




Lexington-Fayette Urban County Government
DEPARTMENT OF ENVIRONMENTAL QUALITY AND PUBLIC WORKS

Jim Gray
Mayor

David L. Holmes
Commissioner

TO: Mayor Jim Gray
Urban County Council

FROM: Charles Martin, P.E., Director 
Division of Water Quality

DATE: September 10, 2014

SUBJECT: Requesting Council Authorization to Partner with the Resource Institute, Inc. for Submitting Grant Applications to the U.S. Department of Agriculture Resource Conservation Partnership Program

The purpose of this memorandum is to request approval to partner with the Resource Institute, Inc. in the submission of water quality capital project oriented grant applications to the U.S. Department of Agriculture Resource Conservation Partnership Program (RCPP).

The Resource Institute has been actively recruiting partner agencies to identify RCPP grant eligible projects. Partner agencies will identify projects that involve the restoration, enhancement, and reestablishment of streams and wetlands that have been degraded by agricultural land use and development throughout the geographic region of Kentucky and Tennessee. Resource Institute will act as the grant administrator in securing and implementing RCPP grant funded projects.

Agencies currently considering a partnership with Resource Institute are shown in the table below. There is no budgetary impact in committing to this partnership.

If you have any questions or need additional information, please contact me at 425-2455.

Partner Institution	Primary Contact
University of Kentucky	Steve Higgins shiggins@uky.edu
Kentucky Division of Water	Peter Goodmann Peter.Goodmann@ky.gov
Lexington-Fayette Urban County Government	Charles Martin chmartin@lexingtonky.gov
West Tennessee River Basin Authority	David Salyers, (731) 784-8173 david.salyers@state.tn.us
The Nature Conservancy, TN Chapter	Jeff Fore (731) 343-2004 jfore@TNC.org

City of Middlesboro, KY	Isaac Kremer, (606) 248-6155 downtownmiddlesboro@gmail.com
City of Chattanooga, TN	Bill Payne, (423) 643-6160 payne_bill@chattanooga.com
Stantec Consulting Services Inc.	George Athanasakes, (502) 727-7144 george.athanasakes@stantec.com

Kentucky and Tennessee Regional Stream, Wetland, and Water Quality Initiative

Section 1. Application Cover

Mission Statement: *Our objective is to restore and protect stream and wetland ecosystems within Kentucky and Tennessee, and improve overall water quality through strategic partnerships.*

Project Manager: Mr. Charles Anderson
(336) 750-0522
canderson@resourceinstituteinc.org

Lead Partner: Resource Institute, Inc.
2714 Henning Drive
Winston-Salem, NC 27106
Phone - (336) 750-0522
Fax - (336) 750-0177

The lead partner, Resource Institute (RI), is a national 503(c) non-profit focused on resource conservation with a long history of providing conservation practices working in conjunction with NRCS. RI has developed a model program of promoting resource conservation in western North Carolina and will bring this expertise to this project. Other collaborating partners are summarized below.

Collaborating Partners:

Table 1. Collaborating Partner Information

Partner Institution	Primary Contact
University of Kentucky	Steve Higgins shiggins@uky.edu
Kentucky Division of Water	Peter Goodmann Peter.Goodmann@ky.gov
Lexington-Fayette Urban County Government	Charles Martin chmartin@lexingtonky.gov
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RCPP Funding Pool Targeted: National Funding Pool

General Project Summary:

The project will involve the restoration, enhancement, and reestablishment of streams and wetlands that have been degraded by agricultural land use throughout the geographic region of Kentucky and Tennessee. Water quality degradation and inadequate habitat for fish and wildlife are considered top resource concern priorities in these states. Water quality will be the primary national priority addressed by

