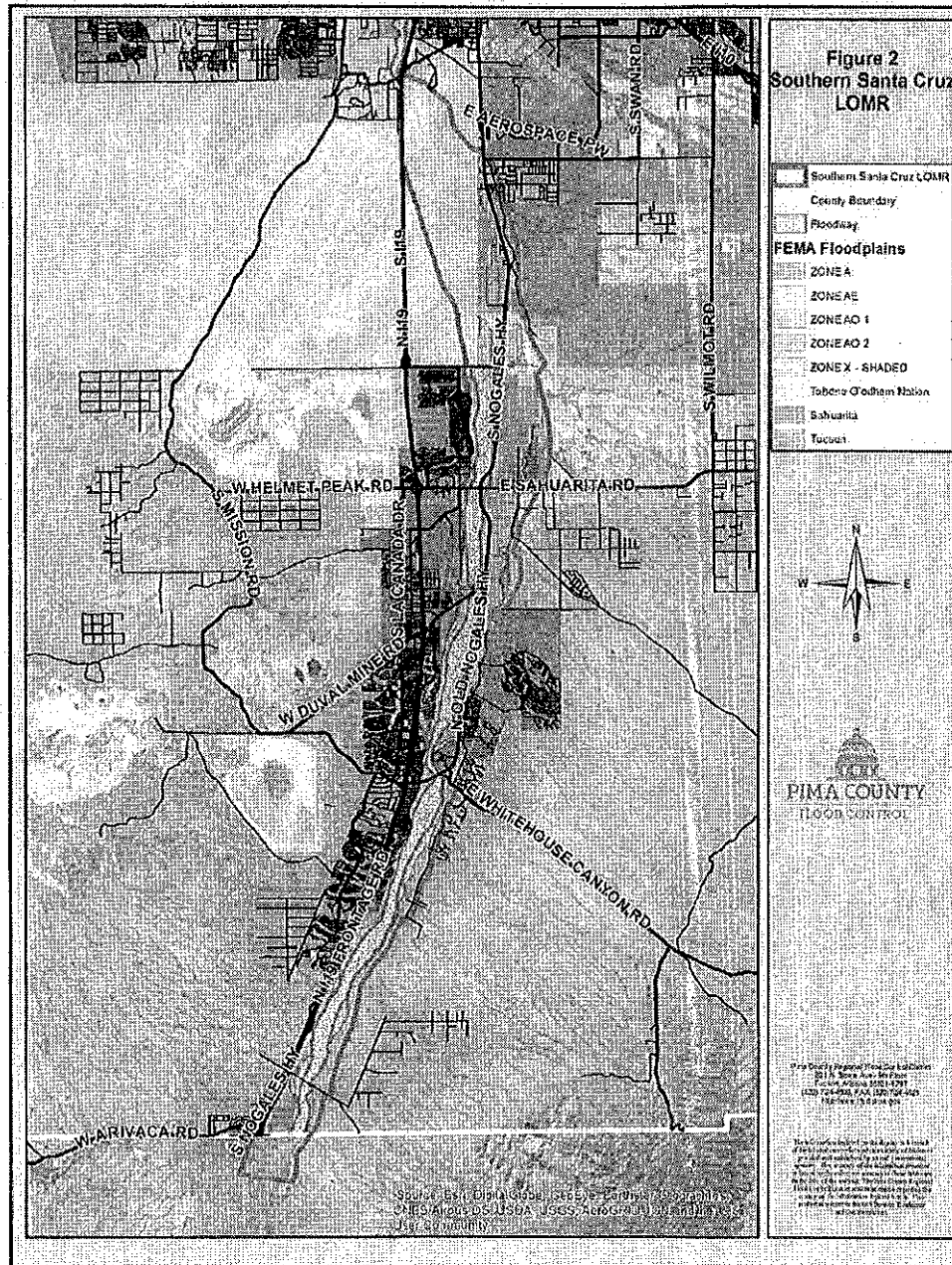
- Applicable DFIRM database files, prepared in accordance with FEMA standards and in the required format(s); and
- Metadata file complying with the NFIP Metadata Profile Specifications.

Additionally, the CTP involved in this project will develop new and/or updated flood hazard data as summarized in Table 1.2.b – Total Stream Mile Counts by Type of Study, Southern Santa Cruz River PMR. The existing 3 miles of AO floodplain to the north of Pima Mine Road is remnant mapping from the first FIRMs issued in Unincorporated Pima County and represents Santa Cruz River overbank flooding outside the Tohono O’odham Nation. There are 7.5 miles of the Santa Cruz River that are not mapped within the Tohono O’odham Nation. This Native American Tribe does not currently participate in the NFIP.

Table 1.2.b: Total Stream Mile Counts by Type of Study
Southern Santa Cruz River PMR

Watercourse	Existing Zone AO	Existing Zone AE	Existing not mapped	CTP Zone AE miles
Santa Cruz River	3	20.2	7.5	27.7

Figure 2 – Project Location



1.3 Project 3: Sabino Creek and Bear Canyon Wash Detailed Risk Analysis and Mapping

CTP: Pima County Regional Flood Control District

CTP Contractor: To be determined through procurement processes.

1.3.1 Introduction and Project Understanding

The FEMA mapped floodplains for the Sabino Creek and Bear Canyon Wash do not reflect true flood risks. The data from the United States Geologic Survey stream gage (09484000) and the CTP's ALERT gage (1163) indicate the FEMA regulatory discharge (1 percent annual chance runoff) is too low. Furthermore, the current SFHA boundaries as shown on FIRM panels 04019C 1715 L and 1720 M do not fit within topographic boundaries. New Flood Risk Products are needed to revise current effective FIRMs. Due to the relative small number of panels impacted, the CTP has the option to submit this study to the MT2 group as a LOMR. FEMA Region IX supports the decision of the CTP for either the LOMR or PMR process.

1.3.2 Proposed Scope of Services

The Sabino Creek and Bear Canyon Wash Detailed Risk Analysis and Mapping will include the following study activities:

1. Project Management
2. Acquisition and Development of Topographic Data
3. Prepare Basemap
4. Develop Hydrologic Data
5. Develop Hydraulic Data
6. Develop Non-Regulatory Products
7. Perform Floodplain Mapping
8. Develop DFIRM Database
9. QA/QC reports will be supplied to CTP and FEMA

The above study activities will be reviewed via a QA/QC process to confirm outputs conform with FEMA production standards and will be documented in a Technical Support Data Notebook (TSDN) deliverable to FEMA. In addition, Non-Regulatory Risk MAP Products (depth and velocity grids) will be provided to help communicate to the public the hazards associated with the identified SFHAs. Project models, data, maps, and outputs submitted to the MIP.

1.3.2.1 Project Management

Project Management is the active process of planning, organizing, and managing resources towards the successful accomplishment of the activities discussed under Section 1.3.2. The Sabino Creek and Bear Canyon Wash Study Project Manager will coordinate with the CTP and the FEMA Regional Office with respect to project management activities and technical mapping activities.

Deliverables

- Monthly Earned Value data reporting to the CTP and through FEMA's Mapping Information Platform (MIP) with variance explanations to support management of technical mapping activities within the specified timeframe, for both Regulatory and Non-Regulatory Products;
- Coordination and progress meeting scheduling, agendas, and meeting minutes; and
- Overall project QA/QC maintenance information, such as maintaining a QA/QC log and providing a QA/QC approach to the County for review and approval.

1.3.2.2 Acquisition and Development of Topographic Data

The Study Contractor shall use CTP provided LiDAR and aerial photographic data for the hydrologic and hydraulic analyses. Accuracy for the topographic data shall be evaluated based on the current FEMA requirements for flood hazard study level of detail.

Deliverables

- Applicable mass points and breakline data;
- Applicable gridded digital elevation model data;
- Other supporting files consistent with FEMA DCS;
- Metadata file complying with the NFIP Metadata Profiles Specifications; and
- Topographic data update to the NDEP;
- QA/QC reports will be supplied to CTP and FEMA.

