

North Carolina Nonpoint Source Program

2015 Annual Progress Report



North Carolina Department of Environmental Quality

Division of Water Resources

October 2015 – September 2015

TABLE OF CONTENTS

I. HIGHLIGHTS	1
II. INTRODUCTION	2
A. North Carolina's NPS Program	2
B. Section 319(h) Grant Program	3
C. NC's Disbursement of 319(h) Funds	4
D. NC's Load Reductions - FY2015	6
E. NC's Modeling and Assessment Update	7
III. NORTH CAROLINA 319(h) GRANT PROGRAM SUCCESSES	12
A. Success Story - Crowders Creek	12
B. Implementation of Watershed Plans: Richland Creek Watershed	16
IV. UTILIZATION OF FY2015 GRANT & PROJECT SELECTION	19
A. NPS Programs in DENR	19
B. Competitive Selection Process	19
C. FY2015 Competitive Projects	21
V. NPS PARTNER AGENCY PROGRAM SUMMARIES	26
A. Division of Public Health: NPS Pollution Control Program	26
B. NC Forest Service: Forestry NPS Program	37
C. Division of Energy, Mineral, and Land Resources: Land Quality Section	61
D. Division of Soil and Water Conservation	71
E. Division of Water Resources	
1. Basin Planning	80
2. Groundwater Programs	83
3. Clean Lakes Program	94
4. Nutrient Reduction Strategy Implementation	98
VI. NPS CONTACTS	119
VII. APPENDICES	
A. FY2015 Grant Exemption Request – Documentation	
B. Exemption Project Final Reports	

I. Highlights for 2015

The U.S. Environmental Protection Agency (EPA) approved North Carolina's Nonpoint Source (NPS) Management Program Updates in 1996 and 2004. The third update was approved in July 2015. Under this program, the Division of Water Resources (DWR), within the Department of Environment and Natural Resources (DENR), is the lead agency responsible for ensuring that the waters of North Carolina are clean enough for aquatic life, recreational opportunities and raw drinking water supplies. Numerous other agencies also actively monitor and control nonpoint source pollution resulting from activities such as onsite systems, forestry, agriculture, and construction activities.

Reported here are activities and accomplishments for the period of October 1, 2014 through September 30, 2015 for ongoing programs and selected projects supported by 319(h) grant funds. By providing these updates, this report can be used for accountability for funds received, and to share program successes related to the challenges of controlling NPS pollution. Solving NPS pollution problems requires collaboration and networking that crosses agencies' agendas and political boundaries.

This report highlights several NPS pollution reduction projects and programs:

- DWR is pleased to report the water quality improvements achieved from another 319 grant project. ***Richland Creek*** (page 11) is located in western North Carolina in the French Broad River Basin. More than 15 miles of Richland Creek were added to North Carolina's 303(d) list of impaired waters in 2002 because of poor biological integrity (due to excess sediment) and fecal coliform bacteria. Nonpoint source pollution, primarily from livestock and septic straight pipes, led to increased levels of fecal coliform bacteria and sedimentation in Richland Creek and several of its tributaries. The installation of numerous best management practices to address sediment loading, including restricting access to the stream by livestock, has improved water quality so that a 0.7-mile segment was removed from the 303(d) list in 2015. Previously, a 1.6-mile segment was removed from the 303(d) list in 2010.
- DWR is also pleased to report the substantial implementation of the ***McDowell Creek Watershed Restoration Plan*** (page 15). The McDowell Creek watershed is located in the western Piedmont of the state and drains to Mountain Island Lake, which serves as the primary water supply for the City of Charlotte and Mecklenburg County. Urban growth and population explosion lead Charlotte to prioritize McDowell Creek not only for restoration, but for protection as well, to ensure safe drinking water for years to come. Over \$1.1 million in 319 grant and matching funds have been spent toward the implementation of the McDowell Creek Watershed Restoration Plan, resulting in numerous BMPs installed throughout the watershed and thousands of feet of stream restoration and stabilization completed.
- North Carolina currently has four ***comprehensive nutrient reduction strategies*** (page 102) that together cover approximately 28% of the state. Each strategy is unique in that it has distinct nutrient reduction goals aimed at achieving nutrient related water quality standards in the targeted waterbody in addition to a discrete set of rules designed to achieve those goals. Implementing these nutrient strategies is a resource-intensive effort, engaging 13 DENR and other state agency staff supported by the 319 grant.

II. Introduction

A. North Carolina's NPS Program

Nonpoint Source (NPS) pollution is described as pollution contained in stormwater and snowmelt runoff from agricultural, urban, mined, and other lands as well as atmospheric pollution deposited directly to surface waters, and pollutants entering via groundwater pathways. NPS pollution comes from diffuse sources in contrast to “point” source pollution, which is discharged through a pipe or outlet. Surface water as well as leachate to groundwater can be impacted by NPS pollution.

North Carolina has had a Nonpoint Source Management Program since 1989; the year after the original NPS Management Program was submitted to EPA for approval. The North Carolina NPS Program consists of a broad framework, or umbrella, of federal, state, and local resource and land management agencies. North Carolina's NPS program has established, and revises as needed, an explicit set of goals, objectives, and actions to restore and protect surface and ground water from nonpoint sources of pollution. North Carolina updated the state's NPS Management Program in 1996 and 2004, and the third update was approved by EPA in July 2014.

The Program Plan establishes the goals and direction for the group of diverse agencies that focus on NPS issues statewide and for individual basins under the basin planning process. Through the basin process, the state develops detailed action plans that are to be implemented, updated, and revised on a ten-year cycle. A mix of voluntary and regulatory approaches, both technology and water quality-based, is employed and frequently evaluated for potential improvement. Prioritization of activities and inclusion of all stakeholders facilitates a program that is both efficient and effective.

Goals of the NPS Program

1. Protect waters currently meeting uses

- Prioritize non-impaired high quality waters, outstanding resource waters, and threatened waters of the state for enhancement and protection.
- Work with voluntary and regulatory NPS programs and other partners to implement and strengthen NPS programs across the state in order to protect unimpaired waters from NPS pollution and encourage the control of NPS pollution in all waters of the state.

2. Restore NPS-impaired waters

- Prioritize waters based on an assessment of restoration potential.
- Scientifically assess causes, stressors, and/or sources in North Carolina's impaired waters.
- Develop TMDLs or restoration strategies in strategically prioritized impaired watersheds.
- Support implementation of restoration strategies for prioritized impaired watersheds.

B. Section 319(h) Grant Program

The US EPA Clean Water Act Section 319(h) funds are provided to designated state and tribal agencies to implement their approved nonpoint source management programs. State and tribal NPS programs include a variety of components, including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and regulatory programs. Each year, EPA awards Section 319(h) funds to states in accordance with a state-by-state allocation formula that EPA has developed in consultation with the states.

The US EPA currently allocates approximately \$3.5 million each year for the Section 319 NPS program in North Carolina, which is administered by the Division of Water Resources. State and local governments, interstate and intrastate agencies, public and private nonprofit organizations, and institutions are eligible to apply for competitive Section 319 grants.

Approximately 35 percent of these funds are used to support a competitive grant program for funding watershed restoration projects. Figures 1 and 2 below present the percentage of projects and federal grant funds directed toward 319 projects from 2004-2015, by NPS category.

Figure 1 – Projects funded by 319 by NPS Category

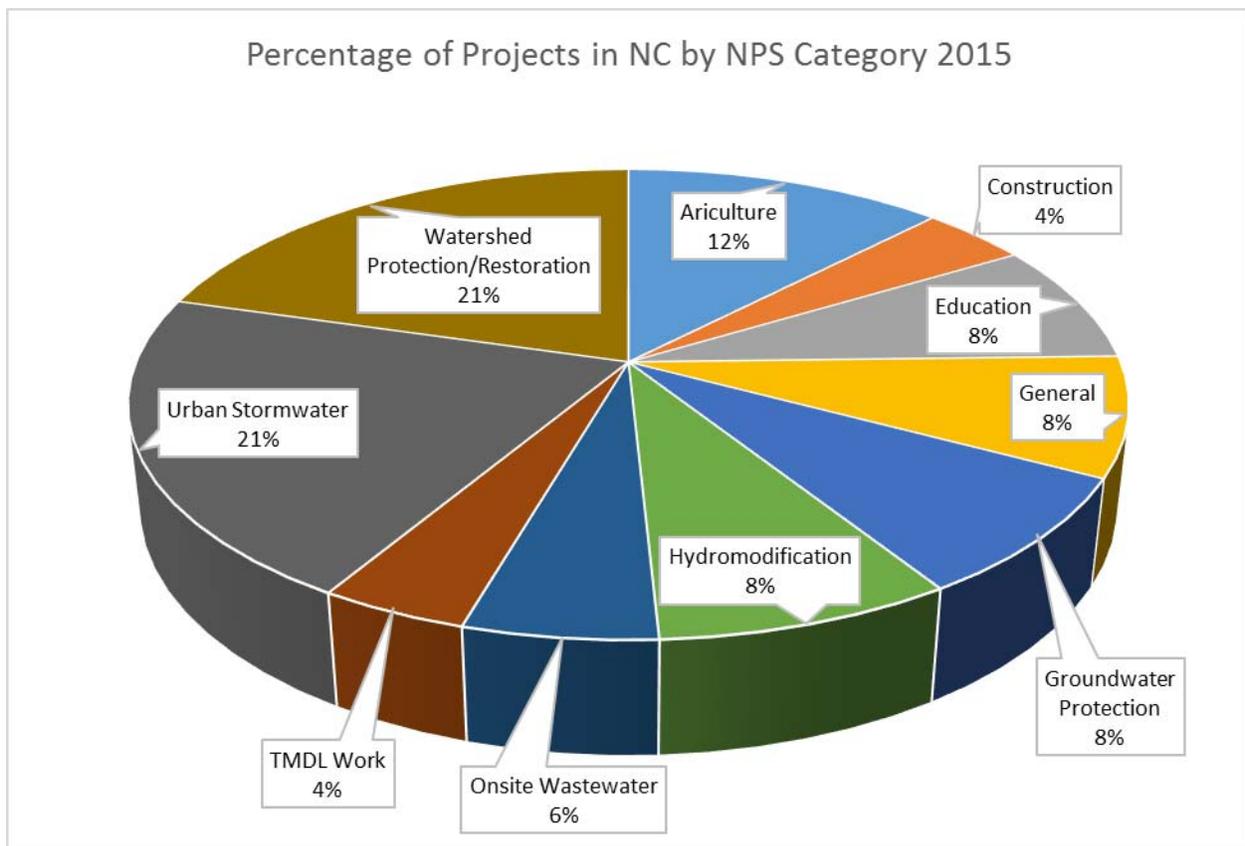
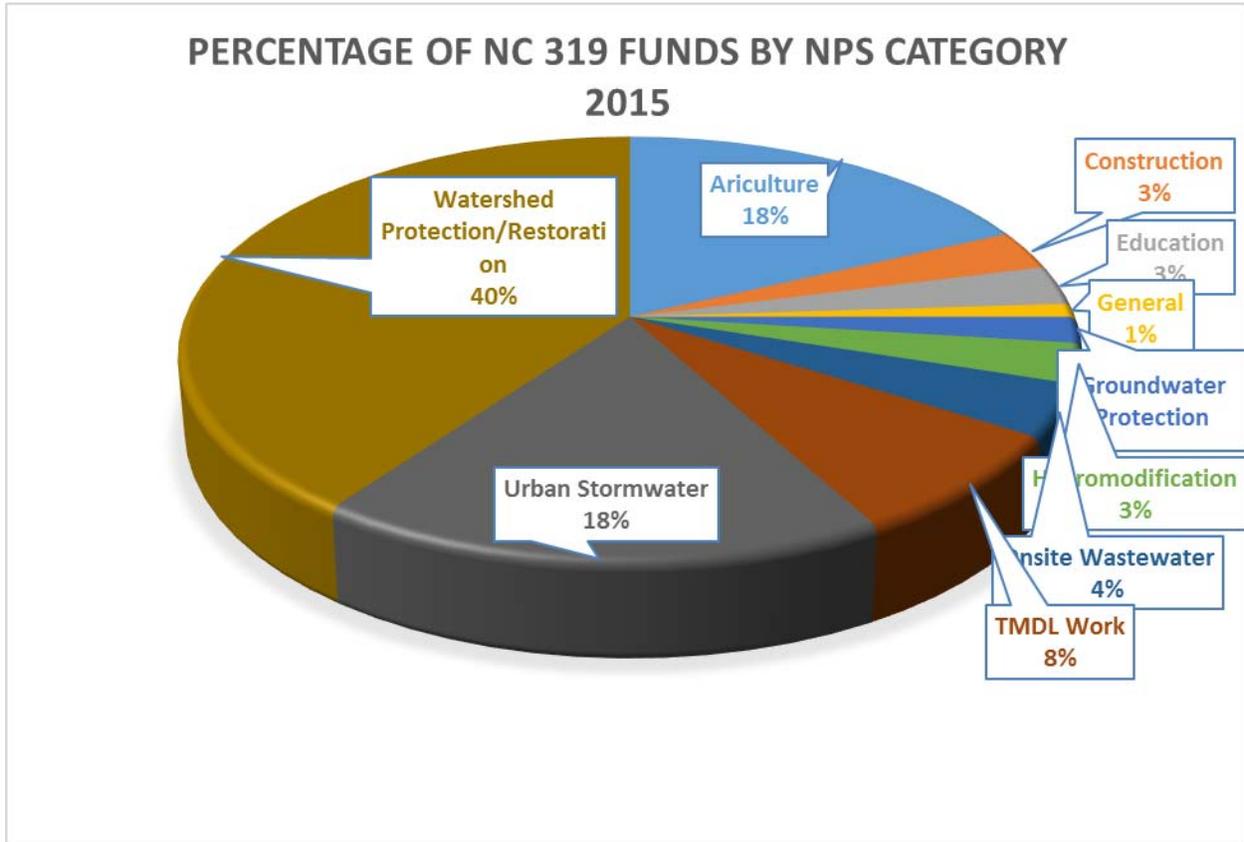


