



# Fiscal Year 2016 Request for Proposals

NM WRI Faculty Directed Graduate Student Research Program

**Closing Date: November 16, 2015, 5:00 p.m.**

Please contact NM WRI if you have any questions.

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The New Mexico Water Resources Research Institute (NM WRI) announces the availability of U.S. Geological Survey 104B grant funds. These funds are made available through the Water Resources Research Act to support research that improves management of the waters of the state of New Mexico. For Fiscal Year 2016, NM WRI anticipates funding two \$30,000 grants with 104B funds. The final number of funded projects is contingent on funding.

This Request for Proposals is issued under the provisions of section 104 of the Water Resources Research Act of 1984 (Public Law 98-242), as amended by Public Laws 101-397, 104-147, 106-374, and 109-471. Section 104 of the Water Resources Research Act directs the Secretary of the Interior to administer program grants to the New Mexico WRI established under the provisions of section 104 of the Act.

## **New Mexico Water Resources Research Institute USGS 104B Request for Proposals, FY 2016**

The NM WRI Faculty Directed Graduate Student Research Program is designed to provide funds for water-related research projects having the potential for attracting more substantial outside funding if the initial research proves successful. Investigators who are beginning their research careers are encouraged to submit proposals, as are investigators proposing new or novel approaches to solving water resources problems. Funding should primarily go toward support of graduate students working on the project.

Proposals are welcomed from any academic discipline; they must identify a significant water resources problem and conduct applied or basic research that will be part of the proposed solution. Principal investigators must hold tenure-track positions at a New Mexico university.

Priority topics for this funding cycle include:

- **integrated statewide water budget:** Projects are sought that will help NM WRRRI provide new, frequently updated, spatially representative assessments of water budgets for the entire state of New Mexico. The statewide water budget effort will complement existing state agency water resource assessments. Studies are sought that will involve new technologies in statewide water budget assessment or that integrate existing regional studies and prototypes into a coordinated statewide water budget. Some of the water budget components for which state agencies require improved information include: evapotranspiration, crop consumptive use, brackish groundwater, and groundwater status and recharge. Projects can emphasize water budget **processes and components** or related **water planning and management** issues.
- **water quality projects:** Project are sought related to a) the Gold King Mine spill in August 2015, and b) assessment and utilization of saline and other impaired waters.

#### **Deadline**

November 16, 2015, 5:00 p.m.

#### **Project Eligibility**

Emphasis should be on NEW information or technology. The application of existing technology to the solution of a water resources problem is generally not eligible for NM WRRRI support unless the existing technology is applied in a novel way. Studies that are so site specific that findings would be of marginal applicability beyond a local area are generally not eligible. Likewise, studies benefiting a single special interest or industry are generally not eligible unless there is significant cost sharing. Studies of a routine monitoring nature conducted without a clear scientific hypothesis are generally not eligible.

#### **Project Cost and Duration**

The maximum award will be \$30,000 in direct costs for a one-year project. Funding is awarded for one year at a time only. NM WRRRI funded projects are considered seed money projects designed to attract outside funding after the initial research period. The initial proposed research may be designed to be conducted during a multiple year period, but the proposal must be written such that a distinct segment is completed by the end of the first year. Renewal request proposals are reviewed and evaluated in the same manner as new proposals with no priority guaranteed.

Indirect costs are not allowed. Each applicant must match each federal dollar with not less than two dollars from non-federal sources. The matching funds must be obligated during

the period of performance. Matching funds may include non-federal salaries, wages and benefits, other sources on non-federal monies obligated specifically to the proposed project, and indirect costs (IDC) on the non-federal portion of the budget, as well as non-recovered IDC on the federal funding request; IDC cannot be charged on tuition or equipment. Federal funds shall not be used to pay indirect costs.

### **Reporting Requirements**

Each project must culminate in a final technical completion report due at the end of the project period. Authors must provide the NM WRRI with an electronic file containing the draft report. After peer review, the report is published as part of the NM WRRI technical completion report publication series and also provided via the institute's webpage. Investigators are encouraged to pursue publication of the findings of their project in other media especially their professional scientific journals and to make presentations at professional meetings and conferences. Investigators are asked to notify the NM WRRI of any subsequent publications that may result from the project. Periodically, investigators may also be asked to provide the NM WRRI with information on their projects, which is used for various reports required of the NM WRRI.

