

# Board of Supervisors

**Ann English**  
Chairman

**Richard R. Searle**  
Vice-Chairman

**Patrick G. Call**  
Director



**Michael J. Ortega**  
County Administrator

**James E. Vlahovich**  
Deputy County Administrator

Clerk of the Board

**AGENDA FOR FLOOD CONTROL DISTRICT MEETING**  
**Tuesday, May 7, 2013 at 10:00 a.m.**  
BOARD OF SUPERVISORS HEARING ROOM  
1415 MELODY LANE, BUILDING G, BISBEE, AZ 85603

ANY ITEM ON THIS AGENDA IS OPEN FOR DISCUSSION AND POSSIBLE ACTION

**ROLL CALL**

*Members of the Cochise County Board of Supervisors will attend either in person or by telephone, video or internet conferencing.*

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**CALL TO THE PUBLIC**

*This is the time for the public to comment. Members of the Board may not discuss items that are not specifically identified on the agenda.*

**CONSENT**

**Board of Supervisors**

1. Approve Minutes of the February 26, 2013 Flood Control District meeting.
2. Approve expanded scope of work for Candace Lamoree, Hearing Officer for Zoning Violations, to include Hearing Officer for Floodplain Violations.

**ACTION**

**Community Development**

3. Approve a grant of \$50,000 from The Nature Conservancy (TNC) to help fund a feasibility study for groundwater recharge at Riverstone and a Memorandum of Understanding (MOU) setting forth the parties' responsibilities.
4. Approve Amendment No. 1 to Contract PSA 13-27-HFP-04 with West Consultants to process the Letter of Map Revision (LOMR) document to the Federal Emergency Management Agency (FEMA) to update the floodplain hazard in Fry Townsite in Sierra Vista.

5. Approve funding for one of two options: Option 1) Install three ALERT stations and yearly system maintenance for collecting rainfall data for the total amount of \$34,347 (tasks 1 & 2 in contract), OR Option 2) Install three ALERT stations and yearly system maintenance for collecting rainfall data (tasks 1 & 2 in contract), and adding 8 Arizona Department of Water Resources (ADWR) rain gauge system maintenance (task 3 in contract) of which 4 were installed in the Horseshoe II and Monument Fire areas, for the total amount of \$43,504.

Pursuant to the Americans with Disabilities Act (ADA), Cochise County does not, by reason of a disability, exclude from participation in or deny benefits or services, programs or activities or discriminate against any qualified person with a disability. Inquiries regarding compliance with ADA provisions, accessibility or accommodations can be directed to Chris Mullinax, Safety/Loss Control Analyst at (520) 432-9720, FAX (520) 432-9716, TDD (520) 432-8360, 1415 Melody Lane, Building F, Bisbee, Arizona 85603.

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**Cochise County - 1415 Melody Lane, Building G - Bisbee, Arizona 85603**  
**(520) 432-9200 - Fax (520) 432-5016 - Email: [board@cochise.az.gov](mailto:board@cochise.az.gov)**  
**[www.cochise.az.gov](http://www.cochise.az.gov)**

**"PUBLIC PROGRAMS, PERSONAL SERVICE"**

**Flood Control District Meeting**

**Meeting Date:** 05/07/2013

Approve Minutes

**Submitted By:** Arlethe Rios, Board of Supervisors

**Department:** Board of Supervisors

**Presentation:** No A/V Presentation

**Document Signatures:**

**NAME** n/a  
**of PRESENTER:**

**Mandated Function?:**

**Recommendation:**

**# of ORIGINALS**

**Submitted for Signature:**

**TITLE** n/a  
**of PRESENTER:**

**Source of Mandate  
or Basis for Support?:**

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**Information**

**Agenda Item Text:**

Approve Minutes of the February 26, 2013 Flood Control District meeting.

**Background:**

Minutes

**Department's Next Steps (if approved):**

n/a

**Impact of NOT Approving/Alternatives:**

n/a

**To BOS Staff: Document Disposition/Follow-Up:**

Route signed Minutes to Recorders for microfilming; file original when returned.

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**Attachments**

Minutes

**COCHISE COUNTY FLOOD CONTROL DISTRICT  
MINUTES OF THE MEETING OF FEBRUARY 26, 2013**

A meeting of the Cochise County Flood Control Board was held on Tuesday, February 26, 2013 at 10:00 a.m. in the Board of Supervisors' Hearing Room, 1415 Melody Lane, Building G, Bisbee, Arizona. In attendance were, Ann English, Chairman; Richard Searle, Director; Pat Call, Director; Mike Ortega, County Administrator; Jim Vlahovich, Deputy County Administrator; Britt Hanson, Chief Civil Deputy County Attorney; and Arlethe Rios, Assistant to the Clerk of the Board.

**THE ORDER OR DELETION OF ANY ITEM ON THIS AGENDA IS SUBJECT TO MODIFICATION AT THE MEETING**

**ROLL CALL** – All three directors were present.

The meeting was called to order at 10:02 a.m.

**CALL TO THE PUBLIC** (MATTERS RELATED TO COUNTY GOVERNMENT - LIMIT OF 3 MINUTES PER PERSON OR AT THE DIRECTION OF THE CHAIRMAN)

Chairman English opened the Call to the Public. No one wished to address the Board and Chairman English closed the Call to the Public.

**CONSENT**

**Board of Supervisors**

**ITEM 1**

Approve Minutes of the January 29, 2013 Flood Control District meetings.

Director Searle made a motion to approve item 1 of the Consent Agenda. Director Call seconded the motion and it carried unanimously.

**ACTION**

**Community Development**

**ITEM 2**

Adopt Resolution FCD 13-02 to approve a Federal Lands Grant Application to the Central Federal Lands Highway Division for improvements to the Ash Canyon Creek Crossing on Coronado Memorial Road.

This item was presented by Ms. Karen Lamberton, Transportation Planner, using a PowerPoint presentation. Ms. Lamberton gave the background of the grant and said that staff would focus on the roads in the Chiricahua Mountain area since these projects were ready to go and that was a requirement from the federal government in order to qualify for the grant. She also stated that staff would also focus on culverts and bridges in the area and noted that endorsement letters had been received from the national forest and national park.

Vice-Chairman Searle asked if we had a timeline for this grant.

Mr. Ortega said that he had been chosen to participate in the panel reviewing these grants and that they would be looking at applications within 45 days.

Ms. Lamberton said that they hoped these projects would be started by summer.

Director Call made a motion to adopt Resolution FCD 13-02 to approve a Federal Lands Grant Application to the Central Federal Lands Highway Division for improvements to the Ash Canyon Creek Crossing on Coronado Memorial Road. Director Searle seconded the motion.

Chairman English called for the vote, approved 3-0.

There being no other business before the Flood Control District Board, Chairman English adjourned the meeting at 10:08 a.m.

APPROVED:

\_\_\_\_\_  
Ann English, Chairman

ATTEST:

\_\_\_\_\_  
Katie A. Howard, Clerk of the Board

(SUPPORTING DOCUMENTATION IS AVAILABLE AT THE BOARD OF SUPERVISORS' OFFICE)

**Community Development**

**Flood Control District Meeting**

**Meeting Date:** 05/07/2013

Appoint Candace Lamoree as Floodplain Hearing Officer

**Submitted By:** Britt Hanson, County Attorney

**Department:** County Attorney

**Presentation:** No A/V Presentation

**Recommendation:** Approve

**Document Signatures:** BOS Signature Required

**# of ORIGINALS** 2

**Submitted for Signature:**

**NAME of PRESENTER:** Britt Hanson

**TITLE of PRESENTER:** Chief  
Civil  
Deputy

**Mandated Function?:** Federal or State Mandate

**Source of Mandate or Basis for Support?:**

**Docket Number (If applicable):**

**Information**

**Agenda Item Text:**

Approve expanded scope of work for Candace Lamoree, Hearing Officer for Zoning Violations, to include Hearing Officer for Floodplain Violations.

**Background:**

In December, 2012, the Board of Supervisors approved an Agreement with Candace Lamoree to act as the hearing officer for zoning violations. Under the Floodplain Regulations recently adopted by the Board (in its capacity as the Board of the Flood Control District), the procedure for violations of the Floodplain Regulations requires a hearing officer. Accordingly, we are requesting that the Board expand the scope of work of the Agreement with Ms. Lamoree for her to act as the hearing officer for floodplain violations.

**Department's Next Steps (if approved):**

There are no next steps, except that we will be prepared for a Floodplain violation.

**Impact of NOT Approving/Alternatives:**

The County will not have a hearing officer for Floodplain violations.

**To BOS Staff: Document Disposition/Follow-Up:**

The Board Chair needs to sign the Agreement and return it to Procurement, with copies to Flood Control and the County Attorney.

**Fiscal Impact**

<b>Fiscal Year:</b>	13-14
<b>One-time Fixed Costs? (\$\$\$):</b>	500
<b>Ongoing Costs? (\$\$\$):</b>	500
<b>County Match Required? (\$\$\$):</b>	0
<b>A-87 Overhead Amt? (Co. Cost Allocation \$\$\$):</b>	0
<b>Source of Funding?:</b>	n/a

**Fiscal Impact & Funding Sources (if known):**

n/a

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**Attachments**

Agreement with Lamoree

# **COCHISE COUNTY PROCUREMENT DEPARTMENT**

1415 Melody Lane, Building C, Bisbee, AZ 85603  
Phone: (520) 432-8391 Fax: (520) 432-8397

## **Professional Services Agreement**

### **Hearing Officer**

### **Agreement No. 13-15-P&Z-04**

### **(Amended)**

THIS AGREEMENT is made and entered into this \_\_\_ day of May, 2013 by and between COCHISE COUNTY, and the COCHISE COUNTY FLOOD DISTRICT, hereinafter referred to as the COUNTY, and Candace Lamoree, hereinafter referred to as the HEARING OFFICER.

#### **I. SCOPE OF SERVICES**

Subject to the terms and conditions set forth in this agreement, The Hearing Officer shall provide all services to the satisfaction of the County in accordance with the Scope of Services described in **Exhibit A**.

#### **II. COMPENSATION AND METHOD OF PAYMENT**

In consideration of the performance of the services described in the Scope of Work, the County shall pay the Hearing Officer in accordance with the fee schedule outlined in the solicitation Scope of Work, paragraph C.

The County will pay the Hearing Officer following the submission of itemized invoices(s) for the services rendered. No payment shall be issued prior to receipt of service and correct invoice. Each invoice must bear written certification by an authorized County representative confirming the services for which payment is requested have been performed. County agrees to pay all properly documented invoices, for accepted work within thirty (30) days of receipt.

All notices, invoices and payment shall be made in writing and may be given by personal delivery or by mail. The designated recipients for such notices, invoices and payments are as follows:

Hearing Officer: Candace Lamoree  
28 Black Knob View  
Bisbee, AZ 85603-1902

County: Rick Corley, Zoning Administrator  
Cochise County Community Development Department  
1415 Melody Lane, Bldg "E"  
Bisbee, AZ 85603

### **III. CONTRACT DURATION**

The contract term will be valid from January 1, 2013 through December 31, 2013 with the option to extend on a year to year basis at the County's discretion for a maximum of four (4) additional one (1) year periods.

### **IV. TERMINATION**

- A. The County may cancel this Contract without penalty or further obligation pursuant to A.R.S. §38-511 if any person significantly involved in initiating, negotiating, securing, drafting or creating the Contract on behalf of the County is or becomes, at any time while the Contract or any extension of the Contract is in effect any employee of, or Hearing Officer to any other party to this Contract with respect to the subject matter of the Contract. Such cancellation shall be effective when written notice from the County is received by the parties to this Contract, unless the notice specifies a later time.
  
- B. This contract may also be terminated at any time by mutual written consent, or by the County, with or without cause, upon giving the thirty (30) days written notice to the Hearing Officer. The County at its convenience, by written notice, may terminate this contract, in whole or in part. If this contract is terminated, the County shall be liable only for payment under the payment provisions of this contract for services rendered and accepted material received by the County before the effective date of termination.
  
- C. The County reserves the right to cancel the whole or any part of this contract due to failure of the Hearing Officer to carry out any term, promise or condition of the contract. The County will issue a written ten (10) day notice of default to the Hearing Officer for acting or failing to act any of the following, in the opinion of the County:
  - 1. Hearing Officer provides personnel who do not meet the requirements of the contract;
  - 2. Hearing Officer fails to adequately perform the stipulations, conditions, or services/specifications required in the contract;
  - 3. Hearing Officer attempts to impose on the County personnel, materials, products, or workmanship that is not of an acceptable quality;
  - 4. Hearing Officer fails to furnish the required service and/or product within the time stipulated in the contract;
  - 5. Hearing Officer fails to make progress in the performance of the requirements of the contract and/or gives the County a positive indication that Hearing Officer will not or cannot perform to the requirements of the contract.