Figure 2 – 319 Grant Funds Spent by NPS Category



C. North Carolina's Disbursement of 319(h) Funds

The disbursement of 319 grant funds has steadily improved over the history of the program but particularly in the last few years. In the early years of the program, requests for grant time extensions were routine, and grant periods ran up to eight years. As late as October 2004, staff requested two time extensions for the FY99 grant and one extension for the FY00 grant, resulting in grant periods of up to seven years. However, since then staff has not requested an extension, and the grant periods have decreased to five-years, where they have been since the FY2004 grant.

A growing congressional desire over the last several years for measurable results and fiscal accountability in grants, and departmental attention to grant balances and spending have resulted in enhanced grant management practices. North Carolina places a great emphasis on contracting projects as soon as possible once funding is received from EPA. We have developed a system for tracking contract activities and deliverables that allows us to routinely provide advance and delinquent notice to contractors on project milestones, and if necessary unencumber funds from contracts if significant progress is not made or milestones not achieved.

The timing of the cycle for selecting watershed projects is meant to closely coincide with DENR's receipt of the annual grant award from EPA. The FY2015 work plan was submitted to EPA in September 2014 without the competitive watershed projects identified. The projects were tentatively selected in late July 2015, in advance of the FY2015 grant award which was received in early September 2015. This process has reduced the time lag by over a year that had been experienced by applicants when projects were selected prior to submittal of the work plan to EPA. This process has reduced delays in disbursing funds by improving contractors' ability to reliably plan and execute projects.

Current grant balances (effective October 2015)

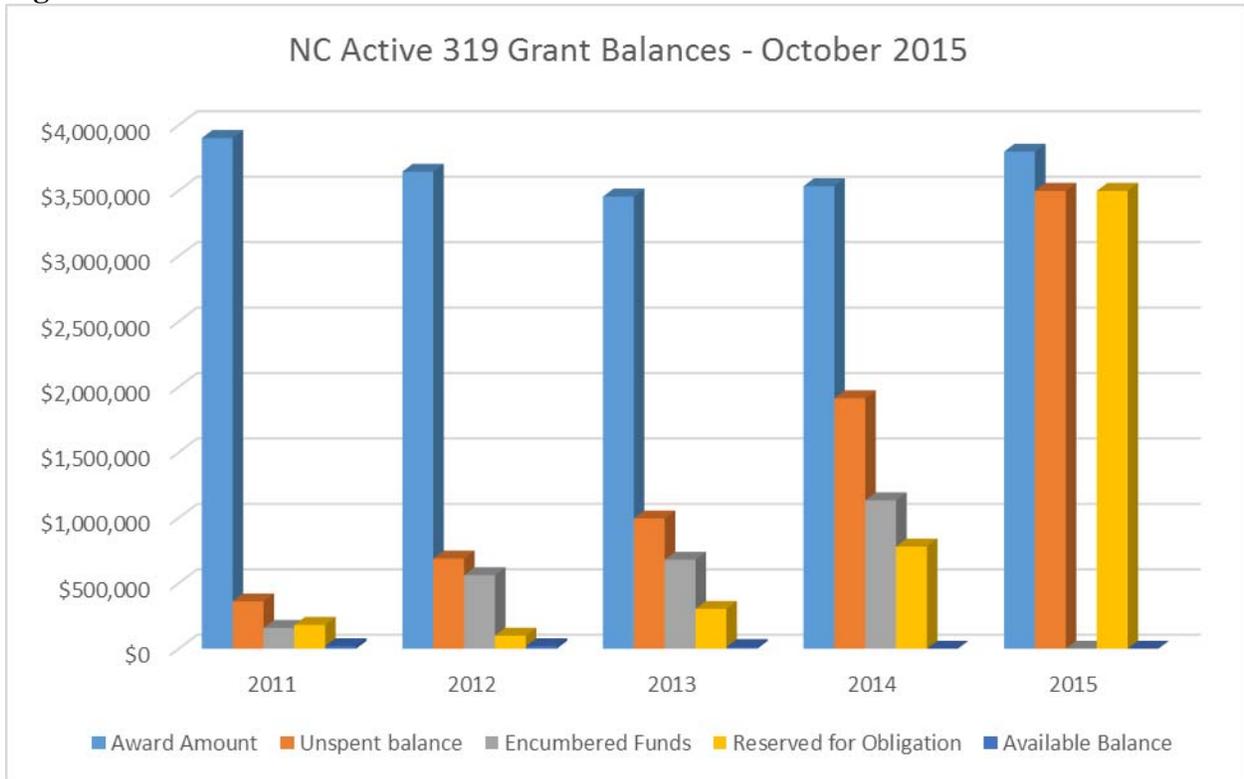
Balances for active grants FY2010-FY2015 are listed in Table 1 and represented graphically in Figure 3 below.

Table 1 – Current 319 Grant Balances

Grant Year	Award Amount	Unspent Balance	Encumbered Funds	Reserved for Obligations	Available Balance	NPS Staff Supported	Total # Projects
FY11	\$3,902,000	\$361,369	\$159,014	\$182,530	\$19,825	25	8
FY12	\$3,645,000	\$688,644	\$561,738	\$100,000	\$19,428	28	8
FY13	\$3,455,000	\$994,902	\$680,265	\$304,637	\$12,690	28.5	8
FY14	\$3,534,000	\$1,914,258	\$1,133,632	\$780,626	\$0	28.5	8
FY15	\$3,497,900	\$3,497,900	\$0	\$3,497,900	\$0	26.5	9
Total	\$18,033,900	\$7,457,073	\$2,534,649	\$4,865,693	\$51,943		

- The “Encumbered Funds” column represents funds that are encumbered to contracts for both current and future state fiscal years.
- The “Reserved for Obligations” column represents funds that are not contractually encumbered, but which are being reserved by the 319 Program in order to meet obligations that include DWR and other staff salaries or funds that have not yet been encumbered to pending contracts.
- The “Available Balance” column represents funds that are not obligated to current or anticipated projects, and accounts for 0.01% of the total awarded amount for all five active grants. These are funds that were previously obligated but were not spent as planned and returned. DWR is actively engaged in identifying eligible NPS projects for these available funds.

Figure 3 – Current 319 Grant Balances



D. North Carolina’s Load Reductions – FY2015

Between October 1, 2014 and September 30, 2015, projects funded by 319(h) grants were successful at preventing significant loads of nutrients and sediment from reaching the state’s waters. Table 2 below displays the projected load reductions for nitrogen, phosphorus, and sediment for this period of time.

Table 2 – Load Reductions for FY2015

Pollutant	Reduction	Unit
Nitrogen	167,792	lb/yr
Phosphorous	109,673	lb/yr
Sediment	175,155	ton/yr

E. Modeling and Assessment Update

The Modeling and Assessment Branch (MAB) of the NC Division of Water Resources (DWR) develops the 303(d) list of impaired waters and Total Maximum Daily Loads (TMDLs) for the state of North Carolina pursuant to the Clean Water Act. They also develop and review TMDL alternatives and models, conduct data analyses, and track implementation projects and incremental water quality improvement. These activities require coordination with the monitoring, permitting, and planning sections of DWR. Approximately 300 North Carolina TMDLs and alternatives have been established. Many of these have been successfully implemented to achieve water quality standards.