### **Review Policy**

All proposals receive extensive peer review. Proposals will be sent to reviewers knowledgeable in the field who have no conflict of interest in providing a review. After receiving peer review, proposals are reviewed by the NM WRRI's statewide Program Development and Review Board (PDRB) composed of researchers from a variety of academic disciplines and institutions, representatives of state water agencies, and the U.S. Geological Survey. After a proposal is selected for funding, reviews will be available to applicants upon request.

Peer reviewers assess proposals using the following factors.

1. Does the proposal address one of the FY 2016 priority categories?
2. Are the objectives and the proposed methodology clearly stated?
3. Will the approach and methodology lead to satisfying the objectives?
4. Are the scope, effort, and budget reasonable in relation to the approach and stated objectives?
5. Does the proposal reflect new ideas and/or approaches to solving the problem?
6. Does the proposal reflect an adequate awareness of related research complete or being done elsewhere?
7. Will the proposed research produce original data and avoid unnecessary duplication of work being done by others?
8. Are there adequate facilities to complete the proposed work successfully?
9. Is the principal investigator qualified to undertake the proposed work as demonstrated through past training, experience, and publication record in this or closely related research?

The PDRB will receive peer reviewer comments and make recommendations based on the above factors and following factors.

1. Does the proposal address one of the FY 2016 priority categories?
2. Does the proposal clearly identify a water resources problem related to a priority category?
3. Does the proposal characterize the seriousness of the identified problem relative to other water resources problems?
4. Does the proposed research clearly focus on finding a solution to the problem and/or a significant and identifiable element of the problem?
5. Will successful completion of the research make a significant contribution to the solution of the problem?
6. Does the proposed work provide for the involvement and training of students?
7. Does the proposed work have widespread applicability to state and regional problems as contrasted to being site specific?
8. Is the proposal likely to lead to additional and more substantial funding from other sources?
9. On a scale of 1 to 100, how would you rate the overall quality of this proposal?

### **Proposal Content**

Proposals shall be submitted electronically in **pdf** as an attachment to an email message addressed to [coklett@nmsu.edu](mailto:coklett@nmsu.edu). On the "Subject" line of the email message, include "FY 2016 104B Research Program." Proposals will consist of the following.

1. Two letters must accompany the proposal, the Authorization Letter and the signed Institutional Agreement Letter. These letters with original signatures should also be mailed to:

NM WRI FY 2016 – 104B Research Program  
WRI, MSC 3167  
New Mexico State University  
PO Box 30001  
Las Cruces, NM 88003-0001

- 1) Authorization Letter: The authorization letter should be on departmental letterhead with original signatures. The letter should indicate whether the entire proposal or any segment of it has been, or will be submitted to organizations other than the NM WRI for the purposes of obtaining funds. The WRI strongly encourages the pursuit of outside funding. Submission to other agencies does not preclude consideration of the proposal by NM WRI, though duplicate funding for the same work would not be awarded. The proposed budget should reflect cost-share match contributions of 2:1. Indicate the source and nature of those contributions in this letter and include relevant signatures. The letter must contain signatures of the principal investigator, co-investigators if any, department head(s), and the appropriate college dean(s) or research center director(s) as prescribed by your university.

- 2) The applicant must also provide an institutional cost-sharing agreement (letter) signed by an official authorized to commit the applicant to the required 2:1 cost-share match. This letter will be sent to the USGS as required by the program.

Proposals should be created with 12 pt Times Roman font using one-inch margins and single-spaced text. All graphics must be embedded in the text.

## 2. First Page

*Title:* Use a **concise** descriptive title that clearly reflects a specific relationship to a water resources problem. Titles should include “keywords” suitable for indexing and retrieval.

*Priority Problem Area:* Choose **one** of the following:

- Statewide Water Budget Processes and Components
- Water Planning and Management
- Water Quality

*Name of Principal Investigator:* Include name, address, e-mail, and telephone number for principal investigator and co-investigators, if any.

*Project Period:* Proposed starting and ending dates

*Congressional District Number:* District where research is to be conducted

*Statement of Critical Water Resource Problem:* State briefly the regional or state problem to be addressed by the project, including an explanation for the research, who wants it and why. This section should not exceed **two** paragraphs.

*Statement of the Results, Benefits Expected:* Indicate the results, benefits or information expected to be gained from the project and how they could be used. Describe in detail any long-term, large-scale plans that might be explored as a result of this proposal, including possible external funding sources. This section should not exceed **two** paragraphs.

