

**APPENDIX A
SCOPE OF SERVICES**

SECTION 319(h) FY01 GRANT – ELEMENT 24

Project Summary

PROJECT TITLE: Initiative for Watershed Excellence: Upper Altamaha Pilot Project

Lead Organization: University of Georgia River Basin Center
Institute of Ecology
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Project Start Date: May 2005
Completion Date: August 2007

Project Location: The project will focus on the Upper Altamaha River Watershed, specifically the TMDL-listed streams in the Oconee and Ocmulgee watersheds. The eight digit Hydrologic Unit Codes are:

03070101 (Upper Oconee River)	03070103 (Upper Ocmulgee River)
03070102 (Lower Oconee River)	03070104 (Lower Ocmulgee River)
	03070105 (Little Ocmulgee River)

Project Background: This project will pilot the concept of Watershed Management Support Institutes, covering specific geographic areas, to provide technical, organizational and legal assistance to stakeholder groups in order to increase their capacity to enhance and protect water quality.

Objectives:

- To provide residents with information on the quality of the natural resources of their community and possible stresses that may lead to their degradation.
- To aid communities in developing and implementing local solutions once they have determined the problems that threaten their economic and/or environmental sustainability.

- To provide training and technical assistance to local and regional government officials and staff, nongovernmental organizations, business interests and other stakeholders on topics of watershed concern.
- To draw upon other local, state, and federal resources and expertise to avoid duplication of efforts and maximum effective investment in the watershed.
- To create financial self-sufficiency for both the Upper Altamaha Initiative for Watershed Excellence and the UGA River Basin Center.

Activities: Technical assistance in science and engineering, information technology, and resource management. Organizational assistance in project management, outreach and education, and the development of fundraising strategies. Legal assistance in enforcement, contracting, land use planning and ordinance drafting.

Outputs:

- Comprehensive database of watershed stakeholders.
- At least 3 Watershed-Based Plans that meet EPA's current Guidelines for the Clean Water Act Section 319(h) Program.
- Substantial implementation of 1 Watershed-Based Plan.

Expected Outcome:

Establishment of new watershed protection groups, increased capacity of existing groups, reductions in pollution loadings, protective measures and policies implemented in impaired/threatened watersheds, increased public awareness about the importance of Upper Altamaha's water resources as well as threats to those resources and strategies for protecting water quality.

PROJECT DESCRIPTION

1. Project Title:

Initiative for Watershed Excellence (Upper Altamaha Pilot)

2. Lead Organization:

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3. Project Background:

Watershed-based stakeholder groups and local governments need cost-effective technical assistance in science and engineering, information technology, and resource management as well as organizational assistance in project management, outreach and education, and the development of fundraising strategies. They need legal assistance in the arenas of enforcement, contracting, land use planning and ordinance drafting.

The formation of Watershed Management Support Institutes, covering specific geographic areas based on appropriate defining factors such as watersheds, hydrologic units or ecoregions, will provide technical, organizational and legal assistance, thereby increasing the capacity of watershed stakeholders to protect water quality. The program will be piloted in the Upper Altamaha watershed, specifically in the Oconee and Ocmulgee watersheds. The Upper Altamaha watershed was selected because it lies solely within the state of Georgia and is thus not subject to external political pressures; a wide range of land uses, ranging from urban development to agricultural to silvicultural, are practiced within the watershed and thus a variety of best practices may be appropriate to protect and restore water quality; and a number of stakeholders within the watershed have already contacted the University of Georgia (UGA) River Basin Center for technical, legal and organizational assistance. The Upper Altamaha Initiative for Watershed Excellence is a consortium of multidisciplinary faculty, staff and students from the University of Georgia, Georgia College and State University, Gainesville College (Oconee campus), and Fort Valley State University working together to increase the capacity of stakeholders within the watershed to protect water quality. Key academic disciplines involved will include but are not limited to ecology, environmental and public health, engineering, economics, community planning, business, computer sciences, forestry, agriculture, landscape

architecture and environmental design, and law. The consortium will be coordinated by faculty and staff at the UGA River Basin Center.