1.3.2.3 Prepare Basemap

The basemap preparation activities for floodplain mapping consist of obtaining and formatting the digital basemap (raster or vector) for the project. Activities also include the review of the basemap and obtaining the necessary documentation/verification so basemap data source(s) may be used and distributed by FEMA. The Study Contractor shall prepare and provide the digital basemap, which may include, but not be limited to, the following:

- Obtain digital files (raster or vector) of the basemap data from the CTP to ensure that the FEMA Geospatial Data Coordination Policy and Implementation Guide are followed. A review of any FEMA Region IX discovery products shall be conducted to ensure the basemap product is compatible with FEMA Region IX;
- Secure necessary permission from the basemap source to allow FEMA's use and distribution of hardcopy and digital map products using the digital base map, free of charge;
- Review and supplement the content of the acquired basemap to comply with FEMA standards;
- For the basemap components that have a mandatory data structure, convert the basemap data to the format required by FEMA standards; and
- Verify that the digital data meets the minimum standards and specifications that FEMA requires for FIRM production.

1.3.2.4 Develop Hydrologic Data

The Study Contractor is to use the stream gage data and develop a return frequency analysis to determine the regulatory discharge (1% annual event). From that data, the Study Contractor shall develop a HEC-HMS model for that regulatory event that fits within standard confidence limits for hydrologic modeling. That model shall then be used to determine the flood runoff for the .2, 1, 2, 4, and 10 percent annual flood events for the Flood Risk and FRIM modeling.

Deliverables

- The Study Contractor is to develop hydrologic modeling to reflect the flood flow frequencies required by Risk Map and FIRM production standards;
- A separate report on the hydrologic modeling is to be approved prior to hydraulic modeling;
- The digital model and watershed work maps are to be provided to the CTP and FEMA; and
- Hydrographs of the 0.2, 1, 2, 4, and 10 percent chance flood events are to be provided to the CTP at the major concentration points;
- QA/QC reports will be supplied to CTP and FEMA.

1.3.2.5 Develop Hydraulic Data

The Study Contractor will perform Hydraulic analyses using HEC-RAS (Version 5.0.5) for hydraulic modeling for the storm return event described in task 1.3.2.4. Modeling results will be provided in flood depth grid format for use in developing additional Risk MAP Products. It is anticipated that multiple models, depending on grid size, will be required to cover the entire project area. The Study Contractor will submit model input and output files, and depth and velocity data in GIS shapefiles to the CTP and upload the data into the MIP.

Deliverables

- Digital copies of all hydraulic modeling (input and output) files;
- Applicable modeling input and output data and GIS layers;
- Metadata file complying with the NFIP Metadata Profile Specifications;
- Digital versions of draft text for inclusion in the FIS report; and
- Digital versions of all backup data used in the analyses including work maps;
- QA/QC reports will be supplied to CTP and FEMA.

1.3.2.6 Development of Non-Regulatory Products

Risk assessment data and analyses are defined as processes for analyzing or evaluating the risk associated with a hazard, and using that information to make informed decisions on the appropriate ways to reduce the impacts of the hazard on people and property. As part of the Risk MAP Program, non-regulatory Flood Risk Products shall be developed for the study area. The

Study Contractor will develop depth grid and velocity grid mapping for the 0.2, 1, 2, 4, and 10 percent annual chance storms, and this data will be provided to the CTP.

Deliverables

- Depth and Analysis Grids dataset including:
 - Applicable multi-frequency (0.2, 1, 2, 4, and 10 percent annual chance) flood depth, and flow velocity grids.

1.3.2.7 Perform Floodplain (work map) Mapping

In addition to the depth and velocity grid Risk Map data products, the Study Contractor is to develop flood hazard information into FIRM/SFHA work maps. If the HEC-RAS 2-D modeling is not practicable for producing updated floodway, the Study Contractor shall develop 1-D modeling based on information discovered in the 2-D analysis. Mapping will be provided to the CTP as GIS shapefiles defining SFHA boundaries for the 1 percent annual chance storm, and boundaries of the floodplains associated with 10 and 4 percent annual chance storms.

Deliverables

- Delineated 10, 4, and 1 percent annual chance floodplain boundaries;
- Metadata file complying with the NFIP Metadata Profile Specifications;
- Support documentation;
- Applicable backup or supplemental information including supporting calculations and assumptions used in the floodplain mapping activities and required for review of the hydraulic analyses and floodplain mapping;
- Digital versions of draft text for inclusion in the FIS report; and
- Applicable input data, output data, and GIS data layers

1.3.2.8 Develop DFIRM Database

The Study Contractor shall prepare a DFIRM database in accordance with FEMA standards and guidance including applicable relevant technical reference documents for upload to the MIP. The Study Contractor will coordinate with appropriate Mapping Partners as necessary to resolve any problems that are identified during development of the DFIRM database.

Deliverables

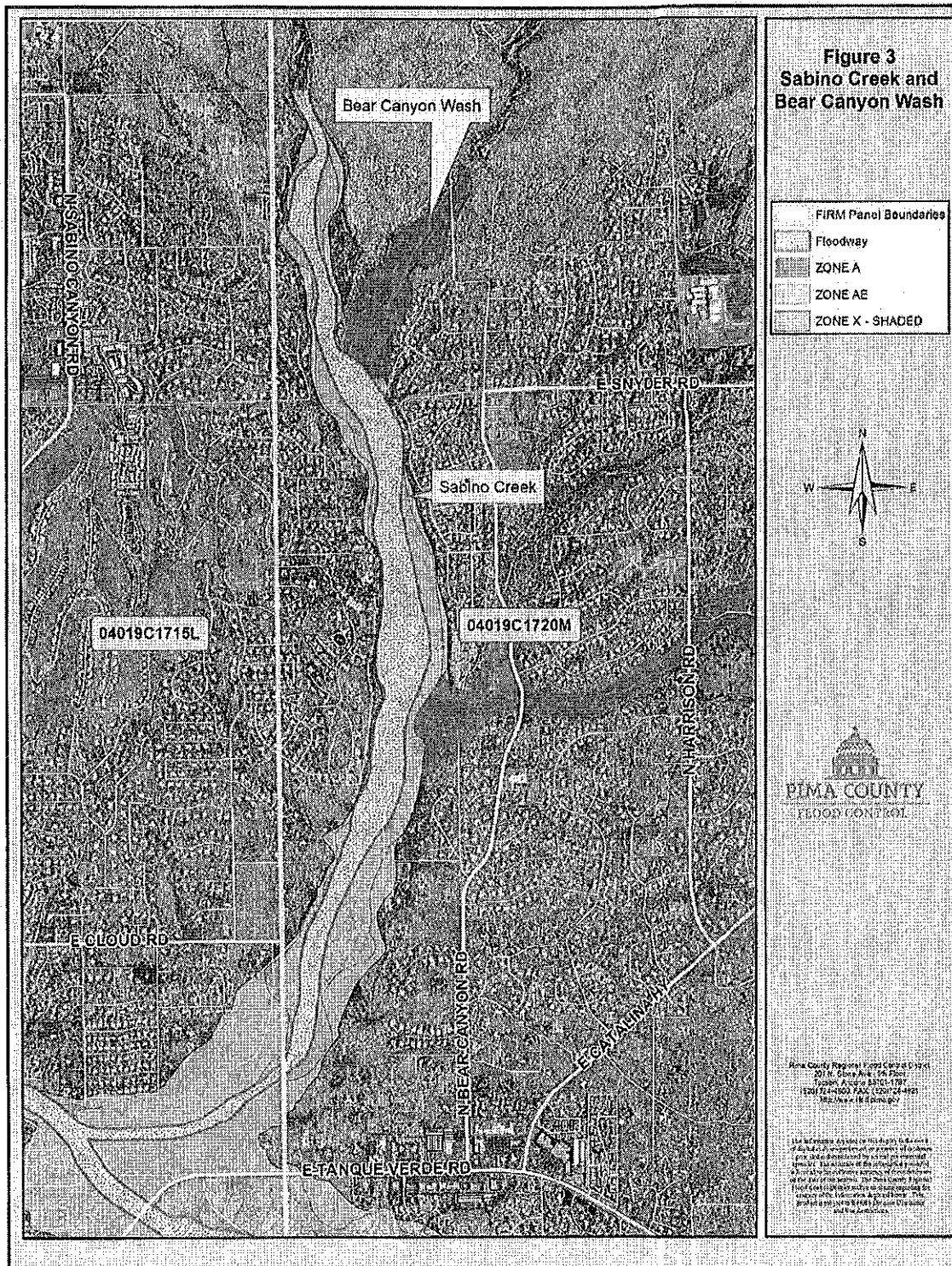
- Applicable DFIRM database files prepared in accordance with FEMA standards and in the required format(s); and
- Metadata file complying with the NFIP Metadata Profile Specifications.