## 3. Pages Two through Four: Main Body

*Nature, Scope, and Objectives:* This section should contain two major sections. The first is a description of the specific water problem to be addressed, in greater detail than the brief summary on the first page. It should describe in non-technical terms, the relevance of the proposed project to the problem. The relevancy and responsiveness of the project to existing or foreseeable local, regional, or national water resource problems is one of the principal means by which federal and state governmental officials evaluate the effectiveness, importance, and value of water resources research programs. The second segment should describe the specific project objectives.

*Methods, Procedures and Facilities:* Provide sufficient information to permit evaluation of the technical adequacy of approach to satisfy objectives. If the proposed budget includes the purchase of a major item of equipment, a description of the equipment with justification for the need must be included in this section.

*Related Research:* Using a review of literature, show the similarities and dissimilarities of the proposed research to completed or ongoing activities on the same or related topics.

*Other Research Support:* Include a brief summary of involvement by the investigator(s) in other current project support, pending proposals to other funding agencies, amount of grant or proposal, and current status. Show the relationship, if any, of your proposed project to your present involvement in other projects.

*Training Potential:* Give a detailed explanation of the ways your project will promote a strong training program in the area of water resources. Include the number of graduates or undergraduates you expect to train, and the degrees and field of specialty you anticipate will result from their participation on the project.

#### 4. Pages Five and Six: Financial Plan Summary

Submit a Budget Breakdown (Attachment A) and Budget Justification (Attachment B) using the following line items. All categories should contain adequate detail as to use of funds. If the project is designed to last for more than one year, a budget estimate for each year and a total for the project should be included. Non-NM WRI contributions to each category, if applicable, should be shown. Note: Indirect costs **may not** be requested as recoverable costs to the project, but can be included as a cost-share/matching contribution. The matching requirement for this program is 2:1 and should be included in the summary.

1. Salaries and Wages: Identify individuals when known, and categories of salaries and wages, estimated percentage of time and month/hours, and the rate of compensation proposed for each. If the rate of pay shown is higher than the current rate of pay, include an explanation. The use of NM WRI funds to supplement research salaries resulting in compensation above the regular salary rate is not allowed. NM WRI funds may not provide salary for investigators during the regular academic year, but could be requested for up to two months of summer salary. The Institute does not allow the budgeting of NM WRI funds for non-university consultants, nor the hiring of university faculty on a consulting basis for extra compensation.
2. Fringe Benefits: Use rates/amounts in conformance with normal accounting procedures. Explain the costs and the basis of the rate computations. Indicate whether the rates are estimated for application purposes or whether they are fixed or provisional rates for billing purposes.

3. Tuition for graduate and undergraduate students
  4. Supplies: Indicate separately the amounts estimated for laboratory, field and/or computer supplies. Provide detail on any specific item that represents a significant portion of the proposed amount. If fabrication of equipment is proposed, list parts and costs separately from other items.
  5. Nonexpendable Equipment: Identify individually any item having a useful life or more than one year and an acquisition cost of more than \$5,000 per unit. Each item must be described and justified as to specific need for the project.
  6. Services or Consultants: The Institute does not allow the budgeting of its funds for non-university consultants, nor hiring faculty for consulting for extra compensation.
  7. Travel: All estimated costs should be itemized showing the number of trips required, type of trip (field, scientific meeting, conference), using rates approved by your university's travel policy. A **maximum of \$1,000** per year will be authorized for active participation at professional meetings or conferences.
  8. Other Direct Costs: Itemize costs not included elsewhere, such as computer and other machine use charges, communications, analysis, equipment maintenance, manuscript page charges, or other costs as appropriate.
  9. Total Direct Costs: Total amount requested from the NM WRII.
  10. Indirect Costs: Shown as a cost share contribution only, based on the applicant's approved rate agreement.
  11. Total Estimated Costs: Total cost of the project including NM WRII funding request and cost share contribution.
5. Beginning on Page Seven

*Investigator(s) Qualifications:* Limit to two pages per investigator. Include the biographical sketch for the principal investigator and any co-investigators using the National Science Foundation format as described below.

(a) Professional Preparation

A list of the individual's undergraduate and graduate education and postdoctoral training as indicated below:

Undergraduate Institution(s) Major Degree and Year

Graduate Institution(s) Major Degree and Year

Postdoctoral Institution(s) Area and Inclusive Dates (years)

(b) Appointments

A list, in reverse chronological order, of all the individual's academic/professional appointments beginning with the current appointment.

(c) Publications

A list of: (i) up to five publications most closely related to the proposed project; and (ii) up to five other significant publications, whether or not related to the proposed project. Each publication identified must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. If the document is available electronically, the Website address also should be identified. For unpublished manuscripts, list only those submitted or accepted for publication (along with most likely date of publication). Patents, copyrights, and software systems developed may be substituted for publications. Additional lists of publications, invited lectures, etc., should not be included. Only the list of 10 publications should be included.