**V. ENFORCEMENT, LAWS AND ORDINANCES**

This agreement shall be enforced under the laws of the State of Arizona. Hearing Officer must comply with all applicable federal, state, and local laws, ordinances, and regulations. Hearing Officer shall ensure payment of all taxes, licenses, permits, and other expenses of any nature associated with the provision of services herein. Hearing Officer shall maintain in current status all Federal, State and Local licenses and permits required for the operation of the business conducted by the Hearing Officer.

**VI. INDEPENDENT CONSULTANT**

It is clearly understood that each party shall act in its individual capacity and not as an agent, employee, partner, joint ventures, or associate of the other. An employee or agent of one party shall not be deemed or construed to be the employee or agent of the other party for any purpose whatsoever.

The Hearing Officer is advised that taxes or social security payments shall not be withheld from a County payment issued hereunder and that Hearing Officer should make arrangements to directly pay such expenses, if any.

The County will not provide any insurance coverage to the Hearing Officer including Workmen's Compensation coverage.

**VII. MODIFICATIONS**

This Agreement may only be modified by a written amendment signed by persons duly authorized to enter into contracts on behalf of the County and the Hearing Officer.

**VIII. WAIVER**

The failure of either party of this Agreement to take affirmative action with respect to any conduct of the other which is in violation of the terms of this contract shall not be construed as a waiver thereof, or of any future breach or subsequent wrongful conduct.

**IX. INDEMNIFICATION**

To the fullest extent permitted by law, Hearing Officer agrees to indemnify, defend, and hold harmless Cochise County, a body politic and corporate of the State of Arizona, its board members, officers, employees, agents and other officials from all claims, damages, losses, and expenses, including but not limited to attorney's fees, court costs, or other alternative dispute resolution costs arising out of, resulting from, or otherwise but for the performance or furnishing of work or services under this Agreement, provided that any such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease, death, or personal injury, or property damage, including the loss of use or diminution in value resulting there from; but only to the extent caused in whole or in part by the actual or alleged negligent acts, errors, or omissions of Hearing Officer, or anyone for whose acts Hearing Officer may be liable. Cochise County reserves the right, but not the obligation, to participate in defense without relieving Hearing Officer of any obligation hereunder.

The amount and type of insurance required shall not in any way be construed as limiting the scope of the indemnification set forth above.

**X. INSURANCE**

Insurance is not required for this contract

**XI. MISCELLANEOUS PROVISIONS**

- A. No assignment of this Agreement or subcontract shall be made by the Hearing Officer with any other party for furnishing any of the services herein contracted for without the advance written approval of the Procurement Department.
- B. The Hearing Officer shall establish and maintain procedures and controls that are acceptable to the County for the purpose of assuring that no information contained in its records or obtained from the County or from others in carrying out its functions under the contract shall be used by or disclosed by it, its agents, officers, or employees, except as required to efficiently perform duties under the contract. Persons requesting such information must be referred to the County.
- C. All services, information, computer program elements, reports, and other deliverables which may have a potential patent or copyright value and which are created under this Agreement shall be the property of the County and shall not be used by the Hearing Officer or any other person except with the prior written permission of the County.
- D. This Agreement is subject to the provisions of A.R.S. Sec. 38-511.
- E. The Hearing Officer shall comply with all applicable provisions of the Americans With Disabilities Act (Public Law 101-336, 42 U.S.C. 12101-12213) and applicable federal regulations under the Act.

**XII. LEGAL ARIZONA WORKERS ACT COMPLIANCE:**

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

The County shall have the right at any time to inspect the books and records of the Hearing Officer and any sub contractor in order to verify such party's compliance with the State and Federal Immigration Laws.

Any breach of the Hearing Officer's or any sub contractor's warranty of compliance with the State and Federal Immigration Laws, or of any other provision of this section, shall be deemed to be a material breach of this contract subjecting the Hearing Officer to penalties up to and including suspension or termination of this Contract. If the breach is by a sub contractor, and the subcontract is suspended or terminated as a result, the Hearing Officer shall 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 sub consultant, (subject to County approval if MWBE preferences apply) as soon as possible so as not to delay project completion.

The Hearing Officer shall advise each sub consultant of the County's rights, and the sub consultant's obligations, under this Section by including a provision in each subcontract substantially in the following form:

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

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

**XII. FOREIGN INVESTMENT AND BUSINESS OPERATIONS:**

By signing this agreement Hearing Officer certifies that it does not have scrutinized business operations in Iran and Sudan as per A.R.S sec. 35-297.

This Agreement represents the entire agreement between the County and the Hearing Officer relating to this requirement and shall prevail over any and all previous verbal and written agreements.

**APPROVED:**

\_\_\_\_\_  
Ann English, Chair  
Cochise County Board of Supervisors  
Cochise County Flood Control District

\_\_\_\_\_  
Date

**ATTEST:**

\_\_\_\_\_  
Clerk of the Board

\_\_\_\_\_  
Date

Hearing Officer:

\_\_\_\_\_  
Candace Lamoree

\_\_\_\_\_  
Date

## EXHIBIT "A" - SCOPE OF SERVICES

- A. Hearing Officer makes determinations on violations to the Zoning Regulations and Floodplain Regulations in accordance with procedures duly adopted by the Cochise County Board of Supervisors, including, but not limited to the following:
- Function in the capacity of an administrative law judge to determine whether or not a respondent has committed a violation of the Cochise County Zoning Regulations, Floodplain Regulations or Cochise County Building Safety Code
  - Conduct said hearing and make determinations thereon
  - Prepare findings of fact and conclusions of law in support of said decisions
  - Impose civil penalties on persons adjudicated to be in violation of said regulations or codes, as applicable
- B. Pursuant to A.R.S. §11-810, Hearing Officer hears appeals of dedications, exactions and the adoption or amendment of a zoning regulation that is alleged to be a taking in violation of A.R.S. §11-811.
- C. The Board of Supervisors may, at its discretion, and with the consent of the Hearing Officer, assign the Hearing Officer to preside over administrative appeals of other matters, as well.

## EXHIBIT B – FEE SUMMARY

In consideration of the performance of the services described in Exhibit A, Scope of Services, the County shall pay the Consultant Fifty Dollars (\$50.00) per hour with a maximum of eight (8) hours per day, with the total not to exceed Four Hundred Dollars (\$400.00) per day. The maximum annual amount paid shall not exceed Five Thousand Dollars (\$5,000.00).

Invoices shall be submitted following each hearing. The number of hours submitted by the Consultant shall be rounded to the nearest one-tenth of an hour.

**Flood Control District Meeting****Meeting Date:** 05/07/2013

Riverstone Groundwater Recharge Grant

**Submitted By:** Teresa Vasquez, Community Development**Department:** Community Development**Division:** Floodplain**Presentation:** No A/V Presentation**Recommendation:** Approve**Document Signatures:** BOS Signature NOT Required**# of ORIGINALS** 1**Submitted for Signature:****NAME of PRESENTER:** Karen Riggs, P.E**TITLE of PRESENTER:** Interim  
Comm.  
Development  
Director**Mandated Function?:** Not Mandated**Source of Mandate  
or Basis for Support?:****REMINDER:** You will use this Agenda Item template if your item involves a Grant (whether a new or renewal grant). You also must attach the Grant Approval Form to the item before Finance will approve it. Select the SPECIAL LINKS on your left-hand menu and Click on "Grant Approval Form". Then complete the form, save it and attach it to your item (on the Attachments tab).**Information****Agenda Item Text:**

Approve a grant of \$50,000 from The Nature Conservancy (TNC) to help fund a feasibility study for groundwater recharge at Riverstone and a Memorandum of Understanding (MOU) setting forth the parties' responsibilities.

**Background:**

The Board previously approved studies of the Mansker property to assess the feasibility of ground water recharge. The Mansker property was purchased by the County using funding from the U.S. Army (ACUB program), The Nature Conservancy ("TNC") and the County. The feasibility study has been completed and the recharge project will be commenced shortly.

This agenda item builds on the recharge effort on Mansker by assessing the feasibility of recharge on the 1,811 acre parcel known as Riverstone. TNC acquired Riverstone using funds from the ACUB program, subject to a military conservation easement. TNC is offering a \$50,000 grant to the County to facilitate a feasibility study for recharge on Riverstone. The Grant Agreement and the MOU attached to this agenda item set forth the terms and conditions of the grant, including reporting and the scope of work.

The feasibility study will be further supported by a \$50,000 grant from the Upper San Pedro Partnership. In addition, the County will contribute \$65,000 to the feasibility study. This \$65,000 is from money left over from the purchase of Mansker. The County originally had budgeted \$130,000 to acquire a small piece of the Mansker property for flood control. Because of the ACUB and TNC money used for the purchase of Mansker, the County contributed only \$65,000 to purchase Mansker, with the agreement that the remaining \$65,000 would be spent on a recharge project.

**Department's Next Steps (if approved):**

Staff will pursue partnership to facilitate a feasibility study for recharge on Riverstone parcel, pursue grand funding for recharge portion of project and begin pre-design tasks for project.

**Impact of NOT Approving/Alternatives:**

If not approved, the FCD will not pursue partnerships for groundwater recharge project.

**To BOS Staff: Document Disposition/Follow-Up:**

Return approved agenda item to Teresa (Vasquez) Garcia at Hwy/Flood

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**Fiscal Impact**

<b>Fiscal Year:</b>	2013
<b>One-time Fixed Costs? (\$\$\$):</b>	65,000
<b>Ongoing Costs? (\$\$\$):</b>	
<b>County Match Required? (\$\$\$):</b>	0
<b>A-87 Overhead Amt? (Co. Cost Allocation \$\$\$):</b>	
<b>Source of Funding?:</b>	261-4110-9-412.600

**Fiscal Impact & Funding Sources (if known):**

The feasibility study will be further supported by a \$50,000 grant from the Upper San Pedro Partnership. In addition, the County will contribute \$65,000 to the feasibility study. This \$65,000 is from money left over from the purchase of Mansker. The County originally had budgeted \$130,000 to acquire a small piece of the Mansker property for flood control. Because of the ACUB and TNC money used for the purchase of Mansker, the County contributed only \$65,000 to purchase Mansker, with the agreement that the remaining \$65,000 would be spent on a recharge project.

Funding Source: 261-4110-9-412.600

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**Attachments**

[RiverstoneExecutiveSummary](#)

[TNC\\_Grant\\_Ltr](#)

[Riverstone\\_Scope\\_of\\_Work](#)

[Riverstone\\_SOW](#)



## COCHISE COUNTY

# COMMUNITY DEVELOPMENT

"Public Programs...Personal Service"

## MEMORANDUM

Date: April 24, 2013

To: Flood Control District Board of Directors

From: Karen C. Riggs, P.E., Interim Community Development Director

Subject: Approve Grant Study for groundwater recharge at Riverstone.

Recommendation: Approve a grant of \$50,000 from The Nature Conservancy to help fund a feasibility study for groundwater recharge at Riverstone and an MOU setting forth the parties' responsibilities.

Background: The Board previously approved studies of the Mansker property to assess the feasibility of ground water recharge. The Mansker property was purchased by the County using funding from the U.S. Army (ACUB program), The Nature Conservancy ("TNC") and the County. The feasibility study has been completed and the recharge project will be commenced shortly.

This agenda item builds on the recharge effort on Mansker by assessing the feasibility of recharge on the 1,811 acre parcel known as Riverstone. TNC acquired Riverstone using funds from the ACUB program, subject to a military conservation easement. TNC is offering a \$50,000 grant to the County to facilitate a feasibility study for recharge on Riverstone. The Grant Agreement and the MOU attached to this agenda item set forth the terms and conditions of the grant, including reporting and the scope of work.

Fiscal Impacts: The feasibility study will be further supported by a \$50,000 grant from the Upper San Pedro Partnership. In addition, the County will contribute \$65,000 to the feasibility study. This \$65,000 is from money left over from the purchase of Mansker. The County originally had budgeted \$130,000 to acquire a small piece of the Mansker property for flood control. Because of the ACUB and TNC money used for the purchase of Mansker, the County contributed only \$65,000 to purchase Mansker, with the agreement that the remaining \$65,000 would be spent on a recharge project.