Additionally, the CTP involved in this project will develop new and/or updated flood hazard data as summarized in Table 1.3b – Total Stream Mile Counts by Type of Study, Sabino Creek and Bear Canyon Wash Detailed Risk Analysis and Mapping.

Table 1.3.b: Total Stream Mile Counts by Type of Study, Sabino Creek and Bear Canyon Wash Detailed Risk Analysis and Mapping

Watercourse	Existing Zone A	Existing Zone AE	Existing not mapped	CTP Zone AE miles
Sabino Creek		4.1		4.1
Bear Creek	0.8		0.3	1.1

Figure 3 – Location for the Sabino Creek and Bear Canyon Wash Detailed Risk Analysis and Mapping



This Flood Risk Project will be completed by the following entities:

- The CTP

1.4.4 Additional Risk MAP Related Notes

The CTP shall notify FEMA and all applicable parties of all meetings with community officials and other relevant meetings at least two weeks prior to the meeting (with as much notice as possible). FEMA and/or its contractor may or may not attend the community meetings.

The CTP shall maintain an archive of all data submitted. All supporting data must be retained for three years from the date a funding recipient submits its final expenditure report to FEMA.

Independent QC review activities may be performed by the CTP or FEMA's contractor at the discretion of FEMA. If the CTP will be responsible for the QC review, the entity that will perform the QC review should be identified in this MAS. The CTP will need to submit its QC plan to the Regional Project Officer for approval.

Note that FEMA will also be performing periodic audits and overall study/project management to ensure quality including National Quality Reviews (QRs) required per FEMA standards for all flood risk projects. Whether or not the CTP performs the Independent QC review mentioned in the preceding paragraph, the CTP will be responsible for addressing any and all comments resulting from National QRs and any additional independent QA reviews required by the FEMA Regional Office including re-submittal of deliverables as needed to pass technical or quality review. The CTP will submit regulatory products to FEMA's designated National QR reviewer for review and approval prior to public issuance.

Metadata is required for applicable activities (see latest version of DCS).

FIRM-related tasks require a passing QC Report from FEMA's National FIRM database auto-validation tool for Quality Review (QR) #1, #2, and #5 as required in FEMA standards. Training materials for this step are available from FEMA's Mapping Information Platform (MIP) <https://hazards.fema.gov/femaportal/wps/portal/> under the Uses Care Home link.

FEMA will provide download/upload capability for applicable data submittals through the MIP. As each activity is completed, applicable data must be submitted to the MIP.

In cooperation with the FEMA Project Officer, a Project Management Team (PMT) will be established by the CTP consisting of representatives from the CTP, FEMA's regional engineer, and other appropriate parties (e.g., FEMA contractors) at the discretion of FEMA. The PMT will be responsible for coordinating the activities identified in this MAS. The FEMA Region IX will be provided with documentation identifying the established PMT.

Earned Value Data Entry: The MIP Workflow is designed to track the Earned Value of Flood Risk Projects. This information is automatically calculated by the MIP using the actual cost and schedule of work performed, or "actuals", and comparing them to the expected cost and schedule of work performed, or "baseline."

Once the FEMA Regional Office has funded a project, FEMA or its contractor will complete the "Obligate Project Funds" screen in the MIP. This step establishes the baseline for the project in the MIP using the cost and schedule information for each task as outlined in this document.

The MIP study workflow allows FEMA and the CTP to manage the status of these projects at a task level. The cost and schedule information, updated monthly by the CTP for each contracted task, is compared to the baseline established for those tasks. This information is rolled up to a project level and monitored by the FEMA Region IX to assess progress and Earned Value.

Earned Value data entry involves updating cost, schedule and performance (physical percent complete) in the MIP by the CTP each month for each assigned task.

The CTP may contact the regional office to obtain the guidance document Risk MAP Products in the MIP which explains how Non-Regulatory Products shall be submitted through the MIP. The guidance also explains how performance will be tracked for Non-Regulatory Products.

Once the baseline has been established in the MIP, the CTP shall input the performance and actual cost to date for all tasks within each project for which the CTP is responsible. This must be completed at a minimum of once every 30 days and at the completion of the task. When a task is completed, including all QA/QC activities in this MAS plus the Quality Control Reviews required by FEMA standards, the CTP shall enter 100% complete, enter the actual completion cost, and the actual completion date within the Manage Data Development, Manage Preliminary Map Production, or Manage Post Preliminary Processing tasks as applicable. The "Manage" tasks remain open and accept updates for up to 90 days after the completion of the last producer task in each module. The MIP shall also be populated with appropriate leverage information regarding who (CTP or community) paid for the data provided and the amount of data used by the Flood Risk Project. The CTP will maintain a Schedule Performance Index (SPI) and Cost Performance Index (CPI) of at least 0.92. Special Problem Reports (SPRs) explaining any variance must be submitted in a timely manner as required.

The Project Officer, as needed, may request additional information on the status of the project on an ad hoc basis.

2 TECHNICAL AND ADMINISTRATIVE SUPPORT DATA-SUBMITTAL

The Project Team members for this Flood Risk Project that have responsibilities for activities included in this MAS shall comply with the data submittal requirements summarized below and in appropriate Procedure Memoranda.

Applicable supporting documentation for the activities in this MAS shall be submitted according to applicable FEMA standards and requirements. Submittals must be made to the appropriate PTS for a review of required materials. The CTP will respond to requests from FEMA or its contractors for additional information and ensure that all required documents are included in the TSDN.

If any issues arise that could affect the completion of an activity within the proposed scope or budget, the CTP shall complete and submit to FEMA a SPR as soon as possible after the issue is identified. The SPR describes the issue and proposes possible resolutions. For additional information on SPRs, consult the Regional Office.

Information supporting FEMA standards and requirements regarding TSDN and the Flood Elevation Determination Docket (FEDD) files may be found in Procedure Memorandum 62 *TSDN and FEDD File Protocol for Mapping Projects*.

3 PERIOD OF PERFORMANCE

The mapping activities outlined in this MAS will be completed as specified in the Cooperative Agreement Funding Opportunity Announcement, Award Notice and/or Articles of Agreement. The mapping activities may be terminated at the option of FEMA or the CTP in accordance with the provisions of the Partnership Agreement dated August 20, 2014. If these mapping activities are terminated, all products produced to date must be submitted and updated into the MIP (if applicable) and the remaining funds, provided by FEMA for this MAS from uncompleted activities will be returned to FEMA.

4 FUNDING/LEVERAGE (For CTP, OFA and/or Community)

FEMA is providing full funding in the amount of \$1,050,000 through a Cooperative Agreement with the CPT for the completion of these three projects. FEMA is covering 100% of the grant costs with no local cost leverage. Table 4.1 outlines the costs components of this MAS by project. Activities associated with any additional needs would be performed based on availability of additional funds. The leverage listed below includes in-kind services and blue book values for obtained existing information from the CTP or communities associated with the project (i.e. base map data, hydrologic and hydraulic analyses, etc.). These values must also be reported in the MIP by the CTP during the appropriate task.

Final leverage dollars or units will be entered, as applicable, within the Manage Data Development task in the MIP workflow. Leverage data shall be an estimate of available leverage data at the time the MAS is prepared and shall be further defined in the Discovery Report and throughout the project.