1. In FY2015, Section 319-funded MAB staff participated in the projects highlighted below:

a. Prioritization

Staff worked with other Planning Section staff to refine a restoration prioritization process for Category 5 assessments. Staff have begun evaluation of top-ranked waters to determine which restoration tool (e.g., TMDL, alternative, nine element plan, etc.) is most likely to result in attainment of water quality standards, or incremental water quality improvement. The tool works by assigning a rank to each impaired waterbody based on its drainage area, classification (use), and assessment score. The output identifies high priority watersheds that exhibit poor water quality but also have small drainage areas to reflect greater restoration potential. Waterbodies named in NC's Nutrient Criteria Development Plan are also assigned a high priority. The overall goal of this project is to direct DWR resources in a team effort to improve water quality in the prioritized waters.

b. Jordan Lake Watershed

Staff continued to provide technical support for the NPS Branch and the Nutrient Scientific Advisory Board (NSAB) in the analysis and interpretation of results of the Jordan Lake watershed model. Also conducted post modeling analysis including estimation of septic population by jurisdiction in the watershed and reviewing post processing approaches proposed by NCDOT. The goal of the project was to develop a dynamic flow and water quality watershed model to estimate baseline nutrient loads from all sources and to establish load allocations under the state's Jordan Lake Rules.

c. High Lake Watershed

Staff reviewed and revised High Rock Lake Nutrient Response Model report and provided response to the High Rock Lake Technical Advisory Committee comments.

d. Little Alamance Creek

Staff submitted the Little Alamance Creek 4B plan to EPA. This plan was developed in collaboration with NCDOT and the Cities of Burlington and Graham on a Category 4b alternative to a TMDL to restore the biological integrity of Little Alamance Creek. A multitude of potential nonpoint source stressors have been identified in the watershed.

e. Cape Fear River

Staff developed a monitoring plan for the upper and middle Cape Fear River (CFR) watersheds to address spatial gaps in existing ambient and coalition monitoring programs. This data will be used to support the development of a watershed model for the upper Cape Fear watershed (Deep River and Rocky River watersheds) and a water quality and hydrodynamic model for the middle Cape Fear River watershed (from confluence of the Haw River and Deep River down to Lock and Dam #1). The two models are Soil and Water Assessment Tool (SWAT) and CE-QUAL-W2, respectively. The data to be collected will allow the DWR to develop the models to characterize water quality dynamics more accurately in the CFR basin.

f. Assessments to Measure Water Quality Improvement

- Neuse and Tar Basin Nutrient Loading Analysis

Staff conducted nutrient loading analyses to assess progress in achieving the nutrient load reduction to the Neuse and Tar-Pamlico Estuary resulting from the TMDL. Loading analyses of nutrient concentrations and loads were performed to evaluate changes in nutrient concentrations and loads based on 1991-2014 data from ambient monitoring stations in the Neuse River and Tar River. Nutrient Load analysis was also conducted for major tributaries of the Falls Lake to evaluate progress in achieving the nutrient reduction goal of the Falls Lake Nutrient Management Strategy.

- Statewide Water Quality Assessment

Staff conducted a statewide assessment per Section 305(b) of the Clean Water Act. Results allow identification of waters that have attained water quality standards, as well as those experiencing incremental improvement.

g. Natural Conditions Assessment

- Applied instream natural conditions determination for DO and pH. This included:
 - Examinations of low flow conditions, seasonal fluctuations, organic carbon, acid deposition (for pH), forest types (for pH), soil types (for pH), ground water quality, and field conditions
 - Comparison of total nitrogen (TN) and total phosphorus (TP) concentrations with USGS background conditions

2. Section 319-funded MAB staff provided technical assistance and guidance to various groups in support of projects to restore impaired waters and also completed the following tasks:

- Created and are testing online mapping tools to develop and track implementation of restoration plans
- Participated in launch of Watershed Stewardship Network website. The tool to help bring restoration groups together and provide technical support at the local level for implementation of restoration plans
- Reviewed and ranked section 319 project proposals
- Provided NWQI priority waters for 319 staff

- Participated in 205j grant reviews and interview process
- Collaborated with NCDOT on restoration projects and to develop protocol for NCDOT loading allocation tools
- Collaborated with Basin Planners in developing nutrient loading trends
- Continued to work on the 2016 303(d) list.
- Participated in training on the CE-QUAL-W2 model. A coupled watershed-impoundment modeling approach consisting of SWAT and CE-QUAL-W2 will be used to simulate the impact of nonpoint source pollution from upland watershed areas on water quality of reservoirs and locks-and-dams along the Cape Fear River.
- Assisted Classification and Standard Branch in running the LCFR EFDC model to analyze different scenarios of dissolved oxygen in the LCFR with respect to proposed reclassification and water quality management plan.
- Reviewed High Rock Lake nutrient response modeling report and provided response to Technical Advisory Committee (TAC) comments. The nutrient response and watershed models will be used to determine nutrient loading reduction targets and relative contributions of nutrient loading by sources (urban areas, agriculture, forest, etc.).
- In collaboration with the Basin Planning Branch, developed a special study plan for the Rocky River in the CFRB. Information from the study will be utilized to develop Soil and Water Assessment Tool (SWAT) to characterize water quality dynamics in the river.
- Data analysis and presentation to support Scientific Advisory Council meetings of Nutrient Criteria Development Plan
- Participated in the Albemarle-Pamlico National Estuary Partnership Nutrient Workgroup
- Staff attended EPA webinars on Water Quality Modeling Basics and Beyond and Watershed Academy Web Training
- Provided maps for monitoring stations, land cover /land use analysis, GIS analysis, cumulative Ag land drainage GIS layer

3. FY2015 Draft TMDLs

In FY2015, MAB staff developed an addendum TMDL to Tennessee's low pH TMDL for the Great Smoky Mountains National Park, TN (http://portal.ncdenr.org/c/document_library/get_file?uuid=c9f22457-c981-4f76-b9e9-8e0446db3db4&groupId=38364). This TMDL addresses impacts from all sources.

4. Support for 319 Projects

The focus of North Carolina's restoration programs is implementation to attain water quality standards. In selecting waters for TMDL development, the Modeling and Assessment Branch considers, among other factors, whether a TMDL will complement other work underway to improve water quality in the watershed, public interest, and likelihood that the TMDL will be implemented. Table 3 provides a selection of recent 319-funded projects

implementing existing TMDLs. MAB staff actively participated in selection of these projects, and consults with 319 staff and local partners to ensure their success, using a watershed-based approach to restore these NPS-impaired waters.

Table 3 – Examples of recent 319-funded projects implementing existing TMDLs

Funding Year	Project Title	Description
FY11	Dan River BMPs	Install both agriculture and urban BMPs to implement the TMDL.
	Jordan Lake BMPs	Install both agriculture and urban BMPs in this watershed in a selective, prioritized manner to implement the TMDL.
	Wastewater Derived Nutrients	MAB Staff are active partners on this project. Project will develop information that can be applied to models and future TMDLs to determine the contribution of nutrients from septic systems to impaired waters. Focus is on impaired High Rock Lake.
	Organic Nitrogen in the Neuse	While nitrate loading to the Neuse River Estuary has decreased, organic nitrogen loading has increased. As a result, the TMDL loading reduction target of 30 percent reduction in total nitrogen to the Neuse River Estuary has not been met. The goal of this proposed project is to create a tool which quantifies the loads of potentially “restorable” non-point sources of organic nitrogen.
FY12	Implementing LID	MAB Staff are active partners on this project. This project will demonstrate low impact development projects that focus on reducing runoff volume and transport of pollutants to waters with approved TMDLs and other impaired shellfish harvesting areas.
FY13	Stormwater BMPs in the Town of Pittsboro and Robeson Creek Watershed	This project will implement stormwater BMPs recommended by both the 2003 TMDL implementation plan and the 2010 Robeson Creek Watershed Restoration Plan to help meet goals of reducing peak stormwater flows, Total Phosphorus (TP), Total Nitrogen (TN), total suspended solids (TSS), and improve and maintain aquatic habitat.
FY12	Implementation of the Regenerative Stormwater Conveyance Technology to Stabilize an Erosional Gully in Durham, NC	The proposed project is a regenerative stormwater conveyance (RSC) stormwater BMP device, to be installed on an unnamed tributary to Third Creek. Results from this study may allow designers another option when attempting to meet stringent load reduction requirements, such as the Jordan and Falls Lake Rules.
FY13	Cleaning Up the Water Around Oak Island, NC	This project will reduce polluted stormwater runoff entering into the impaired coastal SA waters of the Lockwood Folly River watershed by constructing stormwater infiltration practices (SIPs). This project implements elements of the watershed restoration plan that was completed to carry out the TMDL developed for these waters in 2010.
FY14	Implementing the	Through this project, we will expand on our

Funding Year	Project Title	Description
	Watershed Restoration Plan for the Lower White Oak River.	<p>collaborative efforts to reduce the volume and flow of stormwater being discharged into the river. Cumulatively, runoff discharges in the watershed are impairing more than 2,200 acres, or almost two-thirds of the designated shellfishing waters of the lower White Oak River.</p> <p>The federation and Cedar Point will partner with East Carolina University and a local project team of committed experts to prioritize, site, design, construct and monitor a series of 12 stormwater reduction measures within the watershed. These measures will remove an estimated 55,000 gallons of runoff from the 3.58-inch storm (1-yr, 24-hr) event.</p>

III. North Carolina 319(h) Grant Program Successes

A. Project Success Story – Crowders Creek

BACKGROUND

Waterbody Improved

Agricultural practices, failing septic systems, and urban development led to high fecal coliform and degraded biological conditions in Crowders Creek. As a result multiple segments of the Creek were added to the 303(d) impaired waters list for fecal coliform and biological impairment in 2002 and 2008. Watershed partners implemented numerous best management practices (BMPs), including wastewater infrastructure improvements and watershed management plan implementation from 2005 to 2013. These efforts have led to the improvement in water quality of four (4) stream segments and the removal of those segments from the 2014 303(d) list.

Problem

Crowders Creek runs through the City of Kings Mountain and Gastonia, located 23 miles due west of Charlotte, North Carolina. The 26,524 acre Crowders Creek watershed flows 12.5 miles before crossing the South Carolina border (HUC 030501011501), in the Catawba River Basin (Figure 1). The watershed comprises a mixture of forested, agricultural, residential, commercial and industrial land cover. The majority of residential, commercial and industrial development are located within the city limits of Kings Mountain and Gastonia. When combined those cities have a population of approximately 83,000 residents.

According to Total Maximum Daily Load (TMDL) Reports generated for Crowders Creek (1996, 2004), cause of the nutrient enrichment was point source dischargers in the Lake Wylie area, the 2004 fecal TMDL indicated that low dissolved oxygen and leaking sanitary sewer as well as failing septic tanks were to blame.

Monitoring conducted by the North Carolina Division of Water Resources (DWR) in 1989, 1992, and 2002 found “fair” biological integrity and fish community in segments AU 11-135c and AU 11-135d, which led to the waterbody listed on the 303(d) list in 2002.