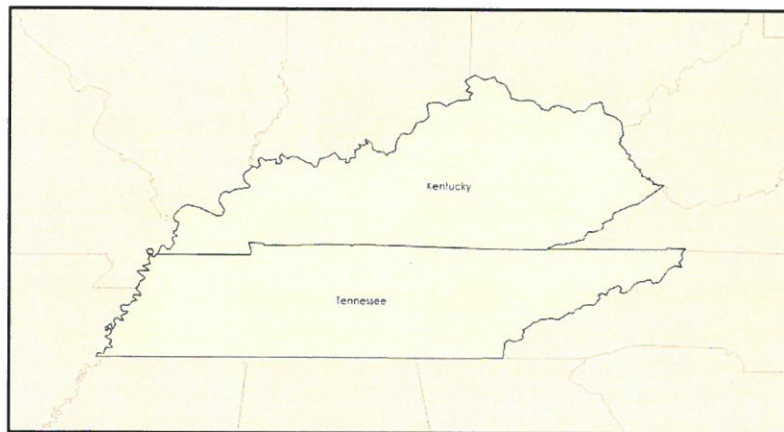
this regional project. Secondary resource concerns addressed by the project will include water quantity through flood reduction measures and levee setbacks; erosion reduction through use of BMPs and streambank stabilization procedures; protection of at-risk species habitat (Fish & Wildlife) through creation of riparian buffers and aquatic habitat, and improvement of plant community diversity in agricultural areas. In addition to addressing these key resource priorities, creating opportunities for educational and recreational use of water resources will also be major objectives of this project. An underlying, but important goal of the project is to promote the co-existence of agriculture and conservation.

Project outcomes will be measured by post-implementation monitoring of stream and wetland restorations and by detailed tracking of protected land acreages. Tracking of project results will include thorough recordkeeping of the length of streams restored, area of wetlands restored, area of riparian buffer restored, and area of land permanently protected from development. Secondary outcomes to be tracked will include number of landowners participating, number and type of agricultural best management practices implemented, number of stakeholders impacted by outreach and education initiatives, and impact of the project on economic development.

For this project, we have assembled a diverse team of project partners who will collaboratively work together to provide financial and technical assistance, promote stakeholder involvement, and utilize innovation to develop cost effective solutions to improve at risk ecosystems and promote conservation.

Geographic Focus:

The geographic focus of the project will be defined by the state boundaries of Kentucky and Tennessee.



Proposed Project Dates:

Project Start Date: FY 2015

Project End Date: FY 2019

Assistance Requested:

Table 2. Assistance Requested from Covered Programs

Fiscal Year	EQIP Program		ACEP Program		CSP Program	
	FA Funds Requested	TA Funds Requested	FA Funds Requested	TA Funds Requested	FA Funds Requested	TA Funds Requested
2015	\$2,045,000	\$0	\$140,000	\$0	\$115,000	\$0
2016	\$2,045,000	\$0	\$140,000	\$0	\$115,000	\$0
2017	\$2,045,000	\$0	\$140,000	\$0	\$115,000	\$0
2018	\$2,045,000	\$0	\$140,000	\$0	\$115,000	\$0
2019	\$2,045,000	\$0	\$140,000	\$0	\$115,000	\$0

Total Amount of RCPP Funding Requested:
 RCPP Funding for FA = \$11.5 Million
 Matching Funds from Partners = \$9.9 Million
 In-Kind Contributions from Partners = \$0.6 Million
 Total Initiative Budget = \$21.5 Million

RCPP FA funds will be used for project implementation and construction. Matching Partner funds and in-kind services will be used for project design, permitting, and administrative costs.

Section 2. Project Summary

Project Objectives:

The project will involve the restoration, enhancement, and reestablishment of streams and wetlands that have been degraded by agricultural land use and development throughout the geographic region of Kentucky and Tennessee. This will be achieved through applying the latest technological approaches in stream and wetland restoration and water quality BMPs. The project objectives are to provide a measurable improvement in the quality of water resources in this region by increasing aquatic habitat availability and diversity, restoring function in stream, riparian and wetland areas, and increasing the amount of protected land area in riparian buffer zones. By improving function and increasing land area of streams, riparian buffers and wetlands, the project will help reduce the overall load of non-point source agricultural pollutants entering waterbodies in the region. This outcome will benefit resource users in the watershed as well as help producers reduce or avoid the need for regulation of agricultural land use. Specific natural resource concerns that will be addressed by this project are summarized in Table 3. These concerns were identified by project partners based on their experience in the region.