There are several benefits of providing watershed management support through a consortium of universities and colleges. First, cutting edge research on both threats to water quality as well as strategies for protecting and restoring water quality is usually conducted at the university level. By partnering specifically with local watershed groups, universities can assure both that they undertake research that is most relevant, and once completed, the research is quickly applied to solve real problems. Second, universities are unique in having expertise in the broad array of disciplines-- science, policy, law, organizational development, resource management, environmental design, to name a few-- which provide the foundation for successful watershed management. Third, using graduate and undergraduate labor to help faculty meet the needs of local watershed stakeholders through service learning classes, where students receive academic credit for real watershed protection projects, and through research assistantships is cost-efficient, and provides students invaluable applied and interdisciplinary experience that will make them more effective environmental professionals upon graduation. Fourth, the colleges and universities that are a part of the Upper Altamaha Initiative for Watershed Excellence already have strong ties to and partnerships with the communities in the Oconee and Ocmulgee watersheds that they will serve through this grant. This will save time, money and effort in identifying key stakeholders and project challenges and opportunities.

In order to maximize the results of this demonstration project, an initial scoping process will be used to identify the specific technical, legal and organizational needs of Upper Altamaha stakeholders and then prioritize those needs. The scoping will consist of surveying stakeholder groups, including local governments, land trusts, advocacy organizations and federal, state, and regional resource agencies, and reviewing materials such as TMDLS, river basin management plans and other studies. A team consisting of faculty and staff from our consortium of universities and colleges, representatives from GAEPD, USEPA, the Georgia Department of Community Affairs, the Soil and Water Conservation Commission and possibly other resource agencies will review the surveys and determine the particular services and products the Initiative for Watershed Excellence should provide to most significantly increase the effectiveness of the stakeholder groups. Determining factors will include immediacy of results, impact in number of stream miles affected, and replicability in other parts of the watershed.

Continual project evaluation is important to the Initiative to assure that it provides maximum water quality benefits. Early in the grant period, the Initiative will research existing performance measures used by watershed groups and environmental professionals, and develop a protocol for evaluating the effectiveness of its efforts. These performance measures will include reductions in pollution loadings, number of measures implemented in impaired/threatened watersheds, participation rates in education programs, nonpoint source activities, and public awareness and education efforts. It will apply this protocol every six months and make changes to the project when and where needed to increase effectiveness. The Initiative will collect data to demonstrate success in achieving expected results, and will report its findings to GAEPD, USEPA and Upper Altamaha stakeholders each year and at the end of the project.

The overall goals of the Initiative are to:

- Provide hands-on, practical products and services to promote the growth of, and increase the capacity of, local stakeholder associations committed to improving or maintaining the natural and economic resources of their watersheds.
- Help communities identify watershed-based problems, and develop and implement locally

sustainable solutions.

- Focus efforts on the restoration of TMDL listed streams and particularly those listed for biota, habitat and sediment (see attached list).
- Provide outstanding customer service and be seen as a central watershed resource for watershed planning and management assistance.
- Draw upon expertise of faculty as well as graduate and undergraduate students of its member colleges and universities, building the capacity of these academic institutions to teach environmental management to traditional and non-traditional students.

4. Project Objectives:

- To promote the development and growth of local stakeholder involvement in improving or maintaining the natural and economic resources of their watershed.
- To provide residents with information on the quality of the natural resources of their community and possible stresses that may lead to their degradation through workshops, newspaper articles and other mass-interest publications.
- To aid communities in developing and implementing local solutions once they have determined the problems that threaten their economic and/or environmental sustainability. This includes developing cost-effective tools and products associated with watershed management approaches.
- To provide training and technical assistance to local and regional government officials and staff, nongovernmental organizations, business interests and other stakeholders on topics of watershed concern.
- To draw upon other local, state, and federal resources and expertise to avoid duplication of efforts and maximum effective investment in the watershed.
- To create financial self-sufficiency for both the Upper Altamaha Initiative for Watershed Excellence and the UGA River Basin Center. This includes generating support from outside funders to implement and expand the work of the Initiative within the watershed.