Optional Table 4.1 – Contribution and Leverage (see Table 4.1 Notes below)

Task	Project No.	FEMA Contribution	Partner Contribution	% Partner Leverage (of total project task cost)	Total Project Task Cost (FEMA + Partner)
Project Management	Project 1	\$30,000	0	0	\$30,000
	Project 2	\$12,500	0	0	\$12,500
	Project 3	\$10,000	0	0	\$10,000
	Total	\$52,500	0	0	\$52,500
Perform Field Survey	Project 1	\$18,000	0	0	\$18,000
	Project 2	\$7,500	0	0	\$7,500
	Project 3	\$6,000	0	0	\$6,000
	Total	\$31,500	0	0	\$31,500
Develop Topographic Data	Project 1	\$18,000	0	0	\$18,000
	Project 2	\$0	0	0	\$0
	Project 3	\$16,000	0	0	\$16,000
	Total	\$34,000	0	0	\$34,000
Basemap Preparation	Project 1	\$48,000	0	0	\$48,000
	Project 2	\$20,000	0	0	\$20,000
	Project 3	\$20,000	0	0	\$20,000
	Total	\$88,000	0	0	\$88,000
Develop Hydrologic and Hydraulic Data	Project 1	\$270,000	0	0	\$270,000
	Project 2	\$70,000	0	0	\$70,000
	Project 3	\$80,000	0	0	\$80,000
	Total	\$420,000	0	0	\$420,000
Develop Non-Regulatory Products, Flood Risk Report, and Datasets	Project 1	\$108,000	0	0	\$108,000
	Project 2	\$25,000	0	0	\$25,000
	Project 3	\$36,000	0	0	\$36,000
	Total	\$169,000	0	0	\$169,000
Perform Floodplain Mapping	Project 1	\$78,000	0	0	\$78,000
	Project 2	\$90,000	0	0	\$90,000
	Project 3	\$16,000	0	0	\$16,000
	Total	\$184,000	0	0	\$184,000
Develop DFIRM Database	Project 1	\$30,000	0	0	\$30,000
	Project 2	\$25,000	0	0	\$25,000
	Project 3	\$16,000	0	0	\$16,000
	Total	\$71,000	0	0	\$71,000
Total Funding Amounts	Project 1	\$600,000	0	0	\$600,000
	Project 2	\$250,000	0	0	\$250,000
	Project 3	\$200,000	0	0	\$200,000
	Total	\$1,050,000	0	0	\$1,050,000

Table 4.1 Notes:

- Project 1: Brawley and Black Wash Detailed Risk Analysis and Mapping
- Project 2: Southern Santa Cruz River Risk PMR
- Project 3: Sabino and Bear Creek Detailed Risk Analysis and Mapping

5 STANDARDS

The standards relevant to this MAS are available in FEMA's Guidelines and Standards Policy memorandum located at <https://www.fema.gov/media-library/assets/documents/35313>.

Additional information, along with links to Guidance, Technical References, Templates and other resources that support these standards, may be accessed and/or downloaded from the FEMA Flood Hazard Mapping website at <https://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping>. The Geospatial Data Coordination Policy and the Geospatial Data Coordination Implementation Guide are located at <https://hazards.fema.gov/femaportal/wps/portal/> under "Tools & Links."

FEMA is in the process of updating existing guidance. In the meantime, the CTP may refer to historical documents for assistance. Table 5.1 Applicable Standards for Project Activities and Table 5.2 Project Activities and Applicable Portions of FEMA Guidelines and Specifications are provided to assist the CTP in determining the relevant historic guidance for tasks available in this MAS. The CTP (and their contractors) working on a Flood Risk Project are responsible for complying with all appropriate requirements in FEMA's standards and guidelines.

Additionally, CTP and their sub-awardees must comply with FEMA's Federal Regulation 44 CFR and the appropriate year CTP Funding Opportunity Announcement and Agreement Articles. The CTP shall also coordinate with their regional office to determine additional standards that should be met.

Table 5.1 - Applicable Standards for Project Activities

Applicable Guidance	Activities																	
	Perform Discovery	Outreach	Perform Field Survey	Develop Topographic Data	Perform Independent QA/QC: Topographic Data	Acquire Base Map	Coastal Analysis	Perform Independent QA/QC: Coastal Analysis	Develop Hydrologic Data	Perform Independent QA/QC: Hydrologic Data	Develop Hydraulic Data	Perform Independent QA/QC: Hydraulic Data	Perform Floodplain Mapping (inc. Redelineation)	Perform Independent QA/QC: Floodplain Mapping	Develop FIRM Database	Develop Non-Regulatory Products	Produce/Distribute Preliminary Map Products	Post-Preliminary Map Production
Guidelines and Specifications for Flood Hazard Mapping Partners and Procedure Memorandums	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Applicable Guidance	Activities																
	Perform Discovery Outreach	Perform Field Survey	Develop Topographic Data	Perform Independent QA/QC: Topographic Data	Acquire Base Map	Coastal Analysis	Perform Independent QA/QC: Coastal Analysis	Develop Hydrologic Data	Perform Independent QA/QC: Hydrologic Data	Develop Hydraulic Data	Perform Independent QA/QC: Hydraulic Data	Perform Floodplain Mapping (inc. Redelineation)	Perform Independent QA/QC: Floodplain Mapping	Develop FIRM Database	Develop Non-Regulatory Products	Produce/Distribute Preliminary Map Products	Post-Preliminary Map Production
FEMA's Geospatial Data Coordination Policy	X		X		X												
FEMA's Geospatial Data Coordination Implementation Guide	X		X		X												
Engineer Manual 1110-2-1003, <i>Hydrographic Surveys</i> (USACE), January 1, 2002	X	X															
"Numerical Models Accepted by FEMA for NFIP Usage," Updated April 2003	X					X	X	X	X	X	X						
NFIP Metadata Profile Specifications	X		X	X								X	X	X	X	X	X
<i>Document Control Procedures Manual</i>	X	X													X		X
44 Code of Federal Regulations Parts 65, 66 and 67	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Data Sharing Agreement</i>																	

**Table 5.2 – Applicable Volume, Section/Subsection, and Appendix
Project Activities and Applicable Portions of FEMA Guidelines and Specifications**

Activity Description	Applicable Volume, Section/Subsection, and Appendix
Perform Discovery	Volume 1
	Appendix I
	Discovery Report document
	OG 1-11: Risk MAP Guidance for Incorporating Mitigation Planning Technical Assistance and Training into Flood Risk Projects
	OG 2-11: Operating Guidance for Creation of Risk MAP Products
	OG 4-11: Risk Map Meetings Guidance
	PM 56, 59, 63
	CNMS User's Guide
	CNMS Data Model
	"NVUE: Calculation Guidance under Risk MAP"
	44 Code of Federal Regulations Part 66 and 67

Activity Description	Applicable Volume, Section/Subsection, and Appendix
Outreach	Volume I
	Appendix I
	OG 4-11: Risk MAP Meetings Guidance
Develop Non-Regulatory Products	Appendices N and O (draft) September 2011
	PM 59 and 65
	OG 1-11: Risk MAP Guidance for Incorporating Mitigation Planning Technical Assistance and Training into Flood Risk Projects
	OG 2-11: Operating Guidance for Creation of Risk MAP Products
	OG 3-11: Communicating Flood Risk with Risk MAP Datasets and Products
	OG 6-11: User Guidance for Flood Risk Datasets and Products
	"Risk MAP Products in the MIP" (March 4, 2011)

Activity Description	Applicable Volume, Section/Subsection, and Appendix
Perform Field Survey	Volume 1
	Appendices A, B, C, F, and M
Develop Topographic Data and Perform Independent QA/QC: Topographic Data	Volume 1
	Appendices A and M
	PM 61
Acquire Base Map and Perform Independent QA/QC: Base Map	Volume 1
	Appendices A, K, L, N and O
Develop Hydrologic Data and Perform Independent QA/QC: Hydrologic Data	Volume 1
	Appendices A, C, E, F, G, H, and M
	PM 59

Activity Description	Applicable Volume, Section/Subsection, and Appendix
Develop Hydraulic Data and Perform Independent QA/QC: Hydraulic Data	Volume I
	Appendices A, B, C, E, F, G, H, and M
	PM 34, 43, 51, 52, 53, 59, 63
Perform Coastal Analysis Hazard Analyses and Perform Independent QA/QC: Coastal Analysis	Volume I
	Appendices A, B, C, D, H, and M
	"Coastal Guidelines Updates"
	PM 47
	OG 7-11: Application of TAW Runup Methodology to FEMA Needs
	OG 8-11: Joint Probability – Optimal Sampling Method for Tropical Storm Surge Frequency Analysis

Activity Description	Applicable Volume, Section/Subsection, and Appendix
Perform Floodplain Mapping and Perform Independent QA/QC: Floodplain Mapping (including Redelination/Digitalization)	Volume 1
	Appendices C, D, E, F, G, H, K, L, and M
	PM 51, 52, 53 and 56
	CNMS User's Guide
	CNMS data model
	"NVUE: Calculation Guidance under Risk MAP"
Develop FIRM Database	Volume 1
	Appendices K, L and M
	PM 42, 56
	Volume 1
	Appendices K, L, and M

Activity Description	Applicable Volume, Section/Subsection, and Appendix
Produce Preliminary Map Products and Perform Independent QA/QC: Produce Preliminary Map Products	PM 50, 51 and 56
	CNMS User's Guide
	CNMS data model
	"NVUE: Calculation Guidance under Risk MAP"
Distribute Preliminary Map Products and Perform Independent QA/QC: Distribute Preliminary Map Products	Volume 1
	Appendices J, K, L, and M
	PM 44, 56 and 57
	CNMS User's Guide
	CNMS data model
	"NVUE: Calculation Guidance under Risk MAP"

Activity Description	Applicable Volume, Section/Subsection, and Appendix
Post-Preliminary Map Production	Volume I
	Appendices J, K, L, and M
	PM 42, 44, 56, 57, 62
	CNMS User's Guide
	CNMS data model
	"NVUE: Calculation Guidance under Risk MAP"

6 SCHEDULE

The activities documented in this MAS shall be completed in accordance with Table 6.1(a-c) Project Activities Schedule, which should drive the schedule within the MIP. If changes to this schedule are required, the CTP shall coordinate with FEMA and the PMT in a timely manner.

