

Appalachian Regional Commission

Request for Proposals

**Appalachian Assessment of Natural Assets:
Water**

Proposals due on or before September 8, 2009

Appalachian Regional Commission, Suite 700
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I. Overview

The Appalachian Regional Commission (ARC) invites proposals from qualified researchers and consultants to bring together and update previous research and analysis regarding the natural assets of the Appalachian region. Effective economic development relies upon sustainable management and use of the natural asset base of the region. This requires developing and updating an inventory of natural assets; analyzing their value, ownership patterns, and usage; assessing their potential contribution to economic development of the region; and creating a framework to assist with planning their best use.

Previous comprehensive studies of Appalachia's natural assets were completed decades ago. The current study would begin by reviewing, updating, and expanding on the valuable contributions and recommendations that resulted from these earlier studies:

- [*Development of Water Resources in Appalachia*](#), U.S. Army Corps of Engineers, Office of Appalachian Studies (1971) see especially *Part I: Summary*; and *Part IV: Planning Concepts and Methods*
- [*Land Ownership Patterns and Their Impacts on Appalachian Communities*](#), ARC Appalachian Land Ownership Task Force (1981)
- [*Southern Appalachian Assessment: Technical Reports and Summary*](#), and [*GIS Database*](#), Southern Appalachian Man and Biosphere Cooperative (1996)

Although these reports were quite in-depth and insightful, the valuable information and analysis they contained is somewhat inaccessible to researchers and economic development practitioners. Current research needs and technology call for a comprehensive, up-to-date, readily accessible database and web-based Geographical Information Systems (GIS) analysis of the natural assets of the region, including ownership, taxation, and usage patterns for forests, farms, minerals, public lands, rivers, lakes, viewsheds, recreational resources, critical habitats, conservation trusts, and resource extraction areas. Access to web-based GIS analysis would provide decision makers with information and tools they need to assess the costs and benefits of alternative uses of natural assets and resources, and enable practitioners to develop comprehensive, sustainable management plans for asset-based development.

In addition, ARC grant reporting currently provides insufficient information about the economic value and impact of asset-based development projects. This not only complicates efforts to develop accurate program performance data, it presents difficulties for outside evaluators. This study should recommend methods to estimate the value of natural resources, evaluate project outcomes, and measure economic impacts of asset-based development. This should include suggestions regarding the best ways to enable development practitioners to justify project costs and document project benefits, perform comparative valuation of alternative uses, and estimate economic benefits of asset-based development projects.

This project is to be conducted in four stages, covering water, forests, land and minerals, and finally social, cultural, historical, and recreational assets. This first study involves surface and groundwater resources. Appalachia contains the headwaters of almost all the major rivers of the eastern U.S. Meeting the future water needs of this growing population, and at the same time providing for the sustainable economic growth and development of Appalachia for the long run, depends on appropriate planning, use, and conservation of the region's critical water resources.

II. Scope of Work

Proposals should present a general outline of the research to be conducted, a work plan, and a schedule for reports and deliverables addressing the following elements:

- Review and summarize relevant research, methodology, data, analysis, and recommendations from reports mentioned in the Overview and other [ARC studies](#) related to natural assets and resources:
 - *Program Evaluation of ARC's Tourism, Cultural Heritage and Natural Asset-Related Projects*, Regional Technology Strategies, Inc. (forthcoming, 2009)
 - [Drinking Water and Wastewater Infrastructure](#), UNC Environmental Finance Center (2005)
 - *Reconnaissance and Study Design of Water Supply Issues*, ARC (1980)
- Review and summarize relevant research, methodology, data, and analysis related to the study of Appalachian natural assets, with a particular focus on water, including:
 - Nick Rahall Institute [Transportation and Economic Development Information System](#) maps of ADHS highways, waterways, railroads, and other physical infrastructure in West Virginia.
 - National Geographic "[Discover Appalachia](#)" database of cultural, recreation, and tourism assets.
 - [First Ohio](#) extensive inventory of business, recreation and tourism assets in Appalachian Ohio.
 - *UT's Southeastern Water Resources Institute and Water Resources Research Center* study of science, technology, and public policy of surface and groundwater issues.
- Develop a database and mapping system to graphically display water resources, quality, quantity, access, and usage. To avoid duplication of effort, this project should propose a way to collaborate and integrate its analysis into existing web sites that highlight Appalachia's natural resources and physical and cultural assets, particularly the Rahall Appalachian Transportation Institute web site.
- Discuss and compare the relative merits of various analytical methods and statistical measures used to create inventories and estimate the value of aquatic resources and their uses, accounting for water quality and access in addition to quantity and pricing. Water quality should account for pollution from a variety of sources, including industrial, agricultural, animal waste, sewage overflow, stormwater runoff and sedimentation, and waste heat. Usage should include at a minimum residential, commercial, industrial, agriculture, mining, recreation, conservation, flood control, and electrical generation and cooling.
- Compute county-level indexes of aquatic assets, measuring the value, density, and concentration of local aquatic assets relative to regional averages (for example, on a per-capita or location quotient basis). Explain the choice of methodology used and compare merits with existing value indexes.
- Prepare spreadsheets and maps of county-level summary statistics for the index and component measures across time (for example, 1970 and 2007) and geography. Prepare charts and maps of Appalachian counties and county aggregations by type (metro vs. non-metro counties, Appalachian vs. non-Appalachian portions of the 13 states, ARC's five categories of economic distress).
- Analyze the relationship between variations in the quantity, quality, or access to water resources to indicators of economic growth and distress. The purpose of this analysis would be to highlight situations where water resources have been either a limiting or an enabling factor in local or regional economic development. This information could be used to forecast or indicate other environments where water quality, quantity, or access could potentially be a limiting factor.
- Summarize conclusions, findings, and policy implications, referring to questions posed in the overview and analysis: How will recent changes in water quality, access, and distribution affect economic opportunity, growth, and productivity in the years to come? What can state and regional policy makers do to mitigate the effects of declining access or quality of water resources, and forestall the most severe consequences?

III. Deliverables

The contract will require a preliminary draft and a final report with an executive summary that integrates and interprets key findings of the study, a series of thematic chapters, and a conclusion with recommendations for implementation of study findings. The report should be written for a non-technical audience and relate the narrative discussion to descriptive statistics, analyses, graphs and maps where appropriate. Technical details, data tables, and details regarding methodology should be presented in appendices. A printed copy of the final report suitable for reproduction and an electronic file copy must be submitted upon completion of the project (in MS Word and Adobe pdf file formats). Deliverables shall include:

- Database and mapping system displaying research findings regarding water resources, quality, quantity, access, economic value, and usage, integrated with an existing GIS platform.
- County-level indexes of aquatic assets measuring economic value, density, and/or concentration.
- Excel workbook, charts, and maps of relevant data, statistics, and indexes compiled during the study. Geographical detail should include counties and county aggregations by type (metro vs. non-metro counties, Appalachian vs. non-Appalachian portions of the 13 states, ARC's five categories of economic distress).
- Statistical analysis the relationship between variations in the quantity, quality, or access to water resources to indicators of economic growth and distress.
- Discussion of ways that changes in water quality, access, and distribution affect economic opportunity, growth, and productivity.
- Recommendations regarding management and policy options that can mitigate the effects of declining access or quality of water resources.

IV. Methodology

The successful applicant will develop and describe a complete methodology and specify resources that will be required to conduct the analysis specified in the scope of work.

- Specification of resources and data sets appropriate for the analysis, including both public and proprietary data sources. Describe data availability and limitations over time and geographical dimensions.
- Discussion of the scope, advantages, and limitations of these resources for the purposes of this analysis, including issues related to geographical coverage and/or aggregation.
- Preliminary specification of the analytical framework, research methods, and statistical techniques to be used for the proposed analysis. Proposals should discuss the relative merits of various approaches, and outline the advantages and limitations of the selected approach.

Proposals can recommend other methodological approaches as needed. In keeping with the overall budget constraint for this project, proposals may present trade-offs among tasks as long as the research design can ensure the accomplishment of the main research objectives of the project.