5. Specific Project Activities:

- Formalize collaboration with the other colleges and universities which comprise the Initiative and establish a coordinating team.
- Develop email system of communicating with partners.
- Create a website to communicate with the public.
- Develop survey document to identify watershed stakeholders and their focus and needs.
- Develop database of stakeholders involved in watershed protection to include contact information and a description of geographical coverage and activities.
- Convene a team including representatives of GAEPD and USEPA, Georgia Soil and Water Conservation Commission, Department of Community Affairs and other resource agencies to develop and apply a system for prioritizing stakeholder needs.
- Update work plan based on this prioritization, and detail the specific local projects that will be implemented. Update workplan every six months.
- Undertake specific activities identified in the updated work plan to meet the stakeholders' priority needs.*
- Provide assistance in the form of reading materials, assignments and lectures; rubrics; evaluation materials, etc. to the faculty of University of Georgia, Georgia College and State University, Gainesville College (Oconee campus), Fort Valley State University in developing

and implementing service learning courses which provide solutions to the water quality challenges identified by Oconee and Ocmulgee stakeholders.

- Develop a protocol for evaluating the on-going effectiveness of the Initiative's efforts.
- Apply this protocol every six months and make adaptive project changes as necessary to assure effectiveness.
- Develop plan for self-sufficiency for the UGA River Basin Center (endowment campaign).
- Collect data to demonstrate success in achieving expected results.
- Report success each year and at the end of the project.
- Identify and help procure sources of funding for implementation of watershed protection activities.

*Stakeholders in the Upper Altamaha watershed have requested assistance from the consortium of universities and colleges that comprise this Initiative in all of the following areas. Depending on the results of the prioritization of watershed needs, specific project activities might include the following:

Geographic Information Systems (GIS)

- Provide necessary data layers to support watershed planning and management
- Project and analyze future growth (accurately measure current and forecast future land use)
- Develop and analyze build-out scenarios incorporating low impact development planning (LID); management measures protective of water quality; and altering location, density, and type of future development
- Identify sensitive environmental areas

Economics

- Analyze the costs/benefits of sprawl
- Identify economic incentives for watershed planning & management
- Determine economic value of a resource

Greenspace preservation

- Develop priorities and funding strategies for land acquisition
- Develop educational materials and other support needed to recruit conservation easements
- Develop purchase of development rights (PDR) programs

Onsite sewage (septic)

- Develop management policies
- Inventory/identify sources

Ordinance research and development

- Riparian buffer / floodplain
- Stormwater / erosion and sedimentation / site design
- Illicit discharge
- Zoning

Water & sewer, road crossing (bridges), and utility right of ways

- Identify problem areas, e.g., obstructing fish passage, delivering sediment
- Develop better design guidelines

Watershed awareness

- Create educational materials (posters, newsletters, displays, brochures, etc.)
- Identify ways to use the media (newspaper, radio, TV, video, internet)
- Coordinate and facilitate stakeholder input and outreach groups

Education

- Identify and develop programs to educate elected officials, government employees, civic groups, and the public

Monitoring

- Ambient watershed (stations, events, parameters, costs, data analysis, Quality Assurance Project Plan (QAPP))
- BMP effectiveness
- Citizen efforts
- Pollutant sources
- Illicit discharges
- Biological (threatened & endangered species)
- Inventory data already available within a watershed

Surveys

- BMP compliance (agriculture, forestry, urban) within a watershed
- Stakeholder awareness / public perception / demographics
- Use / value of resource to locals

Training

- Erosion and sedimentation
- Stormwater management
- Agriculture
- Forestry
- Land use planning tools

Funding

- Grant writing / identifying funding opportunities workshops / federal program training
- Stormwater utility development
- Develop permit fee programs (wetlands, development, impact, property transfer)

Restoration activities

- Riparian buffers
- Wetlands

Watershed Plan Development

6. Roles and Responsibilities of Participating Organizations:

A project manager employed by the UGA River Basin Center will oversee the project under the direction of co-directors Laurie Fowler and Ron Carroll. Duties of the project manager will include coordinating representatives of each of the colleges and universities, which comprise the Initiative, overseeing development and implementation of the project work, plan, coordinating interaction with stakeholders, and reporting to the funding agency.