**Table 6.1a – Brawley and Black Wash Detailed Risk Analysis and Mapping
Project Activities Schedule**

ACTIVITIES	RESPONSIBLE PARTNER(S)	Estimated START DATE	Estimated END DATE
Project Management	Pima County, Unincorporated (040073)	1/1/2020	7/1/2022
Perform Field Surveys	Pima County, Unincorporated (040073)	2/1/2020	8/1/2020
Develop Topographic Data	Pima County, Unincorporated (040073)	2/1/2020	5/1/2020
Basemap Preparation	Pima County, Unincorporated (040073)	4/1/2020	7/1/2021
Develop Hydrologic and Hydrologic Data	Pima County, Unincorporated (040073)	2/1/2020	1/1/2022
Develop Non-Regulatory Products	Pima County, Unincorporated (040073)	2/1/2020	1/1/2022

ACTIVITIES	RESPONSIBLE PARTNER(S)	Estimated START DATE	Estimated END DATE
Perform Floodplain Mapping	Pima County, Unincorporated (040073)	8/1/2021	6/1/2021
Develop FIRM Database	Pima County, Unincorporated (040073)	11/1/2021	3/1/2022

**Table 6.1b – Southern Santa Cruz River PMR
Project Activities Schedule**

ACTIVITIES	RESPONSIBLE PARTNER(S)	Estimated START DATE	Estimated END DATE
Project Management	Pima County, Unincorporated (040073)	1/1/2020	1/1/2022
Perform Field Surveys	Pima County, Unincorporated (040073)	2/1/2020	7/1/2020
Develop Topographic Data	Pima County, Unincorporated (040073)	N/A	N/A
Basemap Preparation	Pima County, Unincorporated (040073)	4/1/2020	8/1/2020
Develop Hydrologic and Hydrologic Data	Pima County, Unincorporated (040073)	2/1/2020	11/1/2020
Develop Non-Regulatory Products	Pima County, Unincorporated (040073)	2/1/2020	11/1/2020
Perform Floodplain Mapping	Pima County, Unincorporated (040073)	10/1/2020	6/1/2021
Develop FIRM Database	Pima County, Unincorporated (040073)	10/1/2020	6/1/2021

**Table 6.1c – Sabino Creek and Bear Canyon Wash Detailed Risk Analysis and Mapping
Project Activities Schedule**

ACTIVITIES	RESPONSIBLE PARTNER(S)	Estimated START DATE	Estimated END DATE
Project Management	Pima County, Unincorporated (040073)	1/1/2020	1/1/2022
Perform Field Surveys	Pima County, Unincorporated (040073)	1/1/2022	9/1/2020
Develop Topographic Data	Pima County, Unincorporated (040073)	2/1/2020	5/1/2021
Basemap Preparation	Pima County, Unincorporated (040073)	4/1/2020	6/1/2021
Develop Hydrologic and Hydrologic Data	Pima County, Unincorporated (040073)	2/1/2020	6/1/2021
Develop Non-Regulatory Products	Pima County, Unincorporated (040073)	3/1/2020	6/1/2021
Perform Floodplain Mapping	Pima County, Unincorporated (040073)	2/1/2020	6/1/2021
Develop FIRM Database	Pima County, Unincorporated (040073)	10/1/2020	8/1/2021

The CTP will coordinate with FEMA, or its designee, to develop a baseline schedule for individual project activities. FEMA or its designee will utilize the individual project task schedule, create the Flood Risk Project in the MIP and baseline the project activities with schedule and cost information within 30 days of the funds being awarded and FEMA's approval of the final cost and schedule. The baseline schedule for individual project activities may be re-baselined in the MIP with approval from the FEMA Project Officer, and does not require a change to this MAS unless the overall project end date is modified.

7 CERTIFICATIONS

Data Capture Standards

Data Capture Standards (DCS) are being updated. DCS updates will be provided by FEMA Region IX.

Perform Field Surveys and Develop Topographic Data

A Registered Professional Engineer or Licensed Land Surveyor shall provide an accuracy statement for field surveys and/or topographic data used and shall certify these data meet the accuracy statement provided. Data accuracy should be stated used the Federal Geographic Data Committee National Standards for Spatial Data Accuracy, but the American Society for Photogrammetry and Remote Sensing accuracy reporting standards are acceptable.

Prepare Basemap

A community official or responsible party shall provide written certification that the digital data meets FEMA minimum standards and specifications;

The CTP shall provide documentation that the digital base map can be used by FEMA and freely made available to the public. Note that uploading basemap data to the MIP does not constitute agreement that the digital basemap can be used by FEMA. Documentation that the digital basemap can be used by FEMA is still required; and

Certifications are required at the time the intermediate or final data is submitted.

Develop Hydrologic Data, Develop Hydraulic Data, Perform Coastal Analysis, and Perform Floodplain Mapping

A Registered Professional Engineer shall certify hydrologic and hydraulic and coastal analyses and data in accordance with 44 CFR 65.6(f);

Any levee systems to be accredited will be certified by the levee owner or other appropriate entity in accordance with 44 CFR 65.10; and

Certifications are required at the time the intermediate or final data is submitted.

8 TECHNICAL ASSISTANCE AND RESOURCES

Project Team members may obtain copies of FEMA-issued LOMCs, archived engineering backup data, and data collected as part of the Coordinated Needs Management Strategy (CNMS) process from FEMA and/or your Regional Project Officer.

General technical and programmatic information can be found in various FEMA websites including but not necessarily limited to:

Guidelines and Standards for Flood Risk Analysis and Mapping:

<https://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping>

Guidance Documents: <https://www.fema.gov/media-library/assets/documents/34953>

Specific technical and programmatic support may be provided through FEMA and/or its contractor; such assistance should be requested through the FEMA Project Officer specified in Section 12 – Points of Contact.

9 CONTRACTORS

The CTP intends to use the services of the following engineering firms as contractors for this Flood Risk Project:

1. Brawley and Black Wash Detailed Risk Analysis and Mapping
CTP Contractor: ~~To be determined through procurement processes.~~
2. Southern Santa Cruz River PMR
CTP Contractor: ~~To be determined through procurement processes.~~
3. Sabino Creek and Bear Canyon Wash Detailed Risk Analysis and Mapping
4. CTP Contractor: ~~To be determined through procurement processes.~~

No transfer of funds to agencies other than those identified in the approved cooperative agreement application shall be made without prior approval from FEMA. The CTP shall ensure that the procurement for all contractors used for this Flood Risk Project complies with the requirements of 44 CFR 13.36.

Guidance provided in this part includes, but not limited to, contract administration and record keeping, notification requirements, review procedures, competition, methods of procurement, and cost and pricing analysis. 44 CFR Part 13 may be downloaded in PDF or text format from the U.S. Government Printing Office web site at <http://www.gpo.gov/fdsys/pkg/CFR-2012-title44-vol1/content-detail.html>. Additionally, contractors must not pose a conflict of interest issue.

Part 13 may be downloaded in PDF or text format from the United States Government Printing Office website.

OR

The CTP does not intend to use the services of a contractor for the Flood Risk Project documented in this MAS. No transfer of funds to agencies other than those identified in the approved cooperative agreement application shall be made without prior approval from FEMA. The CTP shall ensure that the procurement for all contractors, if any, are used for this Flood Risk Project complies with the requirements of 2 CFR 200.