Funding Source: 261-4110-9-412.600

Next Steps/Action Items/Follow Up: Staff will pursue partnership to facilitate a feasibility study for recharge on Riverstone parcel, pursue grand funding for recharge portion of project and begin pre-design tasks for project.

Impact of Not Approving: If not approved, the FCD will not pursue partnerships for groundwater recharge project.



TNC Accounting Information	
Agreement #:	AZFO-130114
Center/Subcenter #:	1030523031-0000
Account #:	5076
Prime Grant:	WFF III 2012-13

April 23, 2013  
Cochise County  
Attn: Karen Riggs, Cochise County Engineer

Re: Grant to Cochise County for up to \$50,000 to Support Hydrogeologic Investigation, 1,811 acre Riverstone Property, Sierra Vista, AZ

Dear Ms. Riggs:

As we had previously discussed, The Nature Conservancy (the "Conservancy") is pleased to make this Grant to Cochise County ("Grantee") in the amount of funds up to \$50,000 ("the Grant") to support the hydrogeological investigation to identify locations for possible recharge facilities for the San Pedro River aquifer to be conducted on the above-referenced property (the "Property"). The Grant is subject to the "Standard Grant Conditions" set out on the attached form (Attachment A).

**Purpose of this Grant.**

This Grant will provide funds to support the hydrogeological investigation more particularly described in the draft Scope of Work (SOW) (Attachment B). The parties understand and acknowledge that the SOW will also be funded by matching funds of \$65,000 from the Grantee and \$50,000.00 from the Upper San Pedro Partnership ("USPP").

**Term.**

This Grant shall commence upon execution and shall expire on December 20, 2013.

**Reporting and Due Dates.**

The Grantee shall submit the following reports using the attached formats ("Attachment C"):  
The **Interim Financial report** is due August 30, 2013. **Final Financial report** is due before November 22, 2013. The **Final Programmatic report** in the form of the Technical Memo described in the SOW is due November 22, 2013.

Financial and programmatic report shall be submitted to Brooke Bushman, Upper San Pedro Program Coordinator, 1510 E. Fort Lowell Road, Tucson, AZ 85719.

Additionally, the Grantee shall prepare and provide a progress report for input and comment to present to the Technical Committee of the USPP at its regularly scheduled meetings.

**Payment Amount and Schedule.**

- a. For all of the activities described above, the Conservancy shall pay the Grantee a maximum total of up to \$50,000 to support the Program, **payable in one lump sum after receipt and approval of the Scope of Work Deliverable, due by June 28, 2013.**
- b. Payments will be sent to the Grantee by check payable to the Grantee.

Please indicate your acceptance of the terms of this letter and accompanying Grant Conditions by signing the enclosed copy of this letter and returning it to the Conservancy.

Sincerely,



Holly Richter  
AZ Chapter, Director of Conservation  
The Nature Conservancy

Accepted and agreed to:

\_\_\_\_\_  
Karen Riggs  
County Engineer, Cochise County  
Date: \_\_\_\_\_

Attachment A: Standard Terms & Conditions  
Attachment B: Draft Scope of Work  
Attachment C: Financial Report Format

## **Attachment A**

### **I. PROVIDING FUNDS TO OTHERS**

The Grantee is prohibited from using the Conservancy's funds and/or assets for grants or contracts to others without the Conservancy's written permission. In addition, this Grant may not be assigned by the Grantee in whole or in part without the prior written consent of the Conservancy.

### **II. NO AGENCY**

No legal partnership or agency is established by this Grant. Neither party is authorized or empowered to act as an agent, employee or representative of the other, nor transact business or incur obligations in the name of the other party or for the account of the other party. Neither party shall be bound by any acts, representations, or conduct of the other.

### **III. TERMINATION AND REMEDIES**

The Conservancy shall have the right to terminate this Grant by giving 30 (thirty) days written notice to the Grantee of intent to terminate. Should this occur, payment for work satisfactorily completed will be adjusted accordingly. In addition, if in the judgment of the Conservancy the Grantee defaults in performance of Grantee duties under this Grant, whether for circumstances within or beyond the control of the Grantee, the Conservancy may immediately terminate this Grant by written notice to the Grantee. Upon receipt of the termination notice from the Conservancy, the Grantee shall take all necessary action to cancel outstanding commitments relating to the work under this Grant. In the event of termination prior to the originally agreed upon expiration, the Conservancy shall pay any obligations incurred by the Grantee that could not reasonably be canceled. Any Grant funds not expended or committed at the time of termination must be returned to the Conservancy. If at any time the Prime Grant is terminated, this Grant shall also be automatically terminated as of the termination date of the Prime Grant.

### **IV. LOBBYING AND POLITICAL CAMPAIGNING**

The Grantee shall not use any portion of funds transferred under this Grant to engage in any lobbying activities unless the parties specifically agree to such lobbying activities in this Grant. Should Grantee and the Conservancy agree to such lobbying activities, Grantee shall comply with all local, state and federal laws related to lobbying, including but not limited to registration with regulating agencies, public reporting and disclosures, fundraising and expenditure activities, media and advertising, tax obligations, elections and campaigns.

The Grantee shall not use any portion of funds transferred under this Grant to participate or intervene in any political campaign on behalf of or in opposition to any candidate for public office, to induce or encourage violations of the law or public policy, to cause any private inurement or improper private benefit to occur, or to take any other action inconsistent with Section 501(c)(3) of the US Internal Revenue Code.

### **V. COMPLIANCE WITH LAWS**

The Grantee represents, warrants, and agrees that, in connection with the transactions contemplated by this Grant: (a) the Grantee can lawfully work in the United States; (b) the Grantee shall obtain, at its own expense (except to the extent otherwise explicitly stated in this Grant) any permits or licenses required for the Grantee's services under this Grant; and (c) the Grantee shall comply with all statutes, laws, ordinances, rules, regulations, court orders, and other governmental requirements of the United States, the State of Arizona, and any other jurisdiction(s) in which the Grantee is organized or authorized to do business, including but not limited to any applicable anti-bribery statutes, which are applicable to the work to be done by the Grantee

under this Grant (in each case, an "Applicable Law"). The Grantee shall not take any actions that might cause the Conservancy to be in violation of any of such Applicable Laws.

#### **VI. CERTIFICATION REGARDING MATERIAL SUPPORT AND RESOURCES TO TERRORISTS**

The Grantee certifies that none of the funds received under this Grant directly or indirectly funds terrorist activities and that it is not involved in, nor does it fund, either directly or indirectly, any terrorist activities.

#### **VII. EXPENDITURE LIMITED TO DESIGNATED PURPOSES**

Grant funds may be spent only in accordance with the provisions of the Grantee's funding request and budget submitted to the Conservancy. Expenditure of Grant funds is subject to modification only with the Conservancy's prior written approval. Any Grant funds not expended or committed for the purposes of this Grant must be returned to the Conservancy.

#### **VIII. BINDING EFFECT/AMENDMENTS**

This Grant shall become binding when signed by the parties. This Grant supersedes all prior or contemporaneous communications and negotiations, both oral and written and constitutes the entire Grant between the parties relating to the work set out above. No amendment shall be effective except in writing signed by both parties.

#### **IX. INTELLECTUAL PROPERTY LICENSE AND USE OF CONSERVANCY NAME/LOGO**

Title to any Materials developed with Grant funds vests in the Grantee, with the Conservancy getting free irrevocable license to use, publish or distribute all such copyrighted, trademarked, patented Materials, or inventions, trade secrets or other intellectual property rights. The word "Materials" may include, but is not limited to reports, studies, photographs (and negatives), computer programs, drawings, writings or other similar works or documents, along with all supporting data and material, produced under this Grant. The Grantee agrees to provide the Conservancy, and, if applicable, the Grantor to the Conservancy with copies of the Materials at no cost.

The Grantee may not use the Conservancy's name and/or logo in any way without prior written consent from the Conservancy.

#### **X. LIABILITY/INSURANCE**

The work to be performed under this Grant shall be performed entirely at the Grantee's risk. The Grantee agrees to indemnify and hold the Conservancy harmless for any and all liability or loss arising in any way out of the performance of this Grant. The Grantee shall carry appropriate workers' compensation, hazard and liability insurance coverage written on an occurrence basis during the term of this Grant.

**COCHISE COUNTY and THE NATURE CONSERVANCY  
HYDROGEOLOGIC INVESTIGATION SCOPE OF WORK OUTLINE  
RIVERSTONE PROPERTY  
April, 2013**

Through hydrologic investigation, Cochise County ("the County") and The Nature Conservancy ("TNC") seek to assess the feasibility of a recharge facility or facilities on the 1,811-acre Riverstone property that will increase base flows in the San Pedro River to the maximum extent possible. The property is located approximately six miles southeast of the city of Sierra Vista, within 2 miles of the San Pedro River, and shares its eastern boundary with the BLM San Pedro Riparian National Conservation Area (SPRNCA). Recent hydrologic modeling scenarios indicate that recharge on Riverstone may result in increased San Pedro River base flows.

The project deliverable will identify locations for recharge facilities where post-development flows, stormwater and treated effluent water could be recharged to influence the alluvial aquifer of the San Pedro River. These water sources may be recharged together via one or several distinct facilities. Since recharge facilities may be developed as a phased project as the various water sources are acquired for the site, recommendations for the appropriate facility type for each water source will also be included in the deliverable. These recommendations may include surface basins, vadose zone and/or saturated zone injection wells, discharge to existing drainages, or other new recharge technologies. Proposed facilities may incorporate existing infrastructure on site, including earthen berms, erosion-control drop structure, and wells.

Three potential water sources exist at this time. These include on-site post-development flood flows, captured and conveyed stormwater, and conveyed treated effluent. Project deliverables will include identified locations and recommendations for appropriate recharge technologies suitable for each water source, together referred to as "recharge facilities". At very least, the deliverables for this scope of work will include letter-size conceptual renderings of potential future facility designs for the recharge of flood flows, storm water, and effluent. Recharge facilities for the different water sources may be co-located, or distinct, and may include a series of facilities that may span property boundaries with the adjacent SPRNCA. If recharge proves to be feasible on Riverstone, budgeting for later phases will include actual facility design deliverables.

The first design focus will be on recharge of immediately available post-development flood water, with the goal of capturing flows created from impervious surfaces covering upstream watersheds, or 'urban enhanced runoff'. Careful attention will be paid to allowing natural flows to continue across the site, while slowing the flow and capturing and infiltrating enhanced urban runoff. Effectiveness of existing infrastructure on the property will be

evaluated as part of any recharge facility design, including the earthen benches bisecting the three main drainages and the cement drop-structure located near the confluence of Ramsey and Cat Canyon washes.

The second design focus will be a facility capable of recharging a to-be-determined amount of treated effluent. Several options exist for effluent water sources, but negotiations with local municipalities and water companies have not yet commenced. To the extent that the conveyance system access from wastewater treatment plants (WWTP) to the recharge site needs to be considered for facility design, the locations of existing and planned WWTPs are available. The design for this facility will need to include all requirements associated with obtaining and implementing an Aquifer Protection Permit (APP) as required by the Arizona Department of Environmental Quality (ADEQ) under the Clean Water Act. The actual APP application preparation, submittal, and interactions with ADEQ will be included as an option as described below.

The third design focus will be on recharging stormwater captured in the upstream developed watersheds that would otherwise infiltrate or evaporate before arriving naturally at Riverstone. Stormwater would be collected and conveyed through a yet-to-be-determined conveyance system to Riverstone for recharge closer to the river. The recharge facility may utilize existing on-site infrastructure. If adequate funds are available in the current contract, the deliverable will also include using the newly developed Cochise County GIS tool, Pipeline Feasibility Analysis, and other existing data to identify stormwater collection points, amount of stormwater generated, rights of way from collection to recharge facility and concept level pipeline or other conveyance system costs.

The project team includes TNC and the County who will fund and jointly manage the geotechnical and hydrologic investigation contract. The Upper San Pedro Partnership (USPP) also has contributed considerable funding for the investigation. All team members will be provided monthly progress reports. The project team agrees that the approach for this investigation will be phased and iterative and will involve other interested parties at key decision points. Lacher Hydrologic Consulting will also serve on the project team, providing hydrologic analysis of recharge effects, to help understand the expected benefit and timing of recharge to the San Pedro River. Subsequent tasks will be designed based on resulting data and decisions made with the project team at key, pre-defined decision points.