The segments of AU 11-135e, AU 11-135f were monitored by DWR and determined to have high fecal coliform counts, thus adding the segments to the 2008 303 (d) list of impaired waters. The state's fecal coliform water quality standard requires that fecal coliforms (1) not exceed a geometric mean of 200 colonies (col) per 100 milliliters (mL), based on at least five consecutive samples examined during any 30-day period, and (2) not exceed 400 col/100 mL in more than 20 percent of the samples examined during that period

The 2010 Catawba River Basin Plan prepared by DWR described Crowders Creek need for restoration. Included in those recommendations were the following:

- Decommission the failing sand-filtration sewage treatment plan and provide sanitary sewer extension to three communities of concern. The action was projected to achieve at least 40% reduction in the observed fecal coliform loads.
- Perform a survey of stormwater outfalls to identify dry weather flows due to illicit discharges, groundwater seepage and exfiltration.
- Conduct a study to assess the magnitude and potential of fecal coliform input from stream sediments and in-line sewer deposits as a secondary cause of fecal loads following runoff events.
- Develop a spatial decision support system that incorporates relevant field and GIS data to support comprehensive watershed and infrastructure improvement program throughout the entire Crowders Creek watershed.

PROJECT HIGHLIGHTS

Using the Crowders Creek Watershed Plan and existing fecal coliform TMDL the City of Gastonia and Gaston County in partnership with Natural Resources Department, Soil and Water Conservation District (SWCD), planned a complete overhaul of the existing sewer system. Gastonia and Gaston County installed wastewater collection system connecting homes to sanitary sewer, eliminating straight pipes and decommissioning and demolishing failing sand filter systems. Over 6470 linear feet of sewer line was included during phase I of the process connecting 93 homes to sanitary sewer systems and eliminating 16 straight pipes to the creek. Additional work in phase II added 8630 linear feet of sewer line and decommissioned and demolished an outdated failing sand filter system fed by a mobile home community.

The SWCD and Gaston Natural Resources department set out to implement BMPs on county owned properties to address stormwater runoff. Over 100 acres of land are now treated by bioretention areas which allow infiltration of rainwater and prevent sheet flow runoff. A stream protection system was installed to prevent 30 beef cattle from entering the stream, 102 acres of agricultural land was put under long term no till, 71 acres of land were planted for critical area buffers and an additional 20 acres of land were converted to grassland.

Gaston County worked to incorporate a stormwater ordinance to protect and restore the watershed. Sand filters treating 6 acres were installed, 2 acres of land were installed with bioretention systems, and an underground inline stormwater treatment system was installed. The above work was primarily implemented from 2005 to 2013.

RESULTS

After years of poor or fair benthic data, water quality in AUs 11-135c and 11-135d began to improve in 2002 and 2007 (Table 1). Based on this data, AUs 11-135c and 11-135d were rate as Good for aquatic life on the 2014 integrated report.

Table 1. Water Quality Ratings

Waterbody	AU	Date	Rating
Crowders Creek	11-135d	10/09/2013	Good
Crowders Creek	11-135d	7/10/2007	Good-Fair
Crowders Creek	11-135d	5/20/2002	Fair
Crowders Creek	11-135d	08/20/1997	Fair
Crowders Creek	11-135c	01/7/2014	Good
Crowders Creek	11-135c	05/21/2002	Good-Fair
Crowders Creek	11-135c	09/21/1989	Fair

Fecal Coliform numbers also started to decline after the installation of the new sewer systems. Fecal Coliform impairments are assessed if the stream has a count of 400colonies/100ml sample in a 5 day sampling window during a 30 day period. Data collected from 2010 indicated that AU 11-135e and AU 11-135f now meet the fecal coliform levels and are deemed safe for recreation. Based on this data these AUs were delisted for fecal coliform impairment in 2014.

PARTNERS AND FUNDING

The water quality improvement can be attributed to many stake holders active in the restoration effort throughout the watershed, including: US Environmental Protection Agency, NC Division of Water Resources, City of Gastonia, Gaston County, UNC- Charlotte and Gaston County Natural Resources Department/SWCD. A combined total of \$2,415,338 has been implemented in the watershed since 2003, with only a small portion of US EPA 319 dollars directed towards plan development and sewer repairs totaling \$181,133.

MAPS AND PHOTOS

Figure 1 - Map of Crowders Creek Watershed

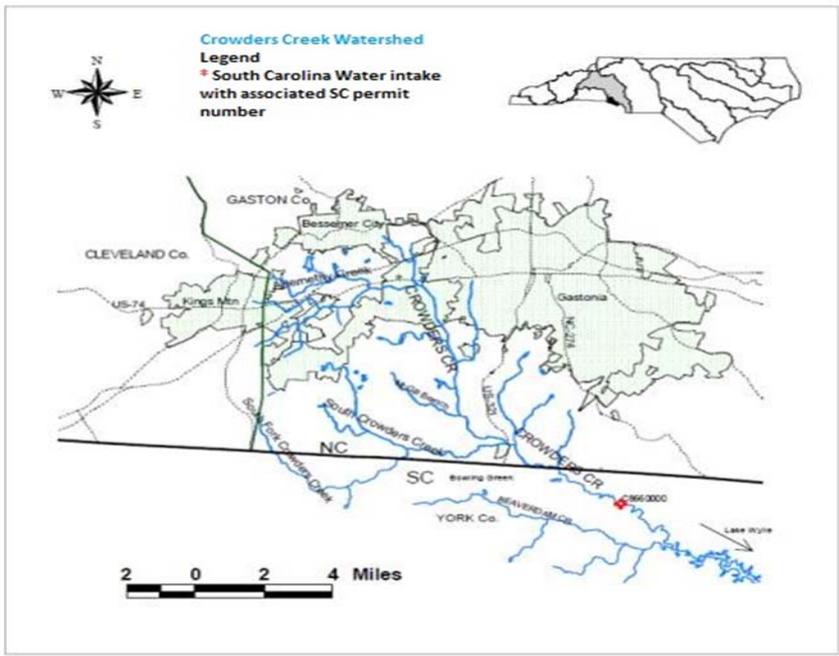


Figure 2 – Installation of Sanitary Sewer Line



B. Implementation of Watershed Plan

One of EPA's strategic measures for tracking 319 grant program effectiveness and success is the implementation of watershed restoration plans. Specifically, EPA asks states to report on the number of watershed plans that have been substantially implemented, where either: 1) Those actions called for in the plan specifically geared towards remediating the impairment(s) have been implemented, where the plan meets the nine criteria outlined in the NPS grants guidance; or 2) Sufficient management measures and practices called for in the plan have been implemented to achieve the load reduction needed to meet water quality standards, even if the plan comes close to – but falls short of – including all nine criteria articulated in the NPS grants guidance.

North Carolina is pleased to report on the substantial implementation of the Richland Creek Watershed Plan below.

RICHLAND CREEK WATERSHED PLAN IMPLEMENTATION

The 43,700 acre Richland Creek Watershed is located within the Pigeon River Watershed (8-digit HUC 06010106) in Haywood County, North Carolina. The watershed flows through a heavily developed portion of Haywood County and serves as the municipal water supply for the Town of Waynesville. The watershed has significant economic value to the county and the town; Richland Creek flows into Lake Junaluska, a 200 acre reservoir near the mouth of Richland Creek that is a popular recreation center and retreat providing over \$40 million per year to the local economy. Streams throughout the watershed support trout populations, attracting thousands of visitors each year.

In March 2002, the Haywood Waterways Association (HWA) published its Watershed Action Plan for the Pigeon River Watershed. Outlined within the action plan were causes and sources of impairments as well as possible project locations. Using the Watershed Action Plan as a base, Southwestern North Carolina Resource Conservation & Development Council (RC & D), Haywood Soil and Water Conservation District (SWCD), and HWA obtained their first Section 319 grant in 2005. The initial 2005 project focused on Hyatt Creek, a tributary to Richland Creek, which has agricultural and straight-piping wastewater issues. The BMPs implemented as part of the Hyatt Creek Restoration Project resulted in water quality improvement within the watershed. With this momentum, Southwestern NC RC & D, Haywood SWCD and HWA applied for and were awarded two 319 grants in 2009: the Richland-Hyatt-Raccoon Creeks Restoration Project and the Cochran Farms Stream Restoration Project. In 2014

Table 2. BMPs Installed To Date in Watershed

BMPs	Number Installed	Unit of Measure
Check Dam	1300	FT
Critical Area Planting	2	Acres

Diversion	250	FT
Fence	5055	FT
Grazing Systems	1	Unit
Heavy Use Area	4	Units
Livestock Stream Crossing	1	Unit
Riparian Herbaceous Cover	3140	FT
Stream Channel Stabilization	5920	FT
Tank/Trough	4	Units
Waste Facility Cover	2	Units
Water Well	1	Unit

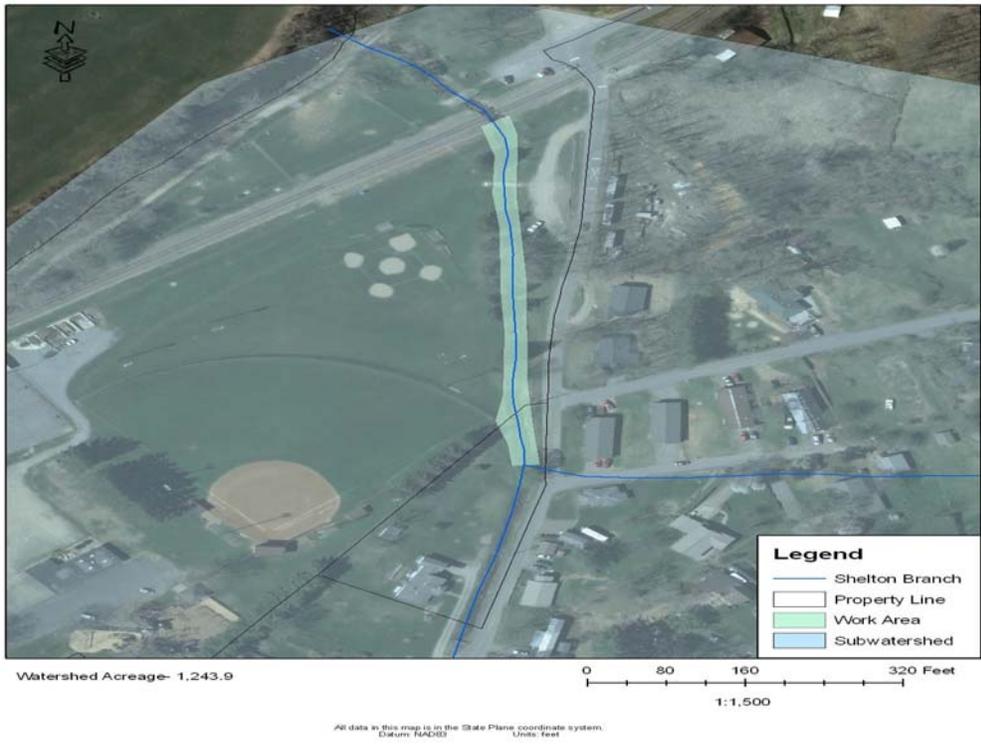
Figure 3. Farmers Branch Project 1



Figure 4. Richland Creek Riparian Plantings Project 2



Figure 5. Shelton Branch Project 3



IV. Utilization of FY2015 Grant & Project Selection

A. NPS Programs in DENR

The 319(h) grant supports state NPS programs and initiatives across five different divisions within the Department of Environment and Natural Resources (DENR), Department of Agriculture, and Department of Health and Human Services. The 26.5 positions within three state agencies that work to address nonpoint source pollution are supported annually by the 319(h) grant. The following programs presented in Table 1 below received FY2015 grant funding, as presented in the approved FY2015 work plan:

Table 3 –NPS Programs Funded in FY2015 319 Grant Work plan

ID#	Recipient	NPS Programs	Fed. FTE	State FTE	319 Funding	Match	Total
NPSP-1	DWR	Nondischarge Permitting and Enforcement	2	1	\$176,365	\$78,880	\$255,245
NPSP-2	DWR	Surface Water Monitoring Programs	1	0	\$67,548	0	\$67,548
NPSP-3	DWR	Basin Planning and Management	3	0	\$232,045	0	\$232,045
NPSP-4	DWR	NPS Program Implementation	1	14.5	\$96,960	\$925,033	\$1,021,993
NPSP-5	DWR	Section 319 Program Administration	2.5	0	\$199,501	0	\$199,501
NPSP-6	DWR	Ground Water Program	2	1.5	\$138,255	\$131,582	\$269,837
NPSP-7	DWR	Estuary Monitoring and Assessment Team	2	0	\$140,147	0	\$140,147
NPSP-8	DWR	NPS Modeling	2	0	\$160,158	0	\$160,158
NPSP-9	NCFS	Forestry NPS Program	3	2	\$311,876	\$207,918	\$519,794
NPSP-10	DSWC	Agricultural NPS Pollution Control	1	1	\$107,080	\$71,387	\$178,467
NPSP-11	DEMLR	Erosion and Sedimentation Control	1	0	\$63,000	\$119,795	\$182,795
NPSP-12	DPH	On-site Wastewater Disposal	1	1	\$62,080	\$42,285	\$104,365
NCWP-1	DWR	Nutrient Framework Implementation	5	0	\$333,540	0	\$333,540
NCWP-2	DWR	Watershed Implementation	1	0	\$78,513	0	\$78,513

B. Competitive Selection Process

The North Carolina Division of Water Resources (DWR) has the responsibility for administering the Section 319 grant in accordance with federal grant requirements, EPA Section 319 NPS Program guidance, and state contract requirements. Within this scope, DWR seeks to spend the funds to support state nonpoint source priorities at the DENR and division levels. Projects are selected to receive 319 funding through a Request for Proposals (RFP) solicitation and competitive ranking and selection process. NPS 319 funding in past years has supported a wide variety of activities including:

- Technical and financial assistance
- NPS education, training, technology transfer, demonstration projects
- Best Management Practices (BMP) implementation
- Monitoring to assess the success of specific nonpoint source implementation projects

- Water quality restoration projects intended to remove impaired waters from the state's 303(d) list.
- Development and implementation of watershed restoration plans.
- Development and implementation of Total Maximum Daily Loads (TMDLs).

Project proposals are reviewed, scored, and ranked by DWR staff and the NPS Workgroup, which is comprised of more than 12 state and federal agencies. The top proposals are invited for interviews with DWR staff and NPS Workgroup members. DWR staff then meet to select projects for funding.

For the FY2015 application cycle, the RFP was distributed in late February 2015. Proposals were due by May 29, 2015. There were 11 eligible proposals submitted for FY2015 Section 319(h) watershed restoration grant funding, requesting over \$2.1 million. In addition to determining whether the proposals met EPA's funding requirements, proposals were evaluated and scored based on the following four criteria, with a maximum possible total score of 50 points:

1. Merit (25 points)
 - a. Measurable results proposed (10 points)
 - b. Quality/integrity of application (10 points)
 - c. Preparedness and/or Momentum of project (5 points)
2. Capabilities of Principal Investigator to carry out proposed activities (10 points)
3. Relevance and value to NPS Program Plan - proposal addresses one or more action plan items from NPS Program Management Plan, proposal addresses priorities identified in RFP (5 points)
4. Budget / Timeline (10 points)

It was considered to be a high priority for a project to include monitoring or other mechanisms to demonstrate project effectiveness, in response to US EPA's emphasis that projects funded by the 319 grant show measurable water quality results. Additional weight was given to projects that reference a strong sense of collaboration and partnership for measurable NPS pollution reduction, and if the applicant showed how their project would enhance existing water quality or quantity projects.

The following section presents the projects that were selected to receive watershed restoration funding from the FY2015 319 grant.

C. FY2015 Competitive Projects

The following projects presented in Table 2 below were selected for competitive watershed restoration project funding and were approved in North Carolina's FY2015 work plan:

Table 4 – Competitive Watershed Restoration Projects Included in FY2015 319 work plan

ID#	Recipient	Project Title	319 Funding	Match	Total
Competitive Watershed Restoration Projects					
CWP-1	WRRRI	Partnering with a school community, Town of Cary, and homeowners to improve Black Creek.	\$143,870	\$98,334	\$242,204
CWP-2	Albemarle RC&D	Little River Watershed In-Stream Wetlands Project	\$90,475	\$191,678	\$282,153
CWP-3	Piedmont Conservation Council	Boling Lane Park-Loves Creek Watershed BMP Project	\$150,000	\$100,000	\$250,000
CWP-4	Mills River Partnership	Mills River Watershed Management Plan Implementation Project – Phase 1	\$230,000	\$467,000	\$697,000
CWP-5	Blue Ridge Conservancy	Beaverdam Creek Watershed Restoration Phase II	\$192,500	\$129,800	\$322,300
CWP-6	Ellerbe Creek Watershed Association	South Ellerbe Creek Green Infrastructure Implementation	\$63,627	\$46,384	\$110,012
CWP-7	Hiwassee River Watershed Coalition, Inc	Valley River at Taylor Creek Restoration & Plan Update	\$58,000	\$119,300	\$177,300
CWP-8	NC Division of Soil and Water Conservation	A Continued Effort for Best Management Practice Implementation in the Dan River.	\$22,208	\$22,208	\$44,416
CWP-9	NC Division of Soil and Water Conservation	BMP Implementation in Impaired and Impacted Watersheds	\$200,000	\$150,000	\$350,000
COMPETITIVE WATERSHED PROJECTS TOTAL			\$1,150,680	\$1,324,704	\$2,475,384

Abstracts for the eight competitive watershed restoration projects are presented below, to provide additional information about the projects selected to receive funding under the FY2015 319(h) grant.

COMPETITIVE WATERSHED RESTORATION PROJECT ABSTRACTS

CWP-1 Partnering with a school community, Town of Cary, and homeowners to improve Black Creek.

The Black Creek Watershed Association seeks to continue its work led by NC State University (the Water Resources Research Institute and formerly by WECCO) to implement the Black Creek Watershed Plan (2009).

Goals of the this innovative proposed project are to:

- Continue building on the momentum in the community to improve Black Creek, engaging additional community members in the efforts

- Install a large, high impact stormwater control measure retrofit at Kingswood Elementary School that functions as an outdoor natural learning environment for current and future students to experience and learn about storm water and watershed management
- Assist a homeowners' association with installing a series of residential rain gardens that reduces runoff in their community
- Identify sites and create preliminary designs for intercepting and infiltrating concentrated stormwater flows along the right of way of the Black Creek Greenway in concert with the Town of Cary's design process for redeveloping the greenway
- Provide a check-up on the aquatic health of Black Creek through benthic macro-invertebrate sampling, and use the sampling events and results as an educational opportunity

The Black Creek watershed, about 3.3 mi² in area, is in the Town of Cary. The creek discharges to Lake Crabtree, in the Crabtree Creek subwatershed of the Neuse River Basin. Highly urbanized, the watershed is nearing build-out with a combination of residential, commercial, and institutional development. The Town's popular Black Creek Greenway runs adjacent to much of Black Creek. The Greenway connects to Umstead State Park, Crabtree County Park, and City of Raleigh greenways, and experiences heavy use.

CWP-2 Little River Watershed In-Stream Wetlands Project

The 319 in-stream wetlands will be constructed along a privately-owned canal that drains approximately 600 acres of agricultural land just above the Impaired section of the Little River (Figure 2). This drainage canal is a major source of sediment and nutrients carried directly to the river by stormwater (Figure 3). The project will demonstrate how in-stream wetlands may be constructed along main drainage canals on private lands to effectively manage stormwater. The project will also demonstrate how the same stormwater system may be used on privately-owned canals throughout the watershed that flow into the Little River (Figure 4). The impact of agriculture on water quality of the Little River watershed is typical to watersheds in eastern NC, and the proposed system of in-stream wetlands on private lands could be replicated throughout the region.

NCSU School of Biological and Agricultural Engineering will monitor and evaluate the wetlands for improvements in water quality. Project outreach and education will include field days for farmers and conservation professionals. Project results will be shared through state, regional and local SWCD, ARCD and NCSU networks and county governments.

CWP-3 Boling Lane Park-Loves Creek Watershed BMP Project

The Loves Creek Watershed is impaired for Habitat Degradation. This project will implement stormwater BMPs recommended by 2005 EEP preliminary report to help meet goals of reducing peak stormwater flows, Total Phosphorus (TP), Total Nitrogen (TN), and improve and maintain aquatic habitat. Focus will be primarily on an unnamed tributary to Loves Creek within Boling Lane park. A series of three bioretention areas will be installed within the park to capture stormwater runoff from road culverts piped directly to the stream channel. Two stormwater wetlands will be installed adjacent to the stream to capture and treat pollutants. The buffer along the stream channel will be created and planted with native vegetation. These BMPs will add to existing BMPs in downtown Siler City and add to reduction efforts in the Loves Creek watershed.

CWP-4 Mills River Watershed Management Plan Implementation Project – Phase 1

This proposal is to build on that work by implementing the “Watershed Improvement Action Plan” (WMP section 8.3 tables 8.2-8.9 and the “Implementation Schedule and Accomplishments Tracking” tables 8.10-8.17).