V. Proposal Submission, Evaluation, Cost and Timing

The Commission anticipates that the level of effort required for this project will be large scale (\$150k to \$249k). The contract will be a FIRM FIXED-PRICE CONTRACT. The Commission anticipates that the work will take 12 months to complete all phases of the project.

An original and three copies of the proposal must be submitted to the Regional Planning and Research Division, Appalachian Regional Commission, 1666 Connecticut Avenue, NW, Suite 700, Washington, D.C., 20009-1068, on or before **September 8, 2009**. Questions about this proposal should be directed to David Carrier, Senior Economist, dcarrier@arc.gov.

Proposals will be evaluated based on the following criteria:

- Qualifications, relevant prior experience, and demonstrated knowledge of existing research on energy workforce issues, energy efficiency, and regional economic development; and the ability to synthesize and interpret research findings in a credible and useful manner.
- Complete, clearly articulated, logical study design and technically competent methodology.
- A credible management proposal for staffing and completing the project in a timely fashion.
- Researchers are encouraged to collaborate with other individuals and institutions, to provide a broader perspective and more thorough coverage of subject matter and geography.
- Cost effectiveness of the proposed project design.

VI. Outline of Technical Proposal Contents

A. Technical Proposal Narrative should not exceed 10 pages, not including the accompanying resumes and organizational background materials.

Project Work Plan and Milestones: Please provide a brief abstract of the proposal by summarizing the background, objectives, proposed methodology, and expected outputs and results of the research. The proposal should describe the phases into which the proposed work can be logically divided and performed. A schedule of milestones and deadlines should be specified for the completion of various work elements, including information collection, interviews, surveys, analyses, quarterly progress reports, preliminary drafts for review, and final draft reports.

The proposal should identify the points and tasks in this research project that will require participation by the Commission and ARC staff. Further, the statement should identify specific information needs according to sources, procedures, and individual tasks of the research that may need to be supplied by the Commission. Finally, the proposal should identify any difficulties that may be encountered in this project and propose practical and sound solutions to these problems.

Personnel performing the work must be described in this section in terms of numbers of people and their professional classification (e.g., project director, web-designer, analyst, program designer, etc.). Brief resumes of the education and relevant experience of the principal investigator, co-investigator, and other key personnel are required. The selected contractor will be required to furnish the services of those identified in the proposal as key personnel. Any change in key personnel is subject to approval by ARC.

B. Management Proposal

The resource capability and program management for planning and performing the work will be considered in the proposal selection process.

- *Business Management Organization and Personnel:* Furnish a brief narrative description of the organization that will perform the proposed work effort, and the authority responsible for controlling resources and personnel.
- *Staffing Plan* A staffing plan is required that describes the contractor's proposed staff distribution to accomplish this work. The staffing plan should present a chart that partitions the time commitment of each professional staff member to the project's tasks and schedule. In addition, the proposal should include a detailed description of activities for key project-related personnel and anticipated deliverables. Finally, the proposal should identify the relationship of key project personnel to the contracting organization, including consultants.
- *Relevant Prior Experience* The proposal must describe the qualifications and experience of the organization and the personnel to be assigned to the project. Information should include direct experience with the specific subject-matter area and organizations, addresses, contact persons, and telephone numbers for such references.
- *Contract Agreement Requirements* This section of the proposal should contain any special requirements that the contractor wants to have included in the contract.

C. Cost Proposal

Each proposal submitted must contain all cost information, including direct labor costs consistent with the staffing plan, labor overhead costs, travel, estimated cost of any subcontracts, other direct costs (such as those for creating or maintaining databases), university overhead, total costs, overhead, and contract fees or profit. ARC policy on allowable indirect overhead costs for university-based research is to permit universities to charge the same rates charged to their own state agencies. The contractor should include estimated expenses for presenting study findings at a one-day meeting at the ARC offices in Washington, D.C. This activity will be over and above routine meetings with ARC staff during the course of the project.

The contract awarded for this research project will be a FIRM FIXED-PRICE CONTRACT, with payments on a quarterly schedule. The contract terms shall remain firm during the project and shall include all charges that may be incurred in fulfilling the terms of the contract.