### **Summary of Approach**

The approach to field investigations will include decision points following each field task that will likely affect the type and/or extent of subsequent investigations due to the different recharge options being evaluated and their dependence on site-specific geotechnical and hydrogeologic conditions. We seek to maintain flexibility in the approach to ensure a cost-

effective program for obtaining sufficient and critical data to evaluate feasibility of potential recharge methods to meet TNC and County recharge goals.acknowledging that significant departure from scope could have substantial effects on cost and schedule.

### **Scope of Work Outline**

Task 1. **Project Scoping.** The contractor will:

- Develop project scope details, including phasing, critical path items and decision points
- Clarify and prioritize recharge goals/approaches, and identify milestones leading to goals
- Assign roles and communication system for project team members
- Develop system for sharing hydrologic data obtained during the site- specific field investigations
- Identify key stakeholders groups, contacts for each group, and timing for project participation

Deliverable 1: Scope of Work Report (required for TNC grant payment, due at latest by June 28, 2013)

Task 2. Data collection and evaluation of available geotechnical and hydrogeologic data. The contractor will perform data collection and evaluation, including, but not necessarily limited to:

- JE Fuller GIS tool and Pipeline feasibility study, 2012
- Cochise County Flood Control/Urban Runoff Recharge Plan, Stantec, 2006
- Rapid estimation of recharge potential in ephemeral-stream channels using electromagnetic methods, and measurements of channel and vegetation characteristics. Callegary, et al., 2007
- Upper San Pedro Partnership documents
- Lacher Hydrological Consulting reports
- Determine accessibility of existing wells
- Climate change effects on runoff to the extent possible (this may be qualitative rather than quantitative)
- Survey of recharge networks elsewhere/recharge benefits to streamflow

Task 3. Preliminary Hydrologic Analysis. The contractor will perform a preliminary hydrologic analysis including, but not necessarily limited to:

- Determine existing and future condition runoff volumes for tributaries drainages to Riverstone, including watershed delineation and application of rainfall runoff modeling for 2-, 5-, 10-, and 100 year events
- Develop detailed estimates of potential available capture volumes of storm water using historic precipitation data landscape and impervious surface estimates

- Use Cochise County GIS tool, Pipeline Feasibility Analysis, and other existing data to identify stormwater collection points and cost to develop rights of way from collection to recharge facility and pipeline costs
- Develop estimates for potential effluent sources, volumes from the EOP and planned future WWTPs, and conveyance cost estimates

**Task 4. Comprehensive Site Reconnaissance/Initial Recharge Feasibility**

- Alternative site recharge screening level evaluation of potential alternative or complimentary sites using available information (no-on-site investigation)
- Evaluate hydrogeologic, soil, and surface geology data suitability for recharge of:
  - a. Post-development floods (on-site)
  - b. Stormwater conveyed from on-site locations
  - c. Effluent conveyed from off-site locations
- Incorporate identified site constraints (physical, biological, archaeological, legal, water delivery infrastructure access etc.) and eliminate clearly unsuitable areas
- Finalize screening/ranking criteria for each of the water sources and apply to site to identify locations of shallow-subsurface site characterization

**Task 5. Coordinate with Project Team and Refine Plan for Field Investigations. The contractor will:**

- Evaluate identified initial constraints/considerations and select areas for field investigations
- Evaluate results of geotechnical and hydrologic analysis, projected recharge benefits, and refine approach (if appropriate) to maximize benefits
- Incorporate Hydrologic Analyses of Recharge Effects (Lamel Hydrological Consulting) in order to continue to refine potential recharge benefit to SPRNCA/San Pedro River

**Task 6. Conduct Initial Recharge Feasibility Study. The contractor will evaluate recharge feasibility with subtasks that may include, but are not necessarily limited to, the following subtasks:**

- Conduct shallow sub-surface site characterization/evaluation for recharge feasibility and develop options to maximize recharge effectiveness
- Conduct backhoe test pit/trenching investigations for lithologic characterization of sediments
- Perform infiltration testing for evaluation of infiltration rates pertaining to possible recharge methods: recharge basins, in-channel, or injection wells (vadose zone and/or saturated zone).
- Develop estimates of "achievable" recharge volumes for possible recharge methods. "Achievable" means the volume of water that the aquifer can accept.

## Attachment B

- Prepare work products (lithologic descriptions, graphic logs, hydrogeologic sections) and analyze results. Determine number and select locations for exploration deeper subsurface site characterization (to be performed in task 9 below).
- Planned deeper subsurface investigations may include, but are not necessarily limited to:
  - a) Appropriate drilling method at selected locations for characterization of upper 50 to 100 feet of subsurface sediments
  - b) Appropriate testing methods (if necessary) such as down-borehole permeability tests to evaluate subsurface hydraulic properties.
- Surface geophysical survey (i.e. high resolution resistivity) methods at transects selected from drilling results to project observed sediment lithologies to larger areas.

Task 7. Presentation of initial recharge feasibility results and initial plan for deeper sub-surface field investigations to the Project Team.

Task 8. Preparation of Draft and Final Technical Memoranda. The contractor will:

- Present results of initial feasibility assessment of source waters and potential recharge method(s), locations, and quantities, and "achievable" volumes of water that the aquifer can accept from:
  - a) Post-development runoff flows (on-site)
  - b) Stormwater conveyed from on-site locations
  - c) Effluent conveyed from off-site locations

Summarize methods and results of near-surface field investigations

Present recommendations and order of magnitude costs for Phase II options.

Task 9 (Option #1 of Phase II). Conduct Detailed Recharge Feasibility Study. The contractor will conduct a deeper sub-surface site characterization/evaluation for recharge feasibility and develop options to maximize recharge effectiveness. Task deliverables will include lithologic descriptions, graphic logs, and hydrogeologic sections.

Task 10 (Option #2 of Phase II). Install shallow monitoring wells. The contractor will:

- Install up to three shallow monitoring wells in a method and locations to be proposed by the contractor to the Project Team. Monitoring three wells are the minimum number capable of determining ground water flow direction and gradient.

## Attachment B

- Propose methodology and conduct aquifer tests for determining transmissivity of the alluvial or shallow (Upper Basin Fill) aquifer (whichever is encountered at the site).

Task 11. (Option #3 of Phase II). Presentation of Results and impact of Results on Potential Recharge Methods and Locations to the Project Team. The contractor will:

- Evaluate results of deeper subsurface recharge feasibility
- Evaluate ramifications for recharge methods and locations
- Present the results and proposed additional tasks required to complete the design to the Project Team.

Task 12. (Option #4 of Phase II). Perform additional tasks. The contractor will perform additional tasks as proposed in Task 11 to refine recharge methods and locations.

Task 13. (Option #5 of Phase II). Preparation of Draft and Final Technical Memorandum. The contractor will:

- Summarize methods and results of field investigations
- Evaluate feasibility of recharge and recommend recharge method(s), locations, and quantities for recharge from the three potential sources:
  - a. Post-development flood flows (on-site)
  - b. Stormwater conveyed from off-site locations
  - c. Effluent conveyed from off-site locations
- Combine results with LHC Phase 2 Riverstone Refinement & Simulation results

### **Schedule**

It is anticipated that the contract will be awarded on or before June 1, 2013. The contractor shall propose a schedule for review and approval by the Project Team with the cost proposal. Due to potential site damage by trucks and heavy equipment, field work during the monsoon season will be subject to acceptable site and working conditions.

### **Budget**

Available funding for this project is \$165,000. This draft scope identifies basic tasks plus optional tasks that are within scope but may not be able to be accomplished with available funding. This scope may be modified to include options if funding is sufficient for award or turn basic tasks into options if funding is insufficient for basic tasks. This will be accomplished through negotiations following receipt of the initial proposal from the contractor.

**Memorandum of Understanding  
Between  
The Nature Conservancy of Arizona  
And  
Cochise County, State of Arizona**

This Memorandum Of Understanding (the "MOU") is entered into on May 13, 2013, between the Cochise County, Flood Control District, validly organized governmental entity established under the laws of the State of Arizona and under the jurisdiction of Cochise County, with its principal place of business at 1415 Melody Lane Bldg. F, Bisbee, AZ 85603 (the "County"); and The Nature Conservancy, a District of Columbia non-profit corporation, by and through its Arizona Program, with its principal place of business at 1510 E. Fort Lowell Road, Tucson, AZ 85719 (the "Conservancy").

**RECITALS:**

1. The County and the Conservancy share a mutual goal in ensuring that water supplies are optimally managed to sustain riparian health within the San Pedro Riparian National Conservation Area (SPRNCA), thereby protecting Arizona's San Pedro River.
2. Both parties are also members of the Upper San Pedro Partnership (USPP), a consortium of agencies and organizations working together to preserve the SPRNCA and support projects designed to address the water needs in the Sierra Vista Subwatershed of the Upper San Pedro River Basin.
3. One of the strategies to achieve these mutual goals is to implement a regional recharge initiative with multiple stakeholders at multiple recharge sites and water/effluent sources.
4. The parties have identified the 1,811-acre Riverstone property owned by the Conservancy (the "Property") as a possible location for such recharge facilities.
5. The County, the Conservancy and the USPP have each allocated funds to retain a contractor to assess the feasibility of a recharge facility or multiple facilities on the Property to increase base flows in the San Pedro River.

NOW THEREFORE, in consideration of the terms and conditions contained herein, the parties agree to the following:

**AGREEMENT:**

1. **Project Name:** **Riverstone Hydrogeologic and Geotechnical Investigation** (the "Project").
2. **Project Performance Period:** May 13, 2013 through December 31, 2013. Forty-five (45) days prior to the expiration date of the Project Performance Period, the parties shall meet to review the work accomplished and determine whether the Project will be completed within the designated Project Performance Period or whether it must be extended to accommodate unanticipated delays.
3. **Project Description:** This Project will be focused on assessing the feasibility of a recharge facility or facilities on the Property to increase base flows to the San Pedro River. The draft Scope of Work for the Project is more particularly described in the attached Exhibit A and incorporated herein by reference.

4. **TNC shall:**

- a) By separate document, grant up to \$50,000.00 to the County to hire a consultant for the Project.
- b) Provide input and feedback and fully participate in the selection of the best consultants for the Project.
- c) Ensure that TNC's previously developed groundwater modeling work conducted on other properties in the SPRNCA is used to inform infrastructure placement and development.
- d) Participate in key strategic decisions with the County regarding implementation of the Project.
- e) Ensure that the Project plans are innovative and use the best technology available for the benefit of the San Pedro River.
- f) With the County, make regular presentations to the USPP's Technical Committee regarding the Project implementation and solicit input and feedback from its members.

5. **County shall:**

- a) Administer in a fiscally responsible manner, and pursuant to the budget mutually agreed upon between the parties, TNC's grant of funds up to \$50,000.00, USPP's grant of \$50,000.00, as well as its own contribution of \$65,000.00 in fulfilling the Project goals and objectives.
- b) Select, contract with and monitor the performance of the most qualified consultant for the Project.
- c) Serve as primary Project contact for the selected consultant.
- d) Participate in key strategic decisions with TNC regarding implementation of the Project.
- e) With TNC, make regular presentations to the USPP's Technical Committee regarding the Project implementation and solicit input and feedback from its members.

6. **Project Representatives:**

TNC: Brooke Bushman, Upper San Pedro Program Coordinator  
[bbushman@tnc.org](mailto:bbushman@tnc.org)  
(520) 309-4812 (Office)  
1510 E. Fort Lowell Road  
Tucson, AZ 85719

Dave Gann, Arizona River Programs Director  
[dgann@tnc.org](mailto:dgann@tnc.org)  
(520) 547-3421 (Office)  
1510 E. Ft Lowell Road  
Tucson, AZ 85719

County: Karen Riggs, Cochise County Engineer  
[kriggs@cochise.az.gov](mailto:kriggs@cochise.az.gov)  
(520) 432-9300 (Office)  
1415 Melody Lane, Building F  
Bisbee, AZ 85603

7. **Mutual Responsibilities of the Parties:**

- a) Ownership of Documents and Data:  
All rights (including, without limitation, copyright), title, and interest to and in any reports, studies, photographs (and negatives), software, drawings, designs, writings or other works or documents produced by the consultant for this Project, along with all drafts, versions, supporting data and other material created in connection therewith (collectively the "Works"), are "works made for hire" as defined under the copyright laws of the United States. To the extent that any Works are not works made for hire, the consultant shall assign, and at any time in the future upon request shall assign, all right, title and interest, including, without limitation, copyright and other

intellectual property rights, in and to the Works to the Upper San Pedro Partnership, TNC and the County.