Table 3. Resource Concerns to be Addressed, Objectives, and Typical Practices

Resource Concern	Objectives	Specific Conservation Practices
Water Quality (National Resource Concern)	Reduce sediment entering waterways. Reduce nutrients loadings to waterways. Reduce bacterial loadings to waterways. Reduce stream temperatures. Increase dissolved oxygen. Improve Water Quality in Karst Environments.	342 Critical Area Planting 382 Fence 391 Riparian Forest Buffer 484 Mulching 578 Stream Crossing 580 Streambank and Shoreline Protection 584 Channel Bed Stabilization 590 Nutrient Management 527 Karst Sinkhole Treatment
Water Quantity (National Resource Concern)	Promote retention of flood waters. Restore floodplain access. Reduce channel confinement by setting back levees. Raise local water table levels. Eradicate invasive plants.	314 Brush Management 566 Land Grading and Shaping 656 Constructed Wetland 657 Wetland Restoration 658 Wetland Creation
Soil Erosion (National Resource Concern)	Reduce sediment from stream erosion. Promote the deposition of alluvial sediment. Capture eroded sediments before reaching waterways.	342 Critical Area Planting 391 Riparian Forest Buffer 484 Mulching 580 Streambank and Shoreline Protection 584 Channel Bed Stabilization 601 Vegetative Barrier

Resource Concern	Objectives	Specific Conservation Practices
Fish and Wildlife (National Resource Concern)	Increase quantity and quality of food for fish/benthic organisms. Increase aquatic cover/shelter for fish/benthic organisms. Reduce stream temperatures. Improve terrestrial habitat.	396 Aquatic Organism Passage 391 Riparian Forest Buffer 580 Streambank and Shoreline Protection 584 Channel Bed Stabilization 395 Stream Habitat Improvement & Management 657 Wetland Restoration 644 Wetland Wildlife Habitat Mgmt

Evaluating Project Outcomes:

Success of the project will be measured by extensive post-implementation monitoring of stream and wetland restorations and by detailed tracking of protected land acreages. Monitoring plans will be developed for project sites, and methodologies will be based on approved state protocols. Monitoring will be directed at evaluating specific project goals, and may include water quality sampling, surveys of native vegetation species establishment, geomorphic stability assessments, and aquatic habitat assessments.

Project records will track the amount of new land placed into conservation, including the miles of stream length restored, the area of wetlands restored or reestablished, the area of riparian buffer zones created or preserved, and the area of land protected through permanent conservation easements.

Additional indicators of project success will also be tracked and/or evaluated, including:

- Positive impact to economic development in the form of tourism and job creation
- Number of land owners participating in the project
- Number and type of agricultural best management practices implemented as a result of the project
- Physical reduction of pollutants entering streams and drinking water sources
- Delisting of streams from the 303d list
- Reemergence of native plant and animal species to the project area
- Increase in public awareness/education and recreational uses
- Decrease in carbon footprint

Project Activities, Innovation and Sequence of Implementation:

Project areas will be identified initially through existing partner relationships. Potential project areas may include streams with severe bank erosion, narrow/non-existent riparian buffers, invasive species, and/or little to no cover for fish and macro-invertebrates. Through the implementation of the proposed projects, water quality will be improved by reducing sediment, temperature, fecal coliform, nitrogen and phosphorus, herbicides, and pesticides pollutant loading. Habitat diversity will be promoted through increased riparian buffer widths, the reemergence of native species/removal of invasive species vegetation, and the installation of in-stream habitat structures. Potential projects will be evaluated based on several factors, including, but not limited to: cost-benefit, level of degradation of the system, contiguous land access, available riparian buffer width, potential to overcome impairments, potential for improvement to local economy, community dependence on stream, project location, number of relationships developed as a result of the project, linkage to agricultural activities, potential to include educational and recreational components, and the potential for creation/enhancement of sensitive habitats. Key activities to be implemented as part of this project include:

- Stream and wetland restoration projects that address resource concerns of the region – degraded water quality and inadequate aquatic habitat.

- Place land in conservation – riparian areas, wetlands, habitat corridors in agricultural areas, at-risk habitat or natural lands, suitable habitat for native species and threatened or endangered species, land important or valuable to outdoor recreation.
- Use projects for educational purposes – public outreach, conservation education, landowner education in responsible agricultural practices, workshops.
- Implement BMPs that encourage sustainable co-existence of agriculture and other environmental functions. Reduce pollutant loading from agriculture to regional watersheds, thereby reducing the regulatory stress on agricultural production.
- Create recreational opportunities that use water resources to generate economic value for project communities.