Other project services provided by faculty and staff of the UGA River Basin Center include:

- Administrative assistant and accountant: keeps financial records of the grant, schedules meetings, answers telephone and directs email inquiries to appropriate personnel
- Webmaster and education specialist: creates and maintains website documenting work of the Initiative and its partners and allowing input from the public
- Economist: addresses economic questions regarding water quality protection such as cost of community services, taxation issues, etc.
- Ecologist: researches aquatic system response
- Planner: assists in mapping resources, threats and land uses, modeling specific responses and developing plans to protect water quality
- Project specialist: assists in applied ecological and policy research
- Legal specialist: conducts legal research as needed

- Graduate student research assistants: providing research as needed

Services provided by the Cooperative Extension Service at the University of Georgia College of Agriculture and Environmental Sciences will be overseen by Mark Risse and include:

- Cooperative extension coordinator: coordinates the 52 extension agents in the watershed to help identify stakeholders, needs and identify/train solutions
- Project specialist: assists in applied engineering and policy research

Other faculty, students, and staff from Mercer University, Georgia College and State University, Gainesville College (Oconee campus), Fort Valley State University and the University of Georgia will assist in specific activities identified as highest priorities through research assistantships and service learning classes. Both graduate and undergraduate students will be drawn from the disciplines of law, ecology, environmental and public health, engineering, economics, community planning, business, computer sciences, forestry, agriculture, landscape architecture and environmental design. The responsibilities of these students, faculty and staff as well as non-academic partners within the watershed will be spelled out in detail in a more specific work plan reflecting watershed priorities to be submitted to EPA/EPD by September 1, 2005.

Stakeholder groups who have contacted the UGA River Basin Center for assistance on watershed issues within the past year, and who we expect to be able to serve and partner with pursuant to this grant, include the U.S. Forest Service, the Ocmulgee Land Trust, the Ocmulgee Corridor Steering Committee, the Georgia Department of Community Affairs, the Georgia Department of Natural Resources, the Nature Conservancy, the Georgia Conservancy's Ocmulgee National Heritage Corridor Feasibility Study, the Georgia Wildlife Federation, the Lake Jackson Homeowners Association, the Upper Oconee Watershed Network, the Georgia River Network, as well as several of the regional development centers (Atlanta Regional Commission, Northeast Georgia, Middle Georgia, and Georgia Mountains) and county and municipal governments within the watershed (Athens-Clarke County, Oconee County, Macon).

Though without going through the prioritization process we cannot commit to undertake any particular project, we *can* provide an example of the kinds of partners and roles a particular project might involve. Athens-Clarke County, for example, has asked us to draft a mass-grading ordinance to control erosion and sedimentation. Suppose our scoping indicates that controls on mass grading is a high priority throughout the Upper Altamaha watershed. In that case, our team would meet with the Environmental Officer for Athens Clarke County, Dick Field, to define the specific objectives of the ordinance. Other county agency directors and affected stakeholders might also be involved in this initial meeting. Students of the land use clinic at the University of Georgia Law School would draft an ordinance under the direction of Supervising Attorney Jamie Roskie and present it to the environmental officer, the county attorney, the soil and erosion control and planning staffs, and a citizens committee appointed by the County Commission. Based on their input, amendments to the ordinance might be necessary. The students would make these changes and the ordinance would be presented to the County Commission for a vote. The students would draft a model ordinance, including annotations explaining the rationale for specific provisions and individual adjustments each community might want to make, to be used by the other local governments in the watershed. The Regional Development Centers might sponsor a workshop for their member governments' planning, erosion control and legal staff to explain the ordinance. The Georgia River Network might post the model ordinance on their website and/or sponsor a workshop for activists who are interested in introducing their local governments to this particular tool.