The parties agree that all intellectual property previously created by any party shall remain the exclusive ownership of the creating parties and further agree that the Works created shall be used for non-profit purposes only. Any use or further distribution of the Works shall require written consent of the other party.

b) Use of Name and Logo:

Neither party may use the other's name and/or logo in any way without prior written consent, except to the extent the work performed contemplates their inclusion in the final work product.

a) Confidentiality

During the course of the performance of this MOU, the parties may have access to materials, data, strategies, trade secrets, proprietary information, systems or other information relating to the other party and its programs, which is intended for internal use only. Any such information acquired shall not be used, published or divulged by the either party to any person, firm in any manner or connection whatsoever without first having obtained the written permission of the other, which permission may be withheld in their sole discretion.

b) Dispute Resolution:

The parties agree that, in the event of any dispute relating to this MOU or the performance of work, they shall first seek to resolve the dispute amicably, in good faith and through mediation.

c) Responsibility:

Each Party shall be solely responsible for the actions and/or omissions of all those who may be operating under their supervision and involved in the implementation of the objective of this MOU, and accept all responsibility for the repair of any possible damage caused in the execution of this MOU, whether to the other Party, or to third parties. Specifically, this MOU does not create any partnership, express or implied between the parties.

d) Compliance with the Law:

The Parties will observe all the applicable laws and regulations during the execution of the work implemented under the provisions of this MOU.

e) Validity of any Provision:

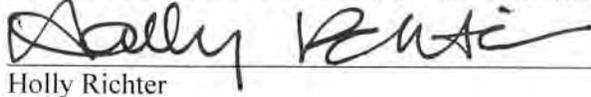
If any provision of this MOU is held invalid, the other provisions herein shall not be affected thereby.

f) Entire Agreement:

This MOU, including any attachments, embodies the entire and complete understanding between the Parties, and any amendment to this MOU, and will only be valid if in writing and signed by both Parties. Nothing in this MOU shall be construed as a document by which funds are transferred. All documents associated with any transfer of funds shall be by separate document.

IN WITNESS WHEREOF, the Parties execute this Memorandum of Understanding, effective as of the date first above written.

**THE NATURE CONSERVANCY OF ARIZONA**



Holly Richter  
Arizona Director of Conservation

4/23/13  
Date

**COCHISE COUNTY FLOOD CONTROL DISTRICT**

\_\_\_\_\_  
Ann English  
Chair, Board of Supervisors and FCD

\_\_\_\_\_  
Date

ATTEST:

\_\_\_\_\_  
Katie Howard, Clerk of the Board of Supervisors

\_\_\_\_\_  
Date

**Community Development**

**Flood Control District Meeting**

**Meeting Date:** 05/07/2013

Fry Townsite LOMR

**Submitted By:** Teresa Vasquez, Community Development

**Department:** Community Development

**Division:** Floodplain

**Presentation:** No A/V Presentation

**Recommendation:** Approve

**Document Signatures:** BOS Signature Required

**# of ORIGINALS Submitted for Signature:** 1

**NAME of PRESENTER:** Karen Riggs, P.E

**TITLE of PRESENTER:** Interim Comm. Development Director

**Mandated Function?:** Federal or State Mandate

**Source of Mandate or Basis for Support?:**

**Docket Number (If applicable):**

**Information**

**Agenda Item Text:**

Approve Amendment No. 1 to Contract PSA 13-27-HFP-04 with West Consultants to process the Letter of Map Revision (LOMR) document to the Federal Emergency Management Agency (FEMA) to update the floodplain hazard in Fry Townsite in Sierra Vista.

**Background:**

Fry Townsite is an enclave within the City of Sierra Vista. The City has completed a flood study of the Fry Channel (Vista Village Drainageway) and mapped on both sides of the Fry Township. The purpose of the flood study and mapping is to reflect actual flood conditions thereby providing improved protection for the property owners, as well as, provide more precise flood risk information to property owners, lenders and insurance agencies. This project is in the approved work plan.

**Department's Next Steps (if approved):**

If approved, staff will administer study and FEMA mapping

**Impact of NOT Approving/Alternatives:**

Areas within Fry Townsite will remain unmapped with the true flood risk not known by the residents.

**To BOS Staff: Document Disposition/Follow-Up:**

Please return signed contract to Teresa (Vasquez) Garcia

**Fiscal Impact**

<b>Fiscal Year:</b>	2013
<b>One-time Fixed Costs? (\$\$\$):</b>	60847.50
<b>Ongoing Costs? (\$\$\$):</b>	
<b>County Match Required? (\$\$\$):</b>	0.00
<b>A-87 Overhead Amt? (Co. Cost Allocation \$\$\$):</b>	

**Source of Funding?:**

261-4110-9-412.600

**Fiscal Impact & Funding Sources (if known):**

Total Cost Not to Exceed: \$60,847.50

Fund Line:# 261-4110-9-421.600

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**Attachments**

Fry\_Townsite\_LOMR\_ExecutiveSummary

Fry\_Townsite\_LOMR\_Contract

Fry\_Townsite\_LOMR\_LocationMap



## COCHISE COUNTY

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### COMMUNITY DEVELOPMENT

"Public Programs...Personal Service"

**DATE:** April 25, 2013  
**TO:** Flood Control District Board  
**FROM:** Karen Riggs, Interim Director, Community Development  
**SUBJECT:** **Authority for Study and Mapping in Fry Townsite**

**Recommendation:** Approve contract with West Consultants to process the LOMR to FEMA to update the floodplain hazard in Fry Townsite in Sierra Vista.

**Background (Brief):** Fry Township is an enclave within the City of Sierra Vista. The City has completed a flood study of the Fry Channel (Vista Village Drainageway) and mapped on both sides of the Fry Township. The purpose of the flood study and mapping is to reflect actual flood conditions thereby providing improved protection for the property owners, as well as, provide more precise flood risk information to property owners, lenders and insurance agencies. This project is in the approved work plan.

**Fiscal Impact & Funding Sources:** Total Cost Not to Exceed: \$60,847.50

Fund Line # 261-4110-9-421.600

**Next Steps/Action Items/Follow-up:** If approved, staff will administer study and FEMA mapping.

**Impact of Not Approving:** Areas within Fry Township will remain unmapped with the true flood risk not known by the residents.



## COCHISE COUNTY PROCUREMENT DEPARTMENT

1415 Melody Lane, Building C, Bisbee, AZ 85603  
Phone: (520) 432-8391 Fax: (520) 432-8397  
Website: [www.cochise.az.gov](http://www.cochise.az.gov)

**Project:** Fry Townsite Floodplain Map Revision  
**Administering Agency:** Cochise County Highway & Floodplain Department  
**Contract No. :** PSA 13-27-HFP-04  
**Contract Description:** Letter of Map Revision Document to FEMA to Update Floodplain Hazard Mapping.

### Amendment No. 1

THIS AGREEMENT, originally executed on February 20, 2013, by and between the County of Cochise (County) and West Consultants, Inc. (Consultant), is amended as follows:

**Task Schedule:**

Subject to the terms and conditions set forth in this agreement, Consultant shall provide the services as described in the updated Scope of Work dated April 9, 2013, Exhibit "A".

**Compensation:**

Updated cost estimate not to exceed \$60,847.50, as described in the Cost Estimate dated March 27, 2013, Exhibit "B".

With the exception of the above, all other provisions of this agreement are unchanged.

This Amendment is entered this 15<sup>th</sup> day of APRIL 2013.

CONSULTANT

Chuck Davis, P.E., CFM  
West Consultants, Inc.

Jeffrey B. Bradley  
President

COUNTY OF COCHISE

Ann English, Chairman  
Cochise County Board of Supervisors

# EXHIBIT “A”



## Fry Townsite Letter of Map Revision Scope of Work

April 9, 2013

As requested by the Cochise County Highway and Floodplain Department (CCHFD), this scope of work (SOW) specifies how WEST Consultants, Inc. (WEST) will analyze and delineate floodplains throughout the Fry Townsite area in Sierra Vista, Arizona (henceforth referred to as simply the Project Area) to submit a Letter of Map Revision (LOMR) document to FEMA to update the floodplain hazard mapping in the Project Area. As defined herein, the study reach is made up of the Fry Drainage Channel from the Carmichael Avenue alignment at the upstream end to Tacoma Street at the downstream end (floodplain mapping will end at 7th Street upstream of the downstream boundary of the study reach). “Fry Drainage Channel,” “Vista Village Drainageway,” and “Fab Avenue Wash” may be used interchangeably throughout the SOW herein to describe portions of the study reach, explained in greater detail below.

This study reach can be broken into three primary sub-reaches:

- Reach 1 – the 0.25-mile open channel reach from the current limit of FEMA mapping at the boundary of the City of Sierra Vista and Cochise County (just south of Fry Blvd.) along the Fab Avenue Wash (this limit of study line is approximately along the Carmichael Avenue alignment) downstream to the upstream face of the culvert in the alley between Carmichael Avenue and Canyon Drive, including the detention basin between North Avenue and Canyon Drive;
- Reach 2 – the culvert from the alley between Carmichael Avenue and Canyon Drive at the upstream end (the culvert is approximately 0.1 miles south of Theater Drive) to 2<sup>nd</sup> Street at the downstream end; and
- Reach 3 – the 0.45-mile open channel reach from the 2<sup>nd</sup> Street alignment at the upstream end to Tacoma Street at the downstream end (floodplain mapping will end at 7th Street upstream of the downstream boundary of the study reach).

On the Flood Insurance Rate Map (FIRM) panels, FEMA refers to the portion of the study reach defined above as Reach 1 as the Fab Avenue Wash, and FEMA refers to the portion of the study reach defined above as Reach 3 as the Vista Village Drainageway. WEST will be coordinating with CCHFD to refine the exact study extents for mapping purposes depending on the preliminary results of the study.

The specific tasks are as follows:

## **Task 1. Data Collection and Review**

Portions of both the Vista Village Drainageway and the Fab Avenue Wash have been studied by FEMA using detailed methods and are mapped as Zone AE floodplains. The effective FEMA hydraulic model will be obtained from the FEMA Project Library and from the City of Sierra Vista along with any other available hydrologic data (e.g., HEC-1 files, reports, hand calculations, etc.). The input and results from the effective model will be reviewed along with the effective Flood Insurance Study (FIS) and effective FIRMs. WEST will also obtain available topographic and structure survey data for the Project Area from City of Sierra Vista as well as appropriate drainage plans from nearby subdivisions.

Two site visits to the Project Area will be conducted help identify areas where model cross-sections are most effective and allow estimation of roughness coefficients. Difference between the effective model and the existing conditions in the field will be documented. A photo log of field observations will be prepared after the site visit.

## **Task 2. Field Survey Collection**

WEST will subcontract with Gilbert Technical Services (GTS) to complete the following tasks related to field survey collection.

*Sub-Task A.* Research and field reconnaissance of survey control points for the project area.

*Sub-Task B.* Collection of ground points for drainage channel cross sections for Reach 1 and Reach 3 as defined above. For Reach 1, natural channel cross sections shall be collected every 200' in the riverine direction for the entire 0.25-mile open channel section. Information defining the upstream end of the culvert at the downstream end of Reach 1 (coincident with the upstream end of Reach 2) shall be surveyed as well (e.g., culvert invert elevation, culvert dimensions, culvert headwall dimensions and elevations, etc.).

For Reach 2, a detailed culvert survey will be performed by GTS to represent the ~1,600-foot long culvert (dimensions of the circular culvert throughout as well as the locations of breaks in slope). The City of Sierra Vista will provide topography created from aerial photography flown by Fort Huachuca recently to represent ground elevations in the subdivision overlaying the culvert and the surrounding watershed in the case that the capacity of the culvert is overwhelmed and overland flow occurs. If the CCHFD grants an optional task, GTS can survey cross sections capturing the ground elevation in the subdivision every 200 feet in the riverine direction for the distance from the upstream end of the culvert to the downstream end of the culvert to define natural ground elevations as well to improve on the accuracy of the flown topography.