Many potential project areas identified will likely have a stream restoration component. Stream restoration will be conducted through the implementation of the proven Natural Channel Design technique. Using this method, dimensions and features of a naturally functioning, stable, and healthy stream system are applied to a degraded system that has similar watershed characteristics. In-stream structures that mimic natural habitat will be installed to provide cover for fish and macro-invertebrates. Natural Channel Design is a sustainable and often cost-effective solution to improving water quality, halting loss of land caused by erosion, improving habitat diversity, and reducing the need for regulatory involvement. The field of stream restoration is rapidly evolving and the project funding will be used to implement some of the latest technologies available, as well as pilot new techniques for including recreational and educational opportunities in conservation projects. Where appropriate, the latest and most effective BMPs will be implemented to further improve water quality.

Minimizing loss of natural lands, especially in riparian areas, is an important component of the project. Part of the funds devoted to this project will be used to protect the land around restored water resources in perpetuity through conservation easements and other deed restrictions. Protection of riparian and wetland areas within the geographic focus area will promote and enable the co-existence of agriculture and conservation. Agricultural producers will benefit from this partnership through assistance in developing and implementing responsible agricultural practices and conservation projects. Landowners and other stakeholders also stand to benefit through the reduction of soil erosion in riparian areas and within streams, natural reduction of nutrient loading through reestablishment of wetlands, and numerous other direct and indirect beneficial outcomes.

The partners involved with the project are dedicated to education and outreach in the project communities. Numerous educational and recreational opportunities are expected to result from the restoration of water resources in the geographic focus area. The partners will organize and conduct workshops for project communities to educate the land owners and farmers on the importance of conservation, water quality, stream/wetland restoration, best management practices, and other pertinent subjects. Project efforts will be directed at increasing public awareness of restoration projects and the importance of land conservation. In addition, the project will utilize innovative stream restoration techniques, including the use of multi-purpose in-stream structures that function to stabilize the stream, provide aquatic habitat, and create recreational value for stream uses such as fishing and kayaking. The improved recreational opportunities are expected to encourage economic development and increase business related to outdoor activities and eco-tourism within the region.

The diversity of the partner organizations involved will ensure that the project funding is used to implement solutions that are important and beneficial to various stakeholders in the community. The partner organizations are already well-known and established in communities throughout the project region through cooperative extension services, existing conservation initiatives, and other successful restoration projects. The partners will use these relationships within the region to identify resource management opportunities that will provide significant and enduring improvement to regional water

quality. Through the implementation of this program, additional new relationships with land owners and farmers will be forged.

Innovation and other benefits of this project include:

- Biodiversity and Habitat – The removal of invasive plants and re-introduction of region specific native plant species will increase diversity and habitat for native terrestrial species.
- Carbon Sequestration – Riparian buffers planted with native trees and vegetation will help to offset carbon emissions to the atmosphere. It is estimated that a small tree can absorb as much as 26 pounds per CO₂/year while a large tree can absorb as much as 48 pounds of CO₂/year.
- Economic Benefits – The project will likely create opportunities for increased tourism, job creation, and provide a cost savings in reduction of regulatory action/need.
- Technological Advancement – Through a combination of utilizing proven techniques and piloting new ones on a smaller scale, the project will allow for opportunities to further advance the fields of stream and wetland restoration, riparian buffer enhancement, and BMP implementation.
- Rural/Urban Nexus – Data suggests that the general population is migrating from a rural to a more urban lifestyle. As this shift takes place, rural lands with pre-improved water resources via this project will be better equipped/prepared to support a healthier urban ecosystem.

The general sequence of implementation for each site identified as part of the Kentucky and Tennessee project is as follows. Note that site-specific schedules will be developed as individual projects are identified.

- Fall 2014 - Stakeholder Planning and Coordination
- Fall / Spring 2015 - Pre-permitting Coordination and Assessment
- Spring / Summer 2015 - Design and Permitting
- Summer 2015 – Pre-Construction Training Workshops
- Fall 2015 – Construction and Planting
- Spring 2016 - Spring 2019 – Monitoring

The sequence for implementing additional project areas may be adjusted and/or performed simultaneously, in order to perform project activities during optimal seasonal periods.

Assisting Producers in Meeting Natural Resource Regulatory Requirements: This project will help educate land owners and producers regarding regulatory compliance. Project activities will also promote the restoration and stabilization of the river banks, re-establishment of the riparian buffer, and other water quality improvements which will impact both the site and the downstream receiving waters. Such steps are critical in reducing pollutant loading from agriculture to regional watersheds, thus maintaining regulatory compliance and reducing the regulatory scrutiny on the agricultural community.

Requested Adjustments in Terms: None.

Alternative Funding Arrangements: None.