The three year project budget is \$717,000. The MRP is requesting \$250,000 of this from 319, \$200,000 will come in match thanks to some critical land conservation projects and they expect to get another \$267,000 in primarily cash match from the cities of Hendersonville and Asheville as well as from the BMP cooperators (primarily farmers). The cost of this Phase 1 will primarily be associated with the installation of BMPs on agricultural sites. It will also continue, and build upon, their education and outreach strategy and provide additional needs assessments identified in the WMP (see WMP Table 8.8) to help prioritize future work.

CWP-5 Beaverdam Creek Watershed Restoration Phase II

Beaverdam is the only 303(d) watershed listed in the Watauga River basin. Both the 2005 NCDENR Basin report and the Beaverdam Creek Watershed Restoration Plan developed by WRP note that water quality is not seriously impaired. Therefore, this is an excellent opportunity to engage in proactive BMP implementation to prevent serious damage before it happens and to therefore remove Beaverdam Creek from the impaired list. Goals of the Beaverdam Creek Watershed Restoration Project Phase II are to: 1) work with identified landowners to install site specific BMPs to enhance the cold water stream habitat, and 2) monitor the BMPs to document project success. It is widely understood in the community that agricultural practices negatively affect Beaverdam Creek and the project team has already been in communication with willing landowners who have witnessed the success of the Phase I implementation and are eager to work with us. This Phase II work will focus on: excluding livestock, providing alternative livestock water sources, managing manure, installing riparian buffers, and/or stabilizing eroding streambanks. We will integrate community/landowner education and participation with creek rehabilitation efforts. WRP will offer information about BMPs (e.g. why fence cattle from a creek; why buffer streams) to the participating landowners as well as others in the community who may express interest in implementing projects on their property.

CWP-6 South Ellerbe Creek Green Infrastructure Implementation

The 319 grant will allow the Ellerbe Green Infrastructure Partners to accomplish the following in South Ellerbe Creek: implement 20 residential rain gardens, 10 cisterns, and 50 downspout disconnections; implement a larger, more public project that includes multiple rain gardens, swales, and impervious cover removal at a public elementary school; conduct 3 hands-on workshops to teach attendees to install their own practice; and introduce thousands of Durham residents to the concept of Green Infrastructure through neighborhood listserves, an improved website and the 2016 Ellerbe Creek Nature Tour.

CWP-7 Valley River at Taylor Creek Restoration & Plan Update

This project proposes to work in partnership with the Land Trust for the Little Tennessee, the Cherokee Co. Soil & Water Conservation District, private landowners and others to (a) correct erosion and instability problems along 4,800 linear feet of Valley River and the mouth of Taylor Creek; (b) enhance or restore and permanently protect native woody vegetation in approximately nine acres of riparian buffer; (c) improve aquatic and riparian wetland habitat; and (d) continue

to educate people in the watershed about the causes and sources of the Valley River's impairment and the value of riparian buffers. [Note: Although stream restoration projects are proposed in this application, none are fundable by the NC Ecosystem Enhancement Program. EEP does not work on waters as large as the Valley River and require longer reaches of stream for tributary projects.

In 2014, the lowest 11 miles of the Valley River were added to the 303(d) list after fecal coliform samples collected by DWQ failed to meet water quality standards at two locations that are heavily used for outdoor recreation. This project would also provide for HRWC to update its watershed plan for the Valley River to add fecal coliform as a parameter for which to target reductions in future projects and initiatives. Community meetings held during the plan update portion of the project will also serve to make the public aware of the bacterial contamination and what they can do to help fix the problems in the watershed.

CWP-8 A Continued Effort for Best Management Practice Implementation in the Dan River

This project will enhance and complement existing efforts in this watershed to reduce nutrient, sediment and bacteriological inputs into the Dan River watershed, by further implementing recommendations of the watershed restoration plan. Three previous EPA 319 grant awards have been made in this watershed and these funds, coupled with other sources including Agriculture Cost Share Program, Community Conservation Assistance Program, Environmental Quality Incentives Program, Division of Water Resources, and potentially others, will result in increased best management practice (BMP) implementation within project scope. During the last six years, significant capacity has been built with other agency and NGOs to further discussions, and project implementation, within the Dan River watershed, including across state lines. A watershed restoration plan has been developed for this area, and guides conservation practice implementation. Increased attention and understanding by the local farm and private landowner communities has been realized through ongoing BMP and education efforts. This has led to increased participation in programs. Projects will be selected based on their score on a priority ranking worksheet that takes into consideration the level of nutrient, sediment, and bacterial inputs that will be reduced by the implementation of the necessary BMPs and their proximity to the most important waters. Additional education and outreach efforts will be made to the general public, agency personnel, and NGOs through increased discussions and tours of ongoing activities by those involved. To date the education efforts have involved local landowners, school groups, agency personnel from DWR, Natural Heritage, Wildlife Resources Commission, Public Water Supply, the Watershed Restoration Improvement Team, and their counterparts in Virginia. NGOs include the Dan River Basin Association, Piedmont Land Conservancy, Trout Unlimited, and others. While limited discussions have crossed state lines to date, they have been effective in understanding the priorities of each state agency, how they are funded, what funds are currently being expended in the area, and how combined efforts may lead to improved water quality in this watershed. These efforts will be furthered through this grant.

CWP-9 BMP Implementation in Impaired and Impacted Watersheds

These grant funds will be used to fund implementation of best management practices (BMPs) in five local soil and water conservation districts via the Division of Soil and Water Conservation's Impaired and Impacted Streams Initiative (IISI). This initiative was created in order to facilitate local feedback on water quality in streams across the state using district staff in all 96 Soil and Water Conservation Districts by allocating a priority funding stream to the identified watersheds. In order for districts to be considered eligible to participate in this initiative, they must have completed a stream survey for each watershed in which the BMP will be installed. These surveys, which include detailed documentation of stream characteristics, stressors, development pressures, BMP history and needs, water quality sampling results, land use types, and notable discharges, remain active for a 5-year period. District staff members use DWR Basinwide Plans and the 303(d) list of impaired waters to identify criteria exceedances and documented impairments. Districts can also submit a survey for a stream segment they believe to be "impacted", which indicates a water body that's receiving pollutant input from some point or nonpoint source, but which may not have been assessed within the time frame or with sufficient statistical rigor to be assigned an assessment category. There are over 10,000 NC stream segments with an assessment category of 3 or 3c5. Including impacted streams in this initiative allows the targeting of conservation resources to streams which could incrementally contribute to larger water quality problems in downstream environments. It is hoped that by targeting these streams, local Soil and Water Conservation Districts can prevent emerging water quality degradation from triggering future impairments. The 5 districts participating in this application have completed surveys on 16 stream segments, and have requested funds for agricultural and urban BMPs to be installed to address the noted water quality concerns.

V. NPS Partner Agency and Division Program Summaries

A. Division of Public Health: Environmental Health Section – Onsite Water Protection Branch *Nonpoint Source Pollution Control Program*

BACKGROUND

All North Carolina wastewater collection and treatment systems using subsurface disposal fall under the jurisdiction of the Commission for Health Services (CHS) of the Department of Health and Human Services (DHHS). The CHS establishes rules for onsite wastewater systems. These rules are then administered by the Division of Public Health (DPH) Environmental Health Section, Onsite Water Protection Branch (OSWP). Currently, 79 local health departments and six districts serve 100 counties with approximately 874 Environmental Health Specialists (EHS) working on the local level. Little over half of the EHS (493) are authorized to work in onsite wastewater areas. The OSWP delegates authority to local agents to enforce the laws and rules regarding the design, siting, permitting, installation, operation, compliance and, if needed, repair of onsite wastewater systems.

Onsite wastewater systems are the most widely used method of wastewater disposal in North Carolina. More than 50% of all new housing units in North Carolina are served by septic tank systems or other onsite systems. Conventional septic systems consist of a septic tank, a distribution box (or equivalent), branching lines, and a series of subsurface effluent dispersal lines consisting of perforated pipes installed in a bed of gravel.

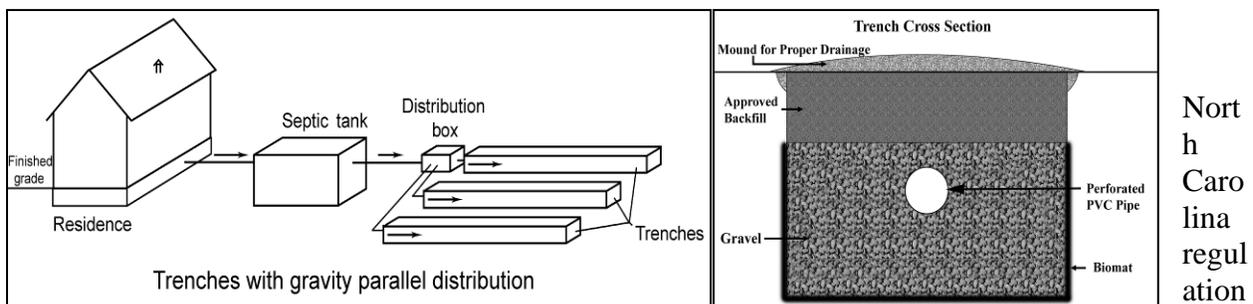


Figure 1: Convent

include provisions for permitting modified and alternative systems. Experimental, Controlled Demonstration and Innovative systems may also be permitted if approved through the Innovative and Experimental (I&E) Committee pursuant to Rule .1969. For current applications, meeting minutes, and systems approved through the I&E Committee see:

<http://ehs.ncpublichealth.com/oswp/approvedproducts.htm>

In Accordance with Article 11, Chapter 130A of the NC General Statutes [(GS 130A-335(e) and (f)], the rules of the CHS and the rules of the local boards of health shall address at least the following: wastewater characteristics; criteria for the capacity, design, installation, operation,

maintenance, and performance of wastewater collection, treatment, and disposal systems; soil morphology and drainage; topography and landscape position; depth to seasonally high water table, rock, and/or water impeding formations; proximity to water supply wells, shellfish waters, estuaries, marshes, wetlands, areas subject to frequent flooding, streams, lakes, swamps, and other bodies of surface or groundwater; density of wastewater collection, treatment, and disposal systems in a geographic area; requirements for issuance, suspension, and revocation of permits; and other factors which affect the effective operation in the performance of sanitary sewage collection treatment and disposal systems. The rules also provide construction requirements, standards for operation, and ownership requirements for each classification of sanitary system of sewage collection, treatment and disposal in order to prevent, any contamination of land, and groundwater and surface waters. The permitting procedure for these systems includes three phases, each with the accompanying documentation: Siting (Improvement Permit), Design/Construction (Construction Authorization), and Operations (Operation Permit).