For Reach 3, roadway profiles will be collected by GTS at 8 roadway crossings as well as State Route 90, and characterization of culvert/bridge crossings will be performed at roadway crossings over the Vista Village Drainageway in the study reach containing culvert/bridge crossings (between 3 and 4 crossings). Culvert/bridge crossing characterizations shall include elevations of upstream/downstream invert and all relevant dimensions defining the crossing structure (including, but not limited to, low chord and

high chord bridge deck measurements, culvert crown elevations, culvert dimensions, etc.). Cross sections and roadway profiles shall be approximately two-hundred fifty (250) feet in length centered on the channel. Roadway crossings shall include 5 cross sections, two capturing the natural ground upstream/downstream of the influence of the structure construction on the channel shape, two capturing the ground elevations at the upstream/downstream faces of the roadway crossing, and one along the centerline of the roadway crossing. Additional cross sections shall be collected every 200 feet in the riverine direction between roadway crossings and downstream of 7<sup>th</sup> Street to State Route 90. Information defining the downstream end of the culvert for Reach 2 (coincident with the upstream end of Reach 3) shall be surveyed as well (e.g., culvert invert elevation, culvert dimensions, culvert headwall dimensions and elevations, etc.).

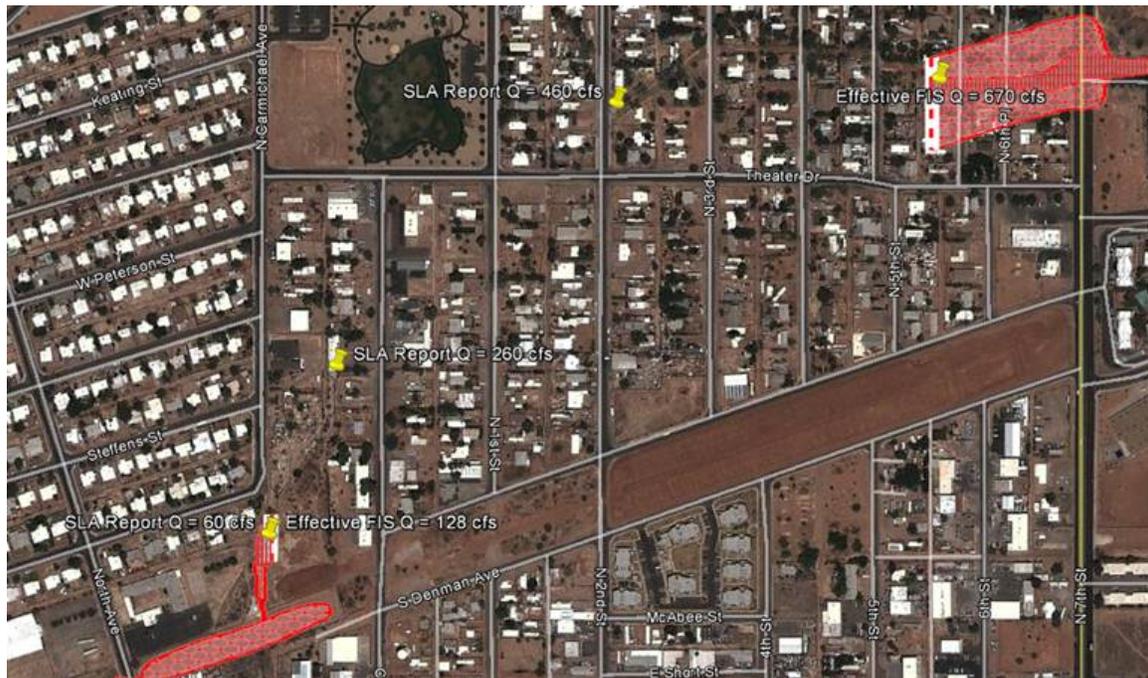
Survey deliverables will be ASCII point data in the locally applicable state plane coordinate system referencing the NAVD88 vertical datum. Field sketches of the upstream and downstream faces of culvert structures and roadway profiles are required.

*Sub-Task C.* Prepare project survey report.

### **Task 3. Hydrologic Analysis**

According to the FIS for Cochise County, peak flows for both the Fab Avenue Wash and the Vista Village Drainageway in the Project Area were based on a report titled “Hydrologic and Hydraulic Investigations Report for the City of Sierra Vista” (Simons & Li, 1986). This report based the hydrologic analysis on HEC-1 modeling documented in the Simons & Li report (1986). Fab Avenue Wash and Vista Village Drainageway are part of the Graveyard Gulch Basin and the headwaters to the basin are all southeast of Buffalo Soldier Trail. According the 1986 SLA report, the drainage area for the Vista Village Drainageway is 0.4 square miles. Since the methods used in the original Simons & Li study (1986) may be dated due to additional development within the study watershed, WEST will review these hydrologic models and update them as needed to represent the existing watershed characteristics to estimate peak flows in the Project Area. This task assumes that the HEC-1 models from the original Simons & Li report (1986) will be available electronically for review and possible updates.

The effective hydrology seems to be incongruous with current methods for hydrologic modeling. There are very large changes in flow rates for very small increases in drainage area. Figure 1 below shows (1) the effective flows in the Fab Avenue Wash near the detention basin (128 cfs) and in the Vista Village Drainageway near 7<sup>th</sup> Street (670 cfs); and (2) the flows leaving the detention basin (60 cfs), at the upstream end of the culvert (260 cfs), and at the downstream end of the culvert (460 cfs) reported in the 1986 SLA report that WEST recently received from the City of Sierra Vista.



**Figure 1. Effective FIS flows versus SLA (1986) flows in the Project Area**

Because these large flow changes are not justified given the small increases in drainage areas, WEST will use HEC-HMS to update the hydrologic model for the study area. To account for all the flow changes along the wash, the hydrology model will extend to State Route 90 as shown in Figure 2 below. The total drainage area for the basin is approximately 1.5 square miles. The final hydrology model boundaries will be based upon existing topography in the area as well as discussions with CCHFD staff.

It is important to provide a detailed engineering review of the Project Area to determine how many subbasins should be included to best represent the hydrologic conditions of the study watershed. Subbasins will be selected based on topography, land use, field reconnaissance, desired flow change locations, etc. Revision of the basin delineation may take place based on changes in hydrologic/hydraulic characteristics such as slope, channel geometry, and landuse. It is assumed that sufficient data will be available to define topography, landuse, and soils type for the hydrologic model.

Each of the steps listed above for the hydrologic analysis will ensure compliance with FEMA standards for hydrologic modeling, and each will be explicitly documented for use in the final FEMA figures, exhibits, and reporting (Task 5 below).



**Figure 2. Approximate study boundaries for the HEC-HMS modeling**

#### **Task 4. Hydraulic Analysis**

Using the flow rates determined from the hydrologic analysis, WEST will perform a hydraulic analysis for the Fry Avenue Wash / Vista Village Drainageway in the Project Area. Because of the complicated issues regarding the flow patterns around the long culvert (i.e., Reach 2) and the drainage basin in Reach 1, WEST will create a FLO-2D model of a portion of the Project Area. The goal of the FLO-2D model will be to better define the hydraulics of the culvert in Reach 2, to map any overland flow in the case where the culvert at the entrance to Reach 2 is overwhelmed, and to better define the flow change locations in the HEC-RAS model that will be used to map floodplains in open channel portions of the study area.

The approximate extents of the FLO-2D model will be defined by the drainage boundaries for the watershed along with Fry Blvd on the south, 7<sup>th</sup> Street on the east, and Charles Drive on the north. This area is approximately 1/3 of a square mile. It appears that any breakout flows from the culvert will drain to the north and end up in the park at Carmichael Avenue and Tacoma Street. The actual extents of the FLO-2D boundary will be determined based on the observations from the field and discussions with CCHFD staff. WEST will select an appropriate grid size and define buildings using area reduction factors (ARFs). The culvert in Reach 2 will be defined using the EPA-SWMM model dynamically linked at runtime to the FLO-2D model. The hydrologic inputs to the FLO-2D model will be determined from the HEC-HMS model. Note that if the FLO-2D boundary needs to be significantly expanded to capture the overland flooding, then that portion of this task will have to be re-scoped. Also note that it is assumed that the topography used for the hydrology study (supplemented by the survey) will be sufficient to capture the flooding locations if the culvert at the basin is overwhelmed. If this is not the case, additional survey will be needed to better define the topography and the FLO-2D grid will need to be updated. Because of the uncertainty regarding the topography in

the overbank areas, it is assumed that any flooding areas in the overbank areas mapped using FLO-2D will be mapped on the FIRM panels as Zone A floodplains.

Once the FLO-2D modeling effort is complete, the Duplicate Effective Model, Corrected Effective Model (if required), and Existing Conditions model will be developed using the one-dimensional program HEC-RAS. Results of the Existing Conditions Model will be used to update the floodplain mapping in the Project Area.

WEST will construct and de-bug an Existing Conditions hydraulic model of Reaches 1, 2, and 3 using HEC-RAS. Reach 2 will be modeled as a culvert in HEC-RAS. The model parameters, especially the ones concerning the large culvert, inside HEC-RAS will be adjusted to agree with the results of the FLO-2D modeling. Manning's *n* roughness coefficients will be estimated during the field reconnaissance. The flow values determined from the hydrologic analysis (Task 3) will be used in the HEC-RAS model. The hydrology will also reflect any overland flooding defined by the FLO-2D model in the event that the culvert on the basin is overwhelmed. A floodway analysis will also be performed on the Existing Conditions HEC-RAS model developed as part of this task.

If the hydrology determined in Task 3 changes significantly enough from the effective hydrology that tying the floodplain downstream of the 7th Street alignment or upstream of Tacoma Street becomes impossible (due to significantly increased or decreased flooding elevations or significantly wider or narrower flooding widths), then WEST could complete an optional task of extending the hydraulic model downstream the additional 0.8 miles to the Arizona State Highway 90 alignment. This is the current limit of FEMA mapping, as downstream of Arizona State Highway 90 is not mapped due to Fort Huachuca. WEST will coordinate closely with CCHFD personnel to determine the necessity of this optional task as needed, and WEST will not begin working on this task without express written consent from CCHFD personnel.

The topography needed to develop cross sectional information for the HEC-RAS model as well as detailed structure surveys of the Vista Village Drainageway culverts for populating the hydraulic structure data required in the HEC-RAS model will be created and delivered to the county as part of Task 2 (Field Survey Collection).

#### **Task 5. FEMA Data Development and LOMR Application**

The HEC-RAS model of the Fry Drainage Channel in the Project Area as determined in Task 4 will be the basis for the floodplain modeling and floodway encroachment modeling tasks to support FEMA mapping. The mapping extent will cover from Fry Blvd downstream to the 7th Street culvert. The area not previously mapped (i.e., Reach 2 and a portion of Reach 3) will now be mapped using the results of the hydraulic study. If all the flow is contained in the culvert in Reach 2, then a label on the floodplain maps will be included indicating that. If there is overland flooding described by the FLO-2D model, then those floodplains will be mapped using FLO-2D and labeled as Zone A floodplains. The limit of mapping proposed herein is 7th Street along Reach 3. The newly mapped floodplain upstream of 7th Street will tie in to the effective floodplain downstream of 7th Street as per the FEMA guidelines for tying an updated delineated floodplain into an existing delineated floodplain. If the tie-in proves impossible (as mentioned as a possibility in the conversation of the hydraulic analysis above), then the

mapping could be extended to Arizona State Highway 90. In this scenario, both the upstream and downstream ends of the proposed mapping area are labeled as “End of Study” on the effective floodplain maps, so no tie in effort would be required for the new floodplains. All updated floodplains and floodways in the Project Area will be delineated for the 100-year flood event. Workmaps showing the floodplain and floodway delineations and revised FIRM panels will be prepared for the map revision submittal. In addition, revised flood profile plots and output summary tables will be created.

A Letter of Map Revision (LOMR) submittal package will be prepared. This package will include copies of the hydraulic model input and output, completed FEMA certification forms, floodplain/floodway workmaps, and annotated FIRMs showing the proposed floodway and floodplain delineations. A CD with the HEC-RAS model files and GIS layers will also be provided. For map revisions within the State of Arizona, State Standard 1 (updated August 2012) requires a comprehensive Technical Support Data Notebook (TSDN). The TSDN will be prepared by WEST for the LOMR submittal.

WEST will coordinate with and respond to comments by CCHFD staff regarding the LOMR submittal. Also included in this task is follow-up with FEMA and their Technical Evaluation Contractor to clarify any questions related to the LOMR submittal or to furnish available information needed during the review process. It is assumed any fees associated with the LOMR application will be paid for by CCHFD.

#### **Task 6. Public Communication**

WEST will provide CCHFD with the necessary text for newspaper advertisements of the updates to the floodplain/floodway limits as required by FEMA. WEST and CCHFD will identify possible periodicals for publication meeting FEMA’s public communication requirements for flood studies used to update the NFIP information on FIRM panels and other FIS documentation.