(d) Synergistic Activities

A list of up to five examples that demonstrate the broader impact of the individual's professional and scholarly activities that focuses on the integration and transfer of knowledge as well as its creation. Examples could include, among others: innovations in teaching and training (e.g., development of curricular materials and pedagogical methods); contributions to the science of learning; development and/or refinement of research tools; computation methodologies, and algorithms for problem-solving; development of databases to support research and education; broadening the participation of groups underrepresented in science, mathematics, engineering and technology; and service to the scientific and engineering community outside of the individual's immediate organization.

ATTACHMENT A

Budget Breakdown\*

Project Number: (Number will be provided by the application system)

Project Title:

Cost Category	Federal	Non-Federal	Total
1. Salaries and Wages	\$	\$	\$
- Principal Investigator(s)			
- Graduate Student(s)			
- Undergraduate Student(s)			
- Others			
Total Salaries and Wages			
2. Fringe Benefits			
- Principal Investigator(s)			
- Graduate Student(s)			
- Undergraduate Student(s)			
- Others			
Total Fringe Benefits			
3. Tuition			
- Graduate Student(s)			
- Undergraduate Student(s)			
Total Tuition			
4. Supplies			
5. Equipment			
6. Services or Consultants			
7. Travel			
8. Other direct costs			
9. Total direct costs			
10a. Indirect costs on federal share	XXXXXXXXXX XXXXXXXXXX		
10b. Indirect costs on non-federal share	XXXXXXXXXX XXXXXXXXXX		
11. Total estimated costs	\$	\$	\$
Total Costs at Campus of the University on which the Institute or Center is located.	\$	\$	\$
Total Costs at other University Campus Name of University:	\$	\$	\$

\* This form is provided as a worksheet only

**ATTACHMENT B**

**Budget Justification\***

Project Number: (Number will be provided by the application system)

Project Title:

<p><b>Salaries and Wages for PIs.</b> Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual.</p>
<p><b>Salaries and Wages for Graduate Students.</b> Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual. (Other forms of compensation paid as or in lieu of wages to students performing necessary work are allowable provided that the other payments are reasonable compensation for the work performed and are conditioned explicitly upon the performance of necessary work. Also, note that tuition has its own category below and that health insurance, if provided, is to be included under fringe benefits.)</p>
<p><b>Salaries and Wages for Undergraduate Students.</b> Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual. (Other forms of compensation paid as or in lieu of wages to students performing necessary work are allowable provided that the other payments are reasonable compensation for the work performed and are conditioned explicitly upon the performance of necessary work. Also, note that tuition has its own category below and that health insurance, if provided, is to be included under fringe benefits.)</p>
<p><b>Salaries and Wages for Others.</b> Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual.</p>
<p><b>Fringe Benefits for PIs.</b> Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. . Note: include health insurance here, if applicable.</p>
<p><b>Fringe Benefits for Graduate Students.</b> Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. Note: include health insurance here, if applicable.</p>
<p><b>Fringe Benefits for Undergraduate Students.</b> Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. Note: include health insurance here, if applicable</p>
<p><b>Fringe Benefits for Others.</b> Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. . Note: include health insurance here, if applicable.</p>
<p><b>Tuition for Graduate Students.</b></p>
<p><b>Tuition for Undergraduate Students</b></p>
<p><b>Supplies.</b> Indicate separately the amounts proposed for office, laboratory, computing, and field supplies. Provide a breakdown of the supplies in each category.</p>
<p><b>Equipment.</b> Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than \$5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items. A detailed breakdown is required.</p>
<p><b>Services or Consultants.</b> Identify the specific tasks for which these services, consultants, or subcontracts would be used. Provide a detailed breakdown of the services or consultants to include personnel, time, salary, supplies, travel, etc.</p>
<p><b>Travel.</b> Provide purpose and estimated costs for all travel. A breakdown should be provided to include location, number of personnel, number of days, per diem rate, lodging rate, mileage and mileage rate, airfare (whatever is applicable).</p>
<p><b>Other Direct Costs.</b> Itemize costs not included elsewhere, including publication costs. Costs for services and consultants should be included and justified under "Services or Consultants (above). Please provide a breakdown for costs listed under this category.</p>
<p><b>Indirect Costs.</b> Provide negotiated indirect ("Facilities and Administration") cost rate.</p>

\* This form is provided as a worksheet only