Potential partners who we have not yet been in contact with regarding this project include Robins Air Force Base, the U.S. Army Corps of Engineers, Georgia Power, the Lake Oconee Association, the Reynolds Plantation, the Soil and Water Conservation Districts, the remaining regional development centers (Central Savannah River, McIntosh Trail, Heart of Georgia South Georgia and Southeast Georgia), and the remaining local governments. Again, the responsibilities of these non-academic partners will be spelled out in a more specific work plan reflecting watershed priorities to be submitted to EPA/EPD by September 1, 2005.

Over the next two months we will contact both of these groups via email survey and follow-up phone calls where necessary in order to determine the watershed activities they are working on and what particular assistance the Upper Altamaha Initiative for Watershed Excellence may provide.

7. Specific Outputs (A more detailed list will be provided by September 1, 2005 to reflect the results of our scoping/prioritization process)

- Comprehensive database of watershed stakeholders including contact information, geographical scope of coverage and focus
- At least 3 Watershed-Based Plans that meet EPA's current Guidelines for the Clean Water Act 319 program (see www.epa.gov/fedrgstr/EPA-WATER/2003/October/Day-23/w26755.htm)
- Substantial implementation (such that the actions in the Plan are completed or underway) of at least 1 of these Watershed-Based Plans
- Document measuring or estimating sediment, nitrogen and phosphorus load reductions (in pounds per year) resulting, at least in part, from the support the Institute has provided to local stakeholder groups
- Website
- **Best Management Practices:** N/A
- **Products:** Products may include public information and educational materials. Two hard copies and one electronic copy of all reports and project documents will be submitted to the GAEPD for review and approval.
- **Semi-Annual Reports:** One hard copy and one electronic copy of a Semi-Annual Report will be submitted to GAEPD February 28th and August 31st of each year.
- **Final Closeout Report:** Two hard copies and one electronic copy of the Final Close-Out Report will be submitted to the GAEPD and USEPA for review and approval.

Depending on the results of our prioritization exercise, specific outputs may also include:

- Geographic Information Systems support and mapping
- Model ordinances and policies
- Organizational development support for young stakeholder organizations
- Financial management support for stakeholder groups
- Education and outreach strategies and materials
- Grant writing support
- BMP implementation design
- Economic analysis
- Training
- **Monitoring:** Water-Quality Assessments/Biological Assessments pursuant to an EPA-approved QAPP.

8. Measures of Success:

Primary results will include:

- A coordinated interdisciplinary team of academic experts from colleges and universities within the watershed assisting stakeholders in the protection of water quality.
- A network for communicating among the stakeholders in the watershed.
- A vehicle (website) for publicizing watershed protection efforts by stakeholders throughout the watershed.
- Establishment of new watershed protection groups while sustaining existing groups.
- Increased capacity of existing watershed protection groups.
- Reductions in pollution loadings for any BMPs installed as a result of local efforts.
- Protective measures and policies implemented in impaired/threatened watersheds,
- Increased public awareness about the importance of Upper Altamaha's water resources as well as threats to those resources and strategies for protecting water quality.

Secondary results will include:

- Graduation of scores of students who are well-versed in watershed management approaches and have been involved in their real-world applications while still in school.
- New model for providing comprehensive assistance to increase the capacity of watershed stakeholder groups.
- Statistically significant customer survey data to verify that the Institute provides a high level of value and relevance to surrounding communities.
- The River Basin Center will be self-sustaining at the end of 5 years.

More specific measures of success will be developed as we define particular project activities pursuant to our scoping process and will be submitted by September 1, 2005.