## EXHIBIT "B"

### FEMA LOMR PACKAGE FOR THE FRY TOWNSITE IN SIERRA VISTA, AZ COCHISE COUNTY COMMUNITY DEVELOPMENT, HIGHWAY AND FLOODPLAIN DEPARTMENT CONSULTANT/SUBCONSULTANT ESTIMATED MANHOURS AND DIRECT LABOR

**CONSULTANT/SUBCONSULTANT NAME:**

WEST Consultants, Inc.

**PROJECT NAME:**

FEMA LOMR Package for the Fry Townsite in Sierra Vista, AZ

**DATE:**

March 27, 2013

#### DIRECT LABOR CLASSIFICATION

CONTRACT TASK/PHASE	PRINCIPAL	PROJECT MANAGER	STAFF ENGINEER	DRAFTER/TECHNICIAN	CLERICAL			TOTAL MANHOURS	TOTAL LABOR
	\$ 227.00	\$ 174.00	\$ 110.00	\$ 91.00	\$ 51.00	(\$/HR)	(\$/HR)		
<b>1. DATA COLLECTION AND REVIEW</b>									
1.1 Data collection and review			12					12	\$ 1,320
1.2 Field reconnaissance			32					32	\$ 3,520
1.3 Field reconnaissance documentation		1	6		1			8	\$ 885
<b>TASK 1 TOTAL</b>		1	50		1			52	\$ 5,725
<b>2. FIELD SURVEY COLLECTION</b>									
2.1 Data collection and review									\$ 11,734
OPTIONAL TASK 2.2 Aerial photography of overland flow area above culvert									\$ 4,300
<b>TASK 2 TOTAL</b>									\$ 16,034
<b>3. HYDROLOGIC ANALYSIS</b>									
3.1 Review Simons & Li HEC-1 models		2	12					14	\$ 1,668
3.2 Develop HEC-HMS model	1	16	40	16				73	\$ 8,867
3.3 Respond to Cochise County review comments		2	4	2				8	\$ 970
<b>TASK 3 TOTAL</b>	1	20	56	18				95	\$ 11,505
<b>4. HYDRAULIC ANALYSIS</b>									
4.1 Develop duplicate effective model			4					4	\$ 440
4.2 Develop corrected effective model			4					4	\$ 440
4.3 Develop updated HEC-RAS model	0.5	2	16	8				26.5	\$ 2,950
4.4 Input culvert data into the HEC-RAS model	0.5	1	8					9.5	\$ 1,168
4.5 Develop culvert model for Reach 2		1	8					9	\$ 1,054
4.6 Develop overland FLO-2D model/EPA SWMM culvert model	1	8	48	48				105	\$ 11,267
4.7 Respond to Cochise County review comments		2	4	4				10	\$ 1,152
OPTIONAL TASK 4.8 Extend HEC-RAS model to Hwy 90 if hydrology changes significantly		0.5	4	2				6.5	\$ 709
<b>TASK 4 TOTAL</b>	2	14.5	96	62				174.5	\$ 19,179
<b>5. FEMA DATA DEVELOPMENT AND LOMR APPLICATION</b>									
5.1 Develop TSDN	1	6	24		4			35	\$ 4,115
5.2 Develop FEMA LOMR application forms		0.5	6					6.5	\$ 747
5.3 Develop GIS data deliverables		0.5	6	8				14.5	\$ 1,475
5.4 Develop workmaps and final figures	0.5	0.5	8	16				25	\$ 2,537
5.5 Respond to FEMA review comments		1	8	8				17	\$ 1,782
<b>TASK 5 TOTAL</b>	1.5	8.5	52	32	4			98	\$ 10,656

**FEMA LOMR PACKAGE FOR THE FRY TOWNSITE IN SIERRA VISTA, AZ  
COCHISE COUNTY COMMUNITY DEVELOPMENT, HIGHWAY AND FLOODPLAIN DEPARTMENT  
CONSULTANT/SUBCONSULTANT ESTIMATED MANHOURS AND DIRECT LABOR**

**CONSULTANT/SUBCONSULTANT NAME:**

WEST Consultants, Inc.

**PROJECT NAME:**

FEMA LOMR Package for the Fry Townsite in Sierra Vista, AZ

**DATE:**

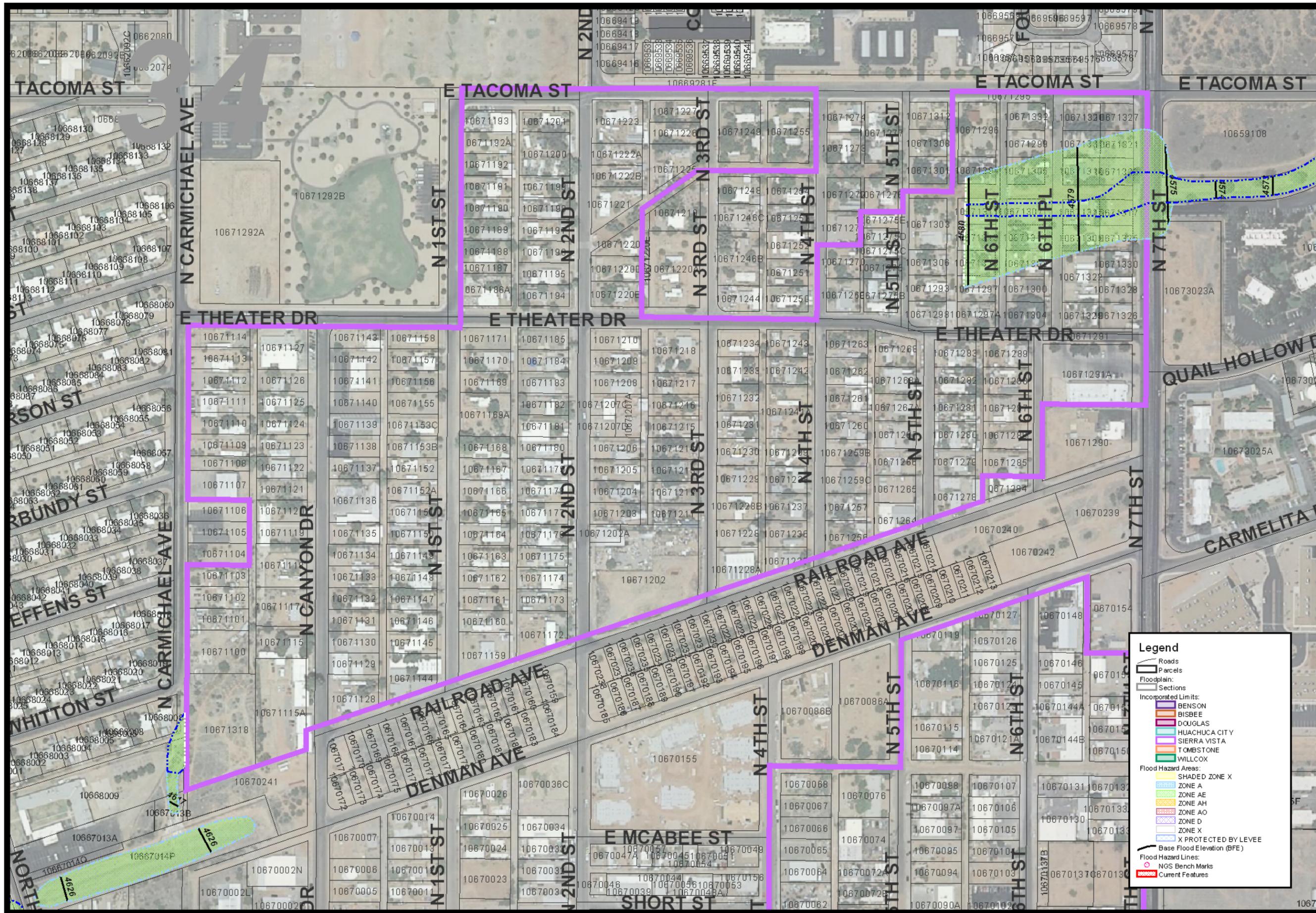
March 27, 2013

**DIRECT LABOR CLASSIFICATION**

CONTRACT TASK/PHASE	PRINCIPAL	PROJECT MANAGER	STAFF ENGINEER	DRAFTER/ TECHNICIAN	CLERICAL			TOTAL MANHOURS	TOTAL LABOR
	\$ 227.00	\$ 174.00	\$ 110.00	\$ 91.00	\$ 51.00	(\$/HR)	(\$/HR)		
<b>6. PUBLIC COMMUNICATION</b>									
6.1 Public meeting (including travel time and meeting materials development)		8						8	\$ 1,392
6.2 Public advertisement		1	4					5	\$ 614
<b>TASK 6 TOTAL</b>		9	4					13	\$ 2,006
SUB-TOTAL LABOR - REQUIRED TASKS (PLUS REQUIRED SURVEY)	4.5	52.5	254	110	5			426	\$ 60,095.50
SUB-TOTAL LABOR - OPTIONAL TASKS (PLUS OPTIONAL SURVEY)		0.5	4	2				6.5	\$ 5,009.00
SUB-TOTAL LABOR - ALL TASKS	4.5	53	258	112	5			432.5	\$ 65,104.50
<b>7. DIRECT COSTS</b>									
6.1 FEMA Data Request to obtain effective HEC-2 model									\$300
6.2 Mileage (2 round trips to Sierra Vista, 200 miles each way at \$0.565/mile)									\$452
<b>TOTAL LABOR + DIRECT COSTS (REQUIRED TASKS ONLY)</b>									<b>\$ 60,847.50</b>
<b>TOTAL LABOR + DIRECT COSTS (REQUIRED + OPTIONAL TASKS)</b>									<b>\$ 65,856.50</b>



Fry Township  
LOMR



**Legend**

- Roads
- Parcels
- Floodplain
- Sections
- Incorporated Limits:
- BENSON
- BISBEE
- DOUGLAS
- HUACHUCA CITY
- SIERRA VISTA
- TOMBSTONE
- WILCOX
- Flood Hazard Areas:
- SHADED ZONE X
- ZONE A
- ZONE AE
- ZONE AH
- ZONE AO
- ZONE D
- ZONE X
- X PROTECTED BY LEVEE
- Base Flood Elevation (BFE)
- Flood Hazard Lines:
- NGS Bench Marks
- Current Features

This map is a product of the  
Cochise County GIS



0 1" = 250'

**Community Development**

**Flood Control District Meeting**

**Meeting Date:** 05/07/2013

Cochise County ALERT Yr 2 of 5

**Submitted By:** Teresa Vasquez, Community Development

**Department:** Community Development

**Division:** Floodplain

**Presentation:** No A/V Presentation

**Recommendation:** Approve

**Document Signatures:** BOS Signature NOT Required

**# of ORIGINALS Submitted for Signature:** 0

**NAME of PRESENTER:** Karen Riggs, P.E

**TITLE of PRESENTER:** Interim Comm. Development Director

**Mandated Function?:** Federal or State Mandate

**Source of Mandate or Basis for Support?:**

**Docket Number (If applicable):**

**Information**

**Agenda Item Text:**

Approve funding for one of two options: Option 1) Install three ALERT stations and yearly system maintenance for collecting rainfall data for the total amount of \$34,347 (tasks 1 & 2 in contract), OR Option 2) Install three ALERT stations and yearly system maintenance for collecting rainfall data (tasks 1 & 2 in contract), and adding 8 Arizona Department of Water Resources (ADWR) rain gauge system maintenance (task 3 in contract) of which 4 were installed in the Horseshoe II and Monument Fire areas, for the total amount of \$43,504.

**Background:**

Cochise County is in the second year of a 5-year plan to expand the ALERT system to collect and compile hydrologic data for the purpose of early flood warning throughout the county. The system consists of a network of remote sensors (rain gauges), and a data concentrator and transmitter at Mule Mountain. The sensors transmit real-time rainfall data via radio frequency to the Mule Mountain tower facility where it is rebroadcast to the existing ALERT system comprised of gauges plus data sources (rain gauges and stream gauges) from the USGS, ADWR, and Pima County. The planned activities for 2012 have been completed and funding for 2013 is requested

**Department's Next Steps (if approved):**

Contract with JE Fuller for purchase, installation and maintenance of 2013 items.

**Impact of NOT Approving/Alternatives:**

Less information regarding emergency flood situations that may develop due to wildfires and other flooding countywide.