The OSWP provides technical support, quality assurance, and technology transfer through a professional staff composed of soil scientists, environmental engineers, program auditors, and the NPS Coordinator. The staff reviews technologies, conducts workshops, and participates in educational outreach for citizens, state and local government employees, practitioners and other professionals throughout North Carolina. The staff also helps conducts Centralized Intern Training (CIT), a program that facilitates the authorization of Environmental Health Specialists who implement state laws and rules at a local level.

The NPS Coordinator serves as a liaison among the OSWP professionals, local health department personnel, other state agencies, academic institutions, and the general public. This position was established in the OSWP through FY96 Section 319(h) funding, and has continued to date. The NPS Coordinator implements the activities of the onsite program as part of [NC basinwide water quality management plans](#). The OSWP website contains census data, maps, information on innovative systems, rules, research reports, and a page for the NPS program. The NPS web page is located at: <http://ehs.ncpublichealth.com/oswp/nps/>

PROGRAM PRIORITIES

In conjunction with other OSWP staff members, the NPS Coordinator engages in eight of nine actions directed towards the achievement of Objective 1: *Prevent surface and ground water quality degradation from onsite wastewater systems* under Category G: *Onsite Wastewater* of the NC NPS Pollution Management Program (2004 Update) .

Eight Actions:

1. Evaluate and document appropriate innovative and alternative systems from both a public health and a water quality perspective.
2. Evaluate and document potential effects of onsite wastewater systems and community wastewater systems on coastal water quality.

3. Evaluate and document the extent of water quality impacts from high-density onsite wastewater systems and design measures to mitigate negative water quality impacts.
4. Evaluate potential programs that may improve the life cycle management of conventional and innovative onsite wastewater treatment and dispersal systems.
5. Coordinate and facilitate education and technology transfer to government agencies and to the public.
6. Encourage local governments, interstate or intrastate agencies, public and private non-profit organizations and institutions to participate in the 319 Grant Program through federal, state, and/or local funding.
7. Evaluate and provide literature on potential contributions of ongoing and emerging contaminants from onsite wastewater systems.
8. Evaluate and disseminate information regarding potential human health consequences from wastewater system pollutants.

The NPS Coordinator also directly or indirectly supports Long Term Program Goals 2 (Restoration) and 3 (Education) by improving performance via the implementation of Best Management Practices (BMPs); provision of data for use in modeling activities for development of Total Maximum Daily Loads (TMDLs); identification and repair of malfunctioning systems; and coordination of educational activities to prevent NPS pollution and aid in restoration of ground and surface waters.

HIGHLIGHTS AND ACCOMPLISHMENTS

Highlight One: Collaborative Research

Securing funding to conduct research has become even more challenging under current economic conditions. Research is critical to expanding knowledge regarding the use of decentralized options and potential sources of NPS pollution. Collaboration with other agencies, academic institutions, and private sector organizations creates a significant network of expertise. Disseminating research results is as important as the actual investigative process itself. The NPS Coordinator seeks grant funding for collaborative efforts and provides technical and logistical support for research. Examples include the following:

- The NPS Coordinator was instrumental in securing funding of \$21,860 through the 319 (h) grant programs to study septic system-derived nutrients transport and reduction dynamics using properly functioning onsite systems in the Piedmont physiographic province of North Carolina. The project workplan and scope of work were developed by the NPS Coordinator. The NPS Coordinator helped initiate the study and executed a contract with East Carolina University (ECU), Environmental Health Sciences and Safety Program.

This study includes the assessment of nutrient delivery to Piedmont streams from 1) groundwater discharge from properly functioning septic systems located at various distances from receiving streams and 2) overland surface flow from discharging sand filters. It is assumed that characteristics of discharging sand filters are parallel to surface discharging malfunctioning onsite systems. Five functioning OWTSs were utilized for this study.

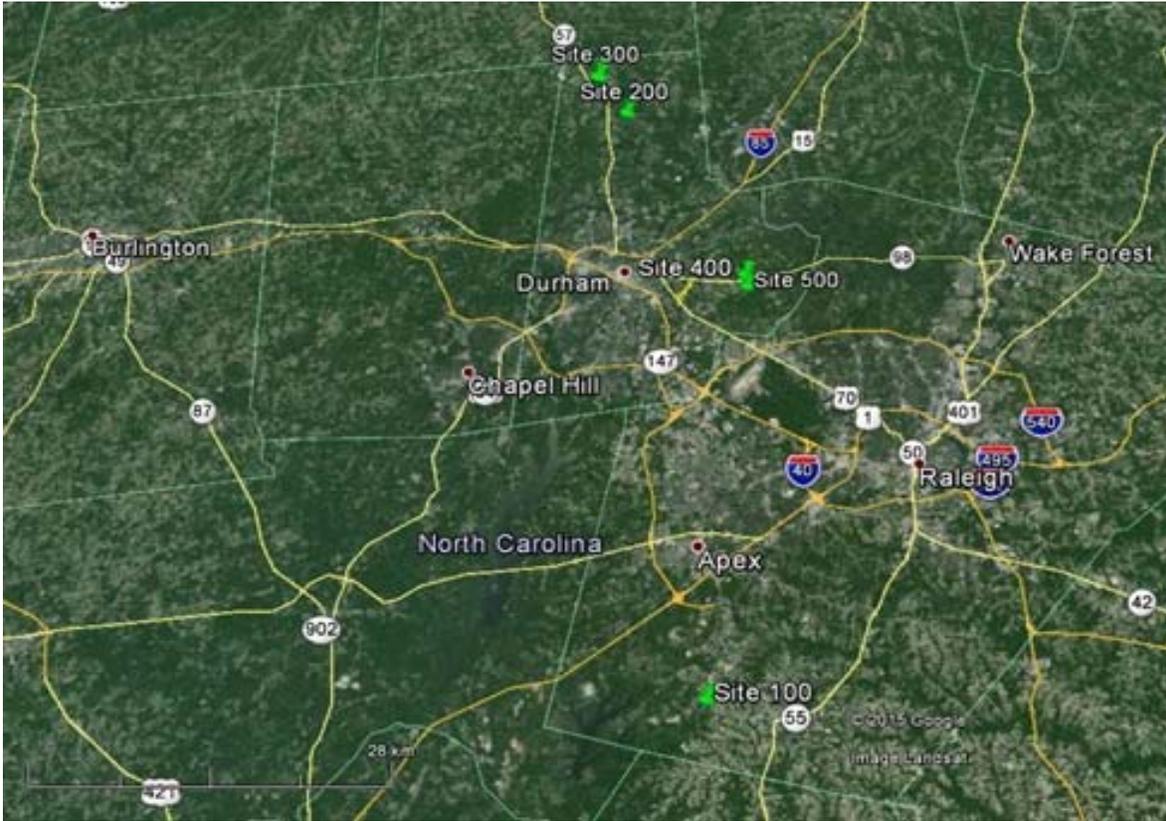


Figure 2: Aerial view of all five study sites.

Site ID	Site Location	Facility Type	System Type	Septic Tank Capacity	Dispersal
100	Southern Wake County	3-bedroom residence	Septic system	1,000 gallon	Three 110 ft (conventional gravel) trenches
200	Northern Durham County	3-bedroom residence	Septic system	900	Single drainfield 5 ft wide and 70 ft long bed
300	Northern Durham County	sheriff/fire substation	Septic system	X	Low pressure pipe (LPP)
400	Central Durham County	3-bedroom residence	Discharging sand filter	900	5 ft X 5 ft sand filter, effluent direct discharge to a creek
500	Central Durham County	3-bedroom residence	Discharging sand filter	Two septic tanks (gray water and black water)	7 ft X 58 ft sand filter, effluent direct discharge to open ditches

Each study sites were instrumented with groundwater monitoring networks. Nutrient transport from the functioning OWTSs to surface waters were measured using groundwater monitoring wells and piezometers. This approach allows for both concentration and mass loading assessments. Septic tank effluent, groundwater and surface water samples were collected routinely throughout the study period. Water and wastewater samples were collected and transported to the lab using Standard Operating Procedures. The final report for this ongoing project will be available by the end of February 2016.



Figure 3: Aerial view of site 100 with location of monitoring wells.



Figure 4: Aerial view of sites 400 with location of monitoring wells.

- The NPS Coordinator secured funding (\$9,734), helped initiate the study, and executed a contract for the project *Modeling Nutrient Loadings from Onsite Systems in a Piedmont Watershed in NC*. The project workplan and scope of work were developed by the NPS Coordinator.

The aim of the project is to quantify the nutrient (nitrogen and phosphorus) contribution from septic systems at the watershed scale under different scenarios such as at current condition, at various system failure rates, and at population growth rates using Soil and Water Assessment Tool (SWAT-Septic) model. The study helps identify the percentage of nutrients (nitrogen and phosphorus) reaching the watershed outlet and to evaluate subsequent environmental and public health impacts. Accurate estimates of onsite system-derived nutrients under current conditions and for future development will directly assist local governments and other agencies in planning activities. The information collected in this project will inform decision making related to the implementation BMPs, sewer line extensions, and requirements for potentially more advanced types of OWTS.

This is a collaborative study between the OSWP and North Carolina Agricultural and Technical (A&T) State University’s Department of Civil, Architectural, and Environmental Engineering. This is an ongoing project. A final study report will be available by the end of January 2016.

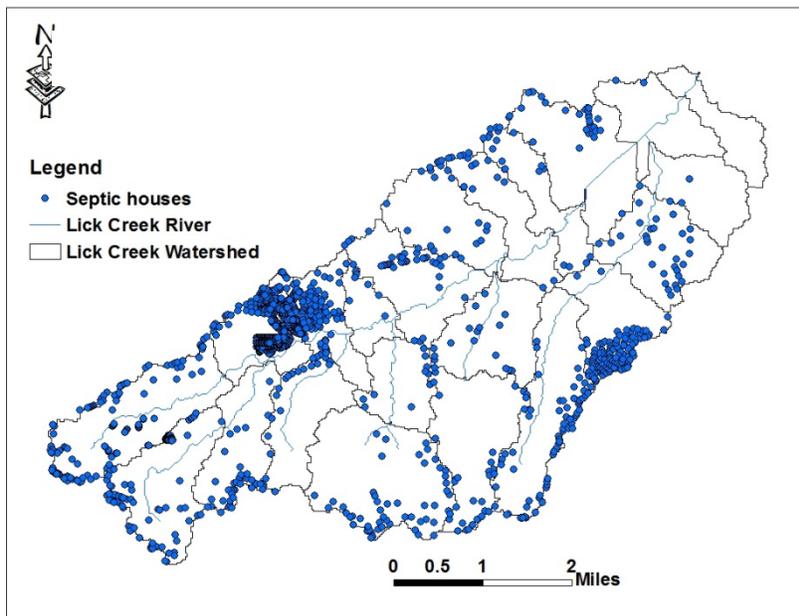


Figure 5: Spatial distribution of septic systems in Lick Creek Watershed.