Guidance provided in this part includes, but not limited to, contract administration and record keeping, notification requirements, review procedures, competition, methods of procurement, and cost and pricing analysis. 2 CFR Part 200 may be downloaded in PDF or text format from the U.S. Government Printing Office web site at <https://www.govinfo.gov/app/details/CFR-2014-title2-vol1/CFR-2014-title2-vol1-part200><https://www.govinfo.gov/app/details/CFR-2014-title2-vol1/CFR-2014-title2-vol1-part200>. Additionally, contractors must not pose a conflict of interest.

Part 13 may be downloaded in PDF or text format from the United States Government Printing Office website

10 REPORTING

Financial Reporting: Because funding has been provided to the CTP by FEMA, financial reporting requirements for the CTP will be in accordance with the terms of the Cooperative Agreement Funding Opportunity Announcement, Articles of Agreement or Award Notice for this MAS. The CTP shall also refer to 2 CFR 200. The CTP shall provide financial reports to the FEMA Regional Project Officer and Assistance Officer in accordance with the terms of the signed Cooperative Agreement for this MAS.

Performance Reporting: Recipients are responsible for providing updated performance reports using the SF-PPR on a quarterly basis throughout the period of performance, including partial calendar quarters as well as for periods where no grant award activity occurs. The CTP shall refer to 2 CFR 200 to obtain minimum requirements for progress reporting. The Project Officer, as needed, may request additional information on progress.

The CTP may meet with FEMA and/or its contractor(s) as frequently as needed to review the progress of the project in addition to the quarterly financial and status submittals. These meetings may alternate between FEMA's Regional Office, the CTP office, and conference calls, as necessary.

The CTP must report performance of the grant in conjunction with the progress reporting. The performance of the CTP is measured by the following criteria. Quantitative Targets for performance measures will be defined between you and your FEMA Region and amended to the MAS when completed. See Table 10 – Performance Measures and Targets.

Table 10 – Performance Measures and Targets

Measure	Target
Continued maintenance of the processes or systems in place to support the collection, development, evaluation, dissemination and communication of flood hazard and risk assessment data and mapping (e.g., continued data collection related to changes in flood hazards and development in flood-prone areas; continued upgrades to data collection or mapping capabilities to incorporate new technologies; preparation of multiple-year mapping or data collection plans; maintenance of hardware, software, licenses and certifications, etc., necessary to complete, review, monitor and report on the work; etc.).	Identify the level of support you have provided via the previous quarter and show cumulative for the project.
Management and commitment to existing, and continued support of, flood hazard identification and mapping activities and other program activities (such as risk assessments, risk communication and technical assistance for mitigation action) conducted with and by FEMA.	Identify what tasks from MAS complete and funds expended.
Uniqueness and value of the national, State, regional or local relationships maintained, including ability to effectively cooperate and coordinate with NFIP stakeholders as well as other whole community stakeholders affected by program activities.	Provide a statement of some of the unique value that has been provided by this cooperative agreement.
Adherence to statutory and regulatory requirements as well as program standards for timeliness, completeness and quality of project activities and deliverables submitted to FEMA and/or provided to the public.	Report on QR submittals and if there was delivery of any products to communities that had errors. If so, identify any corrective actions plans that you and the Region determined for said issue.
Demonstrated quality of product(s) submitted to FEMA and/or provided to the public.	
Advancement of program metrics and/or accomplishment of project performance measures	Report on SPI and CPI. Must be between 0.92 and 1.08. If it is not, provide information on what is being done to correct the problem.
Ability to cooperate and coordinate with the staff of the following organizations during all phases of project activities as needed: the FEMA Regional Offices; the Federal Insurance and Mitigation Administration in the FEMA Headquarters Office in Washington, DC; and designated FEMA contractors.	Provide statement certifying that communication throughout the Risk MAP project has been completed in conjunction with the entities listed.

The CTP shall communicate with communities throughout the life of each project. Continued engagement is necessary and appropriate and will build upon the relationships established or

enhanced during Discovery and provide transparency into the Risk MAP process. This may occur through monthly or quarterly updates or project status calls with community leaders, project websites including updates at several milestones or along a specific timeline, or other methods.

Earned Value Data Entry: Once the FEMA Regional Office has issued the MAS, the baseline for the project will be established in the MIP using the cost and schedule information for each task as agreed upon by the FEMA Regional Office and the CTP. The Cost Performance Index (CPI) and the Schedule Performance Index (SPI) in the MIP must be used to monitor partner performance and to determine future funding eligibility. Recipients must adhere to the performance requirements by maintaining a 0.92 score for both CPI and SPI.

The CTP is required to report on the earned value of projects that are in the MIP on a monthly basis and must give explanations for variances outside of the tolerance defined above. FEMA Regional Offices must implement a Corrective Action Plan (CAP) when a CTP partner is outside of the tolerance. A CAP must define the reason for the variance and the intended resolution. FEMA Regional Offices must coordinate with FEMA Headquarters when CAPs are developed.

As Program Management tasks are not conducted in the MIP, cost and schedule performance measures must be defined and documented in the MAS or scope of work statement. These measures must be used to monitor partner performance and to determine future funding eligibility. This exception only applies to tasks not able to be conducted or tracked in the MIP.


11 PROJECT COORDINATION

Throughout the project, all members of the Project Team will coordinate, as necessary, to ensure the products meet the technical and format specifications required and contain accurate, up-to-date information. Coordination activities may include:

- As-needed meetings, teleconferences, and video conferences with FEMA and other Project Team members;
- Telephone conversations with FEMA and other Project Team members on a to-be-determined basis, and an ad hoc basis, as required;
- Updates to the MIP and other FEMA status information systems in accordance with FEMA standards and requirements; and
- E-mail, facsimile transmissions, and letters, as required.

12 POINTS OF CONTACT

The Points of contact for this Flood Risk Project are Ed Curtis, the FEMA Project Officer; Terry Hendricks, CTP Project Manager; or subsequent personnel of comparable experience who are appointed to fulfill the responsibilities. When Necessary, any additional FEMA assistance should be requested through the FEMA Region IX Project Officer.


Suzanne Shields, P.E., Director
Pima County Regional Flood Control District

6/17/19
Date

Michael Bishop,
FEMA Region IX Project Officer

7/16/2019

Date



FULLE-1

OP ID: JM

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

08/18/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Professional Underwriters of Arizona, Inc. P.O. Box 5419 Scottsdale, AZ 85261-5419 Prof. Underwriters of Arizona	480-483-0440	CONTACT NAME: Prof. Underwriters of Arizona	PHONE (A/C, No, Ext): 480-483-0440	FAX (A/C, No): 480-948-7752
			E-MAIL ADDRESS: Jeff@prounderwriters.com	
		INSURER(S) AFFORDING COVERAGE		NAIC #
		INSURER A: RLI Insurance Company		13056
		INSURER B:		
		INSURER C:		
		INSURER D:		
		INSURER E:		
		INSURER F:		

INSURED
JE Fuller Hydrology &
Geomorphology, Inc.
8400 S. Kyrene Rd #201
Tempe, AZ 85284

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Bikt AI & WOS <input checked="" type="checkbox"/> Contractual Liab. GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	X	X	PSB0001060	05/01/2020	05/01/2021	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 4,000,000 PRODUCTS - COMP/OP AGG \$ 4,000,000
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> Bikt AI <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY <input checked="" type="checkbox"/> Bikt WOS	X	X	PSA0001109	05/01/2020	05/01/2021	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> EXCESS LIAB DED RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	PSW0001941	05/01/2020	05/01/2021	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	Professional Liab. Architect/Engineer		X	RDP0039746 RETRO 1/27/95	05/01/2020	05/01/2021	Per Claim \$ 2,000,000 Ann. Agg. \$ 4,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Brawley and Black Wash Detailed Risk Analysis and Mapping
Pima County Regional Flood Control District and the Federal Emergency Management Administration (FEMA), their departments, districts, boards, commissions, officers, officials, agents, and employees are additional insured as indicated. Coverages afforded are primary and (Cont'd)

CERTIFICATE HOLDER

CANCELLATION

PIMAC05

Pima County Procurement
Design & Construction
150 W. Congress St., 5th FL
Tucson, AZ 85701

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

NOTEPAD:

HOLDER CODE PIMAC05
INSURED'S NAME JE Fuller Hydrology &

FULLE-1
OP ID: JM

PAGE 2
Date 08/18/2020

non-contributory basis. Waiver of subrogation included.