**To BOS Staff: Document Disposition/Follow-Up:**

Return approved agenda item to Teresa (Vasquez) Garcia

## Fiscal Impact

**Fiscal Year:** 2013  
**One-time Fixed Costs? (\$\$\$):** 43,504  
**Ongoing Costs? (\$\$\$):**  
**County Match Required? (\$\$\$):**  
**A-87 Overhead Amt? (Co. Cost Allocation \$\$\$):**  
**Source of Funding?:** 261-4110-9-412.600

### **Fiscal Impact & Funding Sources (if known):**

2013 – 3 Gauges plus System Maintenance \$34,347 (Firm Quote)  
2013 - Maintenance of 8 ADWR gauges \$ 9,152 (Firm Quote)  
2013 – Total \$ 43,504

Funding source: 261-4010-9-421.600

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## Attachments

[ALERT\\_ExecutiveSummary](#)

[ALERT\\_Yr2\\_ImplementationPlan](#)



# COCHISE COUNTY

## COMMUNITY DEVELOPMENT

"Public Programs...Personal Service"

### MEMORANDUM

Date: April 24, 2013  
To: Flood Control District Board of Directors  
From: Karen Riggs PE, Director  
Subject: Automated Local Evaluation in Real Time (ALERT) - System for predicting emergency situations by collecting real-time data on rainfall.

**Recommendation:** Approve funding for one of two options.

Option 1) Install three ALERT stations and yearly system maintenance for collecting rainfall data for the total amount of \$34,347 (options 1 & 2 in contract), **OR**

Option 2) Install three ALERT stations and yearly system maintenance for collecting rainfall data (Task 1 & 2 in contract), plus adding 8 ADWR rain gage system maintenance (Task 3 in contraction) of which 4 were installed in the Horseshoe II and Monument Fire areas, for the total amount of \$43,504.

**Background:** Cochise County is in the second year of a 5-year plan to expand the ALERT system to collect and compile hydrologic data for the purpose of early flood warning throughout the county. The system consists of a network of remote sensors (rain gauges), and a data concentrator and transmitter at Mule Mountain. The sensors transmit real-time rainfall data via radio frequency to the Mule Mountain tower facility where it is rebroadcast to the existing ALERT system comprised of gauges plus data sources (rain gauges and stream gauges) from the USGS, ADWR, and Pima County. The planned activities for 2012 have been completed and funding for 2013 is requested.

#### **Fiscal Impact and Funding Sources:**

2013 – 3 Gauges plus System Maintenance	\$34,347 (Firm Quote)
2013 - Maintenance of 8 ADWR gauges	\$ 9,152 (Firm Quote)
2013 – Total	\$ 43,504

**Funding source:** 261-4010-9-421.600

**Next Steps/Actions Items/Follow-up:** Contract with JE Fuller for purchase, installation and maintenance of 2013 items.

**Impact of Not Approving:** Less information regarding emergency flood situations that may develop due to wildfires and other flooding countywide.



April 19, 2013

**TEMPE**

Jon Fuller, PE, RG, PH, CFM, DWRE  
Jeff Despain, PE, CFM  
Annette Griffin, AAS  
Brian Iserman, PE, CFM  
Mike Kellogg, RG, CFM  
Ted Lehman, PE  
Robert Lyons, PE, CFM  
Dwight Nield, BS  
W. Scott Ogden, PE, CFM  
Patricia Quinn, PE, RLS, AVS  
Tyler Azeltine, BA  
Ethan Rode

Cochise County Community Development Department  
Highway and Floodplain Division  
Attn: Karen Riggs, P.E., CFM, County Engineer  
1415 West Melody Lane  
Bisbee, AZ 85603

**RE: Cochise County ALERT System Implementation  
Year 2 (FY 2012/13)**

**TUCSON**

John Wallace, PE, CFM  
Cyrus Miller, PE, CFM  
Chris Rod, PE  
Robert Shand, PE  
Ian Sharp, PE, CFM

Dear Karen:

Thank you for requesting a scope and fee from JE Fuller Hydrology and Geomorphology, Inc. (JEF) to continue to develop Cochise County's (County) ALERT flood warning system. The following is a scope of work for the referenced project. The purpose of this phase of the project is to provide installation and integration of additional remote precipitation sensors, as well as scheduled support services for components of the Cochise County ALERT system.

**FLAGSTAFF**

Cory Helton, EIT, MS

**PHOENIX**

Brian Fry, PE, CFM  
Jon Ahern, PE, CFM  
Nathan Logan, PE, CFM  
Hari Raghavan, PhD, PE, CFM  
Brian Schalk, PE, CFM  
Nate Vaughan, PE  
Skyler Witalison, BS, CFM

**Scope of Work**

**General Description**

The purpose of this Scope of Work (SOW) is to detail the tasks and fees associated with the second year of the Cochise County 5-Year ALERT System Plan implementation expected to occur during FY 2012-2013. Upon completion of this SOW, the County will have three (3) additional precipitation gages installed, and will have recommended routine maintenance performed for two (2) remote sensor/repeater stations and optional maintenance (if approved) for eight (8) additional ALERT stations owned by the Arizona Department of Water Resources (ADWR). The following paragraphs provide an outline of the expected efforts and fees associated with this phase of the project.

8400 S Kyrene Road, Ste 201  
Tempe Arizona 85284  
480.752.2124

40 E Helen Street  
Tucson, Arizona 85705  
520.623.3112

523 N Beaver Street  
Flagstaff, Arizona 86001  
928.214.0887

1 W Deer Valley Road, Ste 101  
Phoenix, Arizona 85027  
623.889.0166



**Task 1: Design and Installation of Three (3) Remote Sensor Stations**

JEF shall design, furnish, install, set up and calibrate three (3) remote ALERT precipitation sensor stations. This work also includes additional reconnaissance to the 3 new station locations, preparation of the FCC license applications, as well as coordination with other local, state and federal agencies and private land owners on the proposed location of the stations.

Unless otherwise noted, each remote ALERT sensor station will consist of a High Sierra Electronics (HSE) Model 3424-00 packaged rain gauge station that includes a standpipe assembly, 3306 ALERT data transmitter with 5-watt VHF data radio, 3 dB gain J-pole omni antenna, solar charging system, and lightning protection. Installation includes coaxial cable, connectors, grounding, and sealants. The station housings will be set in concrete approximately 2 ½ feet into the ground.

The remote stations to be installed shall include:

**ALERT FY12-13 INSTALLATIONS**

Site	Description
1	Near or within the Town of Bisbee
2	Near the City of Douglas
3	In the vicinity of Miller Canyon or Hunter Canyon in the Huachuca Mountain Range

Note that sites 1 and 2 in the table above were listed in the 5-Year Plan document, although recent interactions with County Staff have revealed preferences to examine locations other than those specific locations listed in the Plan. Site 3 in the table above was not included in the 5-year Plan document. Therefore, coordination and field reconnaissance will be required and performed prior to finalization of the locations for installation.

JEF will purchase, install, test and calibrate the installed equipment, and incorporate the new stations into the County’s network. Cochise County shall secure/provide permits, arrange for Blue Stake and provide traffic control during construction (as needed).



## Task 2: Scheduled Maintenance (County-Owned Stations)

Routine scheduled preventative maintenance shall be performed once per year, at a minimum, to each remote sensor station owned and operated by Cochise County, to ensure proper operation of the ALERT system.

Scheduled maintenance at remote sensor stations shall take place during the early Spring prior to the advent of the Summer monsoon and shall include the following tasks:

- Remove battery and replace with freshly-conditioned battery,
- Calibrate and clean tipping bucket,
- Test/check solar panel charging system,
- Clean out funnel,
- Test radio/cable/antenna output/reflection,
- Test/calibrate stream stage sensor,
- Inspect all housing components for damage,
- Inspect grounding system,
- Paint touch up,
- Make minor repairs and/or adjustments such as re-sealing weather-tight connections, tightening loose fitting/fasteners, adjusting top section lock, etc. and
- Test overall data throughput and precision.

Cochise County currently owns and operates 2 ALERT remote stations (1 remote sensor station, 1 repeater station), as well as a base station computer. This scope of work includes maintenance to the 2 ALERT remote stations owned and operated by the county as well as continued operation and maintenance of the ALERT base station located at the offices of JEF (see below).

### ALERT FY12-13 MAINTENANCE

Site	Description
1	Mule Mountain Repeater
2	West Turkey Creek Precipitation

This work does not include the cost to repair/replace major components but does include minor repairs. The deliverable for this task is a maintenance form for each site maintained and pertinent photo documentation.



Task 2 also includes maintenance of the ALERT base station for a period of 1 year, starting July 1, 2013, ending June 30, 2014. This service will include continued basic server maintenance/operation, DataWise software service and ALERT web-page hosting and training (when needed).

### **Task 3 (Optional): Scheduled Maintenance (ADWR-Owned Stations)**

JEF recommends that the county work with ADWR to formally adopt existing ALERT stations in Cochise County and to take over their maintenance. It has been the practice by other counties in Arizona (Greenlee County, Pinal County) to perform maintenance on ADWR owned stations prior to formal adoption in order to assure continuous, reliable operation during the adoption period and to verify that the stations are fully operational at the time the stations are taken over. The attached table shows ALERT stations owned by ADWR located in Cochise County. All ADWR stations are overdue for recommended routine annual maintenance.

ALERT Station	ID	Last Maintained
Rucker	3050	8/25/2011
Portal	620	11/23/10
Dragoon	3060	11/24/10
Willcox	3070	8/25/11
Miller/Carr Canyon	3051	7/8/11
Ash Canyon	3052	7/9/11
King of Lead Mine	3080	8/26/11
Long Park	3090	8/26/11

The deliverable for this task is a maintenance form for each site maintained and pertinent photo documentation.



### **Fee Estimate**

JEF will perform Tasks 1 and 2, providing labor, services, and materials as described above for a lump sum fee of \$34,347. The OPTIONAL Task 3 can be performed for an ADDITIONAL \$9,152 at the County's discretion.

A detailed fee table is attached.

### **Schedule**

JEF will start the work immediately upon receipt of your notice to proceed. JEF will endeavor to complete the tasks by June 30, 2013, with the exception of the Task 2 ALERT base station operations and web-page hosting services, which will begin July 1<sup>st</sup>, 2013 and continue through June 30<sup>th</sup>, 2014.

Thank you again for requesting this Scope of Work and fee estimate from JEF. We are excited about continuing to provide services to the County that will advance towards the common goal of improving the County's flood warning capabilities.

Sincerely,

**JE Fuller/Hydrology & Geomorphology, Inc.**

Cyrus D. Miller, P.E., CFM  
Vice President

Fee Estimate  
Cochise County ALERT System  
**FY 2012/2013 System Installation/Operation/Maintenance**

<b>Labor Costs</b>						
	Contract Task	BRI/CM (\$120/Hr)	CH (\$84/Hr)	TA/ER (\$54/Hr)	BC (\$90/Hr)	Totals
1	Design/Installation of Three (3) Remote Sensor Stations	80	0	85	15	\$15,540
2	Scheduled Maintenance (2 remote locations and base station)	8	0	12	0	\$1,608
3	Optional Station Maintenance (8 ADWR Stations)	45	0	45	0	\$7,830
<b>TOTALS-Tasks 1 and 2</b>		<b>88</b>	<b>0</b>	<b>97</b>	<b>15</b>	<b>\$17,148</b>
<b>Direct Costs</b>						
3-High Sierra Electronics Packaged ALERT Precipitation Stations, Including Shipping						\$12,524
Misc. Supplies: concrete, ground wire and rod, sealant, tape etc.						\$355
1-year base station operation/web page hosting						\$3,000
<b>Tasks 1 and 2 Equipment and Services Direct Costs Total</b>						<b>\$15,879</b>
Tasks 1 and 2 Travel Expenses		Mileage 1000 miles x \$0.72/mile				\$720
		Per Diem \$30 x 4 days x 2 people				\$240
		Hotel - 3 nights x \$120/night				\$360
<b>Tasks 1 and 2 Travel Expenses Total</b>						<b>\$1,320</b>
Task 3 Travel Expenses		Mileage 600 miles x \$0.72/mile				\$432
		Per Diem \$30 x 2 days x 2 people				\$120
		Hotel - 1 night x \$120/night				\$120
		ATV to access King of Lead and Long Park \$350/day				\$350
Optional Task 3 Supplies: 8 batteries x \$35/battery, sealant, tape etc.						\$300
<b>Task 3 Travel Expenses and Other Direct Expenses Total</b>						<b>\$1,322</b>
<b>Tasks 1 and 2 Total Direct Costs</b>						<b>\$17,199</b>
<b>Tasks 1 and 2 Total Cost</b>						<b>\$34,347</b>
<b>Optional Task 3 Total Cost</b>						<b>\$9,152</b>