9. Milestones

Milestone	Starting Date	Completion Date
Execute contract/interagency agreement with the Georgia Environmental Protection Division	05/05	05/05
Formalize partnership with other colleges and universities in our consortium	05/05	07/05
Develop email system of communicating with academic partners	05/05	05/05
Develop website	05/05	08/05 (updated monthly)
Develop survey document to identify watershed stakeholders and their focus and needs and list recipients	05/02/05	05/13/05
Develop a system for prioritizing stakeholder needs to select specific initiative activities	05/02/05	05/13/05

Meet with consortium partners to identify services UGA River Basin Center can provide to increase their service-learning capacity in water protection activities	05/02/05	06/17/05
Develop protocol for ongoing evaluation of Initiative's efforts	05/02/05	05/31/05
Do background research on watershed issues (review TMDLs, river basin plans, newspaper articles, other materials)	05/02/05	05/16/05
Distribute stakeholder surveys	05/16/05	05/16/05
Collect the surveys	05/16/05	05/31/05
Do follow-up research on particular needs	05/16/05	06/17/05
Develop database of stakeholders	06/17/05	06/24/05
Prepare list of needs identified and email out to prioritization team	06/17/05	06/21/05
Prepare workplan and budget for submittal for year three funds—FY2006 Section 319(h) funds	06/01/05	06/30/05
Convene team to prioritize the needs of watershed stakeholders and identify particular activities to be carried out by the Initiative	06/30/05	06/30/05
Develop detailed work plan describing particular projects chosen, activities to implement, output, measures of success, roles of partners and budget.	07/01/05	08/30/05
Undertake specific projects as identified by prioritization team	07/01/05	04/14/07
Collect data to demonstrate success in achieving expected results	07/05/05	04/14/07
Submit detailed work plan and budget for three-year project to GAEPD	07/31/05	09/01/05
Submit Semi-Annual Report for GRTS update to GAEPD (every August and February)	08/31/05	02/28/07

Develop plan for River Basin Center self-sufficiency	09/05	07/06
Submit final project close-out report to GAEPD for review and approval	04/30/07	04/30/07

10. Project Locations:

The project will focus on the Upper Altamaha River Watershed, specifically the Oconee and Ocmulgee watersheds and the impaired streams designated on the *April 2002, Final 2002 305(b)/303(d) List Documents*. The eight digit Hydrologic Unit Codes are:

- 03070101 (Upper Oconee River)
- 03070102 (Lower Oconee River)
- 03070103 (Upper Ocmulgee River)
- 03070104 (Lower Ocmulgee River)
- 03070105 (Little Ocmulgee River)

11. Pollutants to be Addressed:

Sediment, Pathogens (fecal coliform), Organics, Metals, Oil and Grease

12. Impaired Waters:

Priority will be given to activities addressing the criterion violated of TMDL listed streams, particular those listed for biota, habitat and sediment. Activities may implement actions to alleviate the criterion violated for certain segments.

13. Planning Activities:

The project will develop three new or revise at least three existing TMDL Implementation Plans and/or Watershed Management Plans. The project will substantially implement at least one of the plans.

14. Major Nonpoint Source Pollution Categories and Subcategories:**Construction**

- Highway/road/bridge
- Land development or redevelopment

Urban runoff

- Municipal
- Commercial
- Residential
- Highway/Road/Bridge Runoff

Land Disposal

- Onsite wastewater systems

Hydromodification

- Channel Erosion/Incision
- Removal of riparian vegetation
- Streambank modification/stabilization
- Other habitat modification

Additional pollutants addressed may include:

Agriculture

- Non-irrigated crop production
- Irrigated crop production
- Specialty crop production
- Pasture grazing

Silviculture

- Harvesting/residue management
- Reforestation
- Forest management
- Road construction/maintenance

15. Nonpoint Source Pollution Activities:

Education/Information Activities

- Local Education/Information Programs

Technical Assistance

- Technical Assistance to State/Local Government
- Other Technical Assistance Activity

Planning Activities

- Watershed Planning
- TMDLs

(May also include: Water Quality Assessment/Monitoring, Restoration/Protection/Prevention)

16. Best Management Practices to be Implemented:

N/A