Attached:

PPB304 02 12
PPA300 03 13
WC000313

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**RLIPack® FOR PROFESSIONALS
BLANKET ADDITIONAL INSURED ENDORSEMENT**

This endorsement modifies insurance provided under the following:

BUSINESSOWNERS COVERAGE FORM - SECTION II - LIABILITY

1. **C. WHO IS AN INSURED** is amended to include as an additional insured any person or organization that you agree in a contract or agreement requiring insurance to include as an additional insured on this policy, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused in whole or in part by you or those acting on your behalf:

- a. In the performance of your ongoing operations;
- b. In connection with premises owned by or rented to you; or
- c. In connection with "your work" and included within the "product-completed operations hazard".

2. The insurance provided to the additional insured by this endorsement is limited as follows:

- a. This insurance does not apply on any basis to any person or organization for which coverage as an additional insured specifically is added by another endorsement to this policy.
- b. This insurance does not apply to the rendering of or failure to render any "professional services".
- c. This endorsement does not increase any of the limits of insurance stated in **D. Liability And Medical Expenses Limits of Insurance**.

3. The following is added to **SECTION III H.2. Other Insurance - COMMON POLICY CONDITIONS (BUT APPLICABLE ONLY TO SECTION II - LIABILITY)**

However, if you specifically agree in a contract or agreement that the insurance provided to an

additional insured under this policy must apply on a primary basis, or a primary and non-contributory basis, this insurance is primary to other insurance that is available to such additional insured which covers such additional insured as a named insured, and we will not share with that other insurance, provided that:

- a. The "bodily injury" or "property damage" for which coverage is sought occurs after you have entered into that contract or agreement; or
- b. The "personal and advertising injury" for which coverage is sought arises out of an offense committed after you have entered into that contract or agreement.

4. The following is added to **SECTION III K. 2. Transfer of Rights of Recovery Against Others to Us - COMMON POLICY CONDITIONS (BUT APPLICABLE ONLY TO SECTION II - LIABILITY)**

We waive any rights of recovery we may have against any person or organization because of payments we make for "bodily injury", "property damage" or "personal and advertising injury" arising out of "your work" performed by you, or on your behalf, under a contract or agreement with that person or organization. We waive these rights only where you have agreed to do so as part of a contract or agreement with such person or organization entered into by you before the "bodily injury" or "property damage" occurs, or the "personal and advertising injury" offense is committed.

ALL OTHER TERMS AND CONDITIONS OF THIS POLICY REMAIN UNCHANGED.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

RLIPack[®] BUSINESS AUTO ENHANCEMENT

SCHEDULE OF COVERAGES ADDRESSED BY THIS ENDORSEMENT

- A. Broad Form Named Insured**
- B. Employees As Insureds**
- C. Blanket Additional Insured**
- D. Blanket Waiver Of Subrogation**
- E. Employee Hired Autos**
- F. Fellow Employee Coverage**
- G. Auto Loan Lease Gap Coverage**
- H. Glass Repair – Waiver Of Deductible**
- I. Personal Effects Coverage**
- J. Hired Auto Physical Damage Coverage**
- K. Hired Auto Physical Damage – Loss Of Use**
- L. Hired Car – Worldwide Coverage**
- M. Temporary Transportation Expenses**
- N. Amended Bodily Injury Definition – Mental Anguish**
- O. Airbag Coverage**
- P. Amended Insured Contract Definition – Railroad Easement**
- Q. Coverage Extensions – Audio, Visual And Data Electronic Equipment Not Designed Solely For The Production Of Sound**
- R. Notice Of And Knowledge Of Occurrence**
- S. Unintentional Errors Or Omissions**
- T. Towing Coverage**

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

A. Broad Form Named Insured

The following is added to the **SECTION II – LIABILITY Coverage**, Paragraph **A.1. Who Is An Insured** Provision:

Any business entity newly acquired or formed by you during the policy period, provided you own fifty percent (50%) or more of the business entity and the business entity is not separately insured for Business Auto Coverage. Coverage is extended up to a maximum of one hundred eighty (180) days following the acquisition or formation of the business entity.

This provision does not apply to any person or organization for which coverage is excluded by endorsement.

B. Employees As Insureds

The following is added to the **SECTION II – LIABILITY COVERAGE**, Paragraph **A.1. Who Is An Insured** Provision:

Any "employee" of yours is an "insured" while using a covered "auto" you don't own, hire or borrow in your business or your personal affairs.

C. Blanket Additional Insured

The following is added to the **SECTION II – LIABILITY COVERAGE**, Paragraph **A.1. Who Is An Insured** Provision:

Any person or organization that you are required to include as an additional insured on this coverage form in a contract or agreement that is executed by you before the "bodily injury" or "property damage" occurs is an "insured" for liability coverage, but only for damages to which this insurance applies and only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured provision contained in **SECTION II – LIABILITY COVERAGE**.

The insurance provided to the additional insured will be on a primary and non-contributory basis to the additional insured's own business auto coverage if you are required to do so in a contract or agreement that is executed by you before the "bodily injury" or "property damage" occurs.

D. Blanket Waiver Of Subrogation

The following is added to the **SECTION IV – BUSINESS AUTO CONDITIONS**, **A. Loss Conditions**, **5. Transfer Of Rights Of Recovery Against Others To Us**:

We waive any right of recovery we may have against any person or organization to the extent required of you by a contract executed prior to any "accident" or

"loss", provided that the "accident" or "loss" arises out of the operations contemplated by such contract. The waiver applies only to the person or organization designated in such contract.

E. Employee Hired Autos

1. The following is added to the **SECTION II – LIABILITY COVERAGE**, Paragraph **A.1. Who Is An Insured** Provision:

An "employee" of yours is an "insured" while operating an "auto" hired or rented under a contract or agreement in that "employee's" name, with your permission, while performing duties related to the conduct of your business.

2. Changes In General Conditions:

Paragraph **5.b.** of the **Other Insurance** Condition in the **BUSINESS AUTO CONDITIONS** is deleted and replaced with the following:

b. For Hired Auto Physical Damage Coverage, the following are deemed to be covered "autos" you own:

(1) Any covered "auto" you lease, hire, rent or borrow; and

(2) Any covered "auto" hired or rented by your "employee" under a contract in that individual "employee's" name, with your permission, while performing duties related to the conduct of your business. However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

F. Fellow Employee Coverage

SECTION II – LIABILITY COVERAGE, **Exclusion B.5.** does not apply if you have workers compensation insurance in-force covering all of your employees.

G. Auto Loan Lease Gap Coverage

SECTION III – PHYSICAL DAMAGE COVERAGE, **C. Limit Of Insurance**, is amended by the addition of the following:

In the event of a total "loss" to a covered "auto" shown in the Schedule of Declarations, we will pay any unpaid amount due on the lease or loan for a covered "auto", less:

1. The amount paid under the **PHYSICAL DAMAGE COVERAGE** section of the policy; and

2. Any:

a. Overdue lease/loan payments at the time of the "loss";

- b. Financial penalties imposed under a lease for excessive use, abnormal wear and tear or high mileage.
- c. Security deposits not returned by the lessor;
- d. Costs for extended warranties, Credit Life Insurance, Health, Accident or Disability Insurance purchased with the loan or lease; and
- e. Carry-over balances from previous loans or leases.

H. Glass Repair – Waiver Of Deductible

SECTION III – PHYSICAL DAMAGE COVERAGE, D. Deductible is amended by adding the following:

No deductible for a covered "auto" will apply to glass damage if the glass is repaired rather than replaced.

I. Personal Effects Coverage

The following is added to **SECTION III – PHYSICAL DAMAGE COVERAGE, A. Coverage, 4. Coverage Extensions:**

c. Personal Effects Coverage

In the event of a total theft loss of your covered "auto" we will pay up to \$400 for "loss" to wearing apparel and other personal effects which are:

- (1) Owned by an "insured"; and
- (2) In or on your covered "auto";

No deductible applies to Personal Effects Coverage.

J. Hired Auto Physical Damage Coverage

The following is added to **SECTION III – PHYSICAL DAMAGE COVERAGE, A. Coverage, 4. Coverage Extensions:**

d. Hired Auto Physical Damage Coverage

If hired "autos" are covered "autos" for Liability Coverage and this policy also provides Physical Damage Coverage for an owned "auto", then the Physical Damage Coverage is extended to "autos" that you hire, rent or borrow subject to the following:

- (1) The most we will pay for "loss" in any one "accident" to a hired, rented or borrowed "auto" is the lesser of:
 - (a) \$60,000
 - (b) The actual cash value of the damaged or stolen property as of the time of the "loss"; or
 - (c) The cost of repairing or replacing the damaged or stolen property with other property of like kind and quality.

- (2) An adjustment for depreciation and physical condition will be made in the event of a total "loss".
- (3) If a repair or replacement results in better than like kind or quality, we will not pay for the betterment.
- (4) A deductible equal to the highest Physical Damage deductible applicable to any owned auto will apply.
- (5) This Coverage Extension will not apply to:
 - (a) Any "auto" that is hired, rented or borrowed with a driver; or
 - (b) Any "auto" that is hired, rented or borrowed from your "employee".

K. Hired Auto Physical Damage – Loss Of Use

The following is added to **SECTION II – LIABILITY COVERAGE, A.2. Coverage Extensions:**

- e. We will pay sums which you legally must pay to the lessor of a covered "auto" which you have leased without a driver for thirty (30) days or less for the lessor's loss of use of the covered "auto", provided:

- (1) This insurance provides comprehensive, specified causes of loss or collision covered on the covered "auto";
- (2) The loss of use results from the covered "auto" being damaged in an "accident" while you are leasing it.

We will pay up to a maximum limit of \$1,500 for this covered extension.

L. Hired Car – Worldwide Coverage

The following is added to **SECTION II – LIABILITY COVERAGE, A.2. Coverage Extensions:**

f. Hired Car – Worldwide Coverage

- (1) We will pay all sums an "insured" legally must pay as damages because of "bodily injury" or "property damage" to which this insurance applies, caused by an "accident" which occurs outside of the United States of America, the territories and possessions of the United States of America, Puerto Rico and Canada resulting from the maintenance, or use of any covered "auto" of the private passenger type you lease, hire, rent or borrow without a driver for thirty (30) days or less.
- (2) With respect to any claim made or "suit" instituted outside the United States of America, the territories and possessions of the United States of America, Puerto Rico, and Canada:

- (a) You shall undertake the investigation, settlement and defense of such claims and "suits" and keep us advised of all proceedings and actions.
- (b) You will not make any settlement without our consent.
- (c) We will reimburse you:
 - (i) For the amount of damages because of liability imposed upon you by law on account of "bodily injury" or "property damage" to which this insurance applies, and
 - (ii) For all reasonable expenses incurred with our consent in connection with the investigation, settlement or defense of such claims or "suits". Reimbursement for expenses will be part of the Limit of Insurance for liability coverage shown in the Business Auto Coverage Declarations, and not in addition to such limits.
- (3) The limit of Insurance for Liability Coverage shown in the Business Auto Coverage Declarations is the most we will reimburse you for the sum of all damages imposed on you, as set forth in paragraph 2.c. above, and all expenses incurred by you arising out of any single "accident" or "loss".
- (4) You must maintain the greater of the following primary auto liability insurance limits:
 - (a) Compulsory admitted insurance with limits required to be in force to satisfy the legal requirements of the jurisdiction where the accident occurs; or
 - (b) Insurance limits required by law and issued by a government entity or by an insurer licensed or permitted by law to do business in the jurisdiction where the "accident" occurs; or
 - (c) Auto liability insurance limits of at least \$300,000 combined single limit or \$100,000 per person/\$300,000 per accident Bodily Injury, \$100,000 Property Damage.

If you fail to comply with the above, this insurance is not invalidated. However, in the event of a "loss", we will pay only to the extent that we would have been liable had you so complied.

- (5) The insurance provided by this coverage extension is excess over any other collectible insurance available to you whether on a primary, excess contingent or any other basis.

M. Temporary Transportation Expenses

SECTION III – PHYSICAL DAMAGE COVERAGE, A.4. Coverage Extensions, subparagraph **a. Transportation Expenses** is deleted and replaced by the following:

a. Transportation Expenses

- (1) We will pay up to a maximum of \$1,500 for temporary transportation expense incurred by you because of Physical Damage to a covered "auto".
- (2) We will pay only for those covered "autos" for which you carry Comprehensive, Collision or Specified Case of Loss Coverage.
- (3) We will pay only for those expenses incurred by you during the period of time that begins twenty-four (24) hours after the covered "loss" and ends at the time when the covered "auto" can be reasonably repaired or replaced.
- (4) This coverage does not apply while there are spare or reserve "autos" available to you for your operations.

N. Amended Bodily Injury Definition – Mental Anguish

The following is added to **SECTION V – DEFINITIONS, Definition C.**:

"Bodily injury" also includes mental anguish, but only when the mental anguish arises from other bodily injury, sickness or disease.

O. Airbag Coverage

The following is added to **SECTION III – PHYSICAL DAMAGE COVERAGE B. Exclusions 3.a.**:

However, this exclusion will not apply to accidental discharge of an airbag due to mechanical or electrical breakdown.

P. Amended Insured Contract Definition – Railroad Easement

SECTION V – DEFINITIONS paragraph H. "Insured contact" is modified as follows:

- 1. Paragraph H.3. is replaced by the following:
 - 3. Any easement or license agreement.
- 2. Paragraph H.6.a. is deleted.

Q. Coverage Extensions – Audio, Visual And Data Electronic Equipment Not Designed Solely For The Production Of Sound

SECTION III – PHYSICAL DAMAGE COVERAGE B. Exclusions, exception paragraph a. to exclusion 4.c. and 4.d. is deleted and replaced with the following:

- a. Equipment and accessories used with such equipment, except for tapes, records, discs or other electronic media device, provided such equipment is permanently installed in the covered "auto" at the time of the "loss" or is removable from the housing unit which is permanently installed in the covered "auto" at the time of the "loss", and such equipment is designed to be solely operated by use of the power from the "autos" electrical system, in or upon the covered "autos"; or

R. Notice Of And Knowledge Of Occurrence

SECTION IV – BUSINESS AUTO CONDITIONS, A.2. Duties In The Event Of Accident, Claim Suit Or Loss, subparagraph a. is deleted and replaced with the following:

- a. In the event of "accident", claim, "suit" or "loss", you must give us or our authorized representative prompt notice of the "accident" or "loss" including:

- (1) How, when and where the "accident" or "loss" occurred;
- (2) The "insured's" name and address; and
- (3) To the extent possible, the names and addresses of any injured person and witnesses.

Your duty to give us or our authorized representative prompt notice of the "accident" or "loss" applies only when the "accident" or "loss" is known to:

- (1) You, if you are an individual;
- (2) A partner if you are a partnership; or

- (3) An executive officer or insurance manager, if you are a corporation.

S. Unintentional Errors Or Omissions

SECTION IV – BUSINESS AUTO CONDITIONS, B. General Conditions; 2. Concealment Misrepresentation Or Fraud is amended by adding the following:

The unintentional omission of, or unintentional error in, any information given by you shall not prejudice your rights under this insurance. However this provision does not affect our right to collect additional premium or exercise our right of cancellation or nonrenewal.

T. Towing Coverage

SECTION III – PHYSICAL DAMAGE COVERAGE, A.2. Towing, is deleted and replaced by the following:

- 2. We will pay up to \$750 for towing and labor costs incurred each time a covered "auto" is disabled due to a covered cause of loss. However:
 - a. All labor must be performed at the place of disablement; and
 - b. If the covered auto is a private passenger type no deductible applies; and
 - c. If the covered auto is not of the private passenger type our obligation to pay will be reduced by a \$250 deductible per disablement.

ALL OTHER TERMS AND CONDITIONS OF THIS POLICY REMAIN UNCHANGED.

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

Any person or organization that you have agreed with in a written contract to provide this agreement.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement Effective 05-01-2020.

Insured

JE Fuller Hydrology and Geomorphology, Inc.
Insurance Company

RLI Insurance Company

Policy No.

PSW0001941

Endorsement No.

Premium

Countersigned by _____

WC 00 03 13

(Ed. 4-84)