- A collaborative research proposal, *Lick Creek Watershed Restoration via Improved Wastewater Management*, was submitted to 319 grant program and received \$162,000 in funds. The NPS Coordinator played a vital role in the process by developing a proposal and working in the capacity of Project Co-Investigator.

The goal of this project is to improve water quality by reducing nutrient and microbial loads from OWTSs in a measurable and demonstrative way by identifying, developing, and implementing BMPs and quantifying improvements via monitoring and modeling. The specific objectives identified to achieve the project goals are:

1. Identify reasons for non-functioning or poorly performing systems such as inadequate soil cover, excess build-up of solids in septic tanks, biomat formation in sand layers, uneven distribution of effluent to drainfield trenches, straight pipe direct discharges, excess water use in relation to design flow, improper storm-water management (runoff ponding over tank and/or trenches), preferential flow in sand filters, and other complications.
2. Develop/identify OWTS and sand filter BMPs for nutrient and bacterial mass load reduction.
3. Implement BMPs and quantify the resulting nutrient and microbial load reduction at selected homes by monitoring status before and after implementation. BMPs may include pumping the septic tanks, adding soil cover to the drainfield area, landscaping to divert stormwater away from the system, installing new drainfield trenches, installing curtain drains, low flow plumbing fixtures, permeable reactive barriers, and disinfection devices.
4. Monitor stream flow and water quality before and after implementation of BMPs to quantify differences in nutrient and bacterial loading.

5. Model nutrient contribution from septic systems and sand filters before and after implementation of BMPs using currently existing models.
6. Disseminate project data and results via professional conferences, peer-reviewed publications, educational brochures, local meetings, and other avenues.



Figure 6: Piezometer installation.



Figure 7: Soil profile textural analysis.



Figure 8: Groundwater sample collation

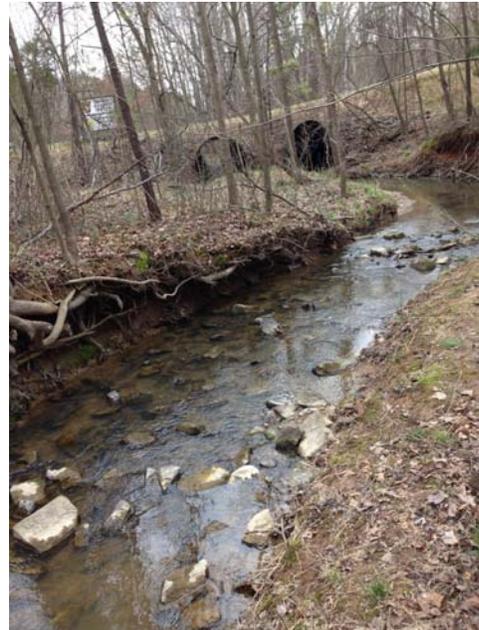


Figure 9: Surface water monitoring station.

Highlight Two: Interdepartmental Collaboration

The regulatory structure for the oversight of single-family onsite wastewater treatment systems is such that jurisdiction over surface dispersal and subsurface dispersal is divided among two different departments and divisions (the Department of Environment and Natural Resources Division of Water Resources[DWR] and the Department of Health and Human Services Division of Public Health[DPH]). The resulting variation in the nature of system management is less than optimal. The NPS Coordinator serves as a liaison between the two departments to improve communication and increase knowledge.

- The NPS Coordinator assisted DWR in developing the summary of studies evaluating nutrients from septic systems sections of the Falls Lake Nutrient Strategy 2016 Status Report. The Division of Water Resources has been developing a Falls Lake report per the requirements of the Falls Lake Purpose and Scope Rule ([.0275](#)) for the January 2016 EMC. The purpose of this report is to provide an update on the implementation of the rules, evaluate changes in nutrient loading to the lake, detail progress towards achieving nutrient-related water quality standards, and address advancements in scientific understanding and treatment technology while identifying future research and data needs. This document is the first in what will be a regularly occurring report to the Environment Management Commission every 5 years.
- The NPS Coordinator assisted water quality modelers from DWR in preparing a peer-reviewed journal article. The Coordinator is the second author of the manuscript *Identifying Nutrient Contributors in North Carolina's Coastal Plain Blackwater Rivers*. The manuscript has been accepted by the American Journal of Environmental Science and is currently in the publication process.
- The NPS Coordinator developed a protocol for a septic system field performance evaluation survey. Malfunctioning systems in any location are of concern due to their potential to endanger public health and environmental health. Evaluation of field performances of OWTSs and remediation of the malfunctioning systems are integral practices to safeguard public health and the environment. The overarching goal of the protocol is to facilitate a consistent and systematic science-based OWTS field survey that correctly ascertains representative rates of properly functioning and malfunctioning systems.
- The Coordinator reviewed following DWR drafts and provided comments:
 1. Remediating discharging sand filter and
 2. Remediating malfunctioning septic systems,

Highlight Three: Technology Transfer & Assistance

The NC Innovative and Experimental (I&E) Committee evaluates components for potential state approval and use in onsite wastewater treatment systems. Careful assessment of siting and design criteria is necessary to ensure state-of-the art technology implementation for preventing NPS pollution. The NPS Coordinator provides technical assistance and logistical support for Committee activities.

Highlight Four: Educational Materials for the Public

Public education is critical in promoting proper system use and management for the prevention of NPS pollution from onsite wastewater treatment systems. The NPS Coordinator position provides a conduit through which to distribute materials from a variety of sources.

- ‘Don’t Flush It/Don’t Sink It’ door hangers continue to be a valuable tool for Local Health Departments (LHDs), State agencies, and private sectors as evidenced by the more than 800 copies distributed during this reporting period.
- A copy of Soil Facts called ‘Septic System and Their Maintenance’, ‘Don’t Flush It/Don’t Sink It’ door hangers and a power-point presentation used by the NPS Coordinator to educate interns were provided to all CIT program participants.
- Study findings were disseminated to the various audiences through regional, state, national, and international meetings and conferences as well as through peer reviewed journal publications:
 1. *Decentralized Water Reuse Potentials in NC* - presented at Onsite Water Protection Branch Continuing Education Training Workshop hosted by Halifax County Environmental Health Department on December 3, 2015 at Roanoke Rapids, NC.
 2. *Decentralized Water Reuse: Non-potable Waters for Rural and Urban Communities* (oral presentation) and *Onsite System-Derived Nutrients in a Piedmont Watershed of North Carolina* (poster presentation) – presented at Onsite Wastewater Mega-Conference hosted by NOWRA, VOWRA, SORA and NAWT, November 4-6 Virginia Beach Convention Center, VA.
 3. *Onsite Wastewater Treatment Systems for Nutrient Fate and Transport in Lick Creek Watershed* – poster presentation at International Soil and Water Assessment Tool (SWAT) Conference & Workshops hosted by Perdue University, October 14-16, 2015 at Perdue University, West Lafayette, IN.
 4. *Modeling Onsite System-Derived Nutrient loadings Using SWAT Model* - Chesapeake Bay Expert Panel on Soil Attenuation of Nutrients during Onsite Wastewater Treatment meeting on December 17, 2014.
 5. *NPS Pollution Program: Onsite Water Protection Branch* - Centralized Intern Training (CIT) program.
 6. *Preliminary Evaluation of a Permeable Reactive Barrier for Reducing Groundwater Nitrate Transport from a Large Onsite Wastewater System* (publication) - published in the American Journal of Environmental Science, Volume 11, Issue 4. It can be viewed online at: <http://thescipub.com/abstract/10.3844/ajessp.2015.216.226>

Highlight Five: Stakeholder Processes

The NPS Coordinator is in a unique position of being able to interact with all stakeholder sectors that have an interest in preventing pollution from Non-point sources. A firm regulatory connection provides an opportunity to oversee and comment upon rules, guidance, and system technologies with colleagues both within North Carolina and across the country. A strong private sector connection results in opportunities to interact with industry professionals and trade organizations both in the field and at training venues to foster improved system management. A significant academic connection fosters collaboration on conducting research

and disseminating results. The all-important public sector connection allows outreach education for citizens and associated advocates.

- The NPS Coordinator works closely with faculties and students from ECU's Department of Health Education and Promotion, Department of Environmental Health Sciences and Safety Program, and A&T's Department of Civil, Architectural and Environmental Engineering.
- The NPS Coordinator actively participates in the Chesapeake Bay Expert Panel on soil attenuation of septic system derived nutrients.
- The NPS Coordinator consults on and provides data for basinwide planning through: attendance at meetings, provision of information on potential pollutant contributions from onsite systems, and reviews NC TMDLs/nutrient management strategies in accordance with the reporting schedule set by DWR.
- The Coordinator also served as a DPH representative at stakeholder meetings, provided technical guidance regarding onsite systems, assisted local governments in achieving mandated nutrient reductions, and promoted the implementation of BMP.
- The NPS Coordinator participated in review of current guidance documents and proposed laws and rules for fiscal impact, scientific validity, clarity, and consistency.
- The NPS Coordinator reviewed seven EPA 319(h) grant proposals submitted for 2016 funding period.

FUTURE OPPORTUNITIES

In the upcoming year the program will focus on the following:

- *Develop an onsite system BMP factsheet* based on research projects conducted in collaboration with ECU and A&T.
- *Disseminate study findings* through meetings, conferences and publication.
- *Update the Nonpoint Source Pollution program webpage* embedded in OSWP website.
- *Update statewide septic system user maps*: Septic system user's maps available on OSWP's website are based on 1990 census data. The NPS Coordinator will develop a data collection protocol and work in conjunction with OSWP Branch staff and LHD staffs to develop on onsite system user database. Statewide septic system user maps will be created using ArcGIS.
- *Lick Creek Watershed Restoration via Improved Wastewater Management*: The NPS Coordinator will be actively involved in the project in the capacity of Co-Project Investigator.
- *DWQ Basinwide Planning*: The NPS Coordinator will continue to coordinate staff evaluation of and comments on TMDLs relative to quantification of potential pollutant contribution from onsite systems to NC watersheds.
- *Funding for collaborative research*: The Coordinator will assist federal and state agencies to identify and secure funding to support research to control or reduce onsite system-derived pollution contribution to improve environmental health and public health of North Carolinians.
- *Education and Training*: It is imperative that the NPS Coordinator continue to develop disseminate and present educational programs to various levels of audiences.
- *Public outreach*: Keeping NC citizens informed regarding NPS pollution prevention is a perennial priority.

RESOURCE NEEDS

The resources below are essential for the Coordinator to pursue the objectives of the NC NPS Pollution Management Program in the OSWP effectively:

- Continued provision of salary, fringe benefits, and operating expenses for the NPS Coordinator position.
- Funding to support travel, publication, and education and outreach.
- Funding to support development and implementation of site specific Best Management Practices (BMP) to improve the quality of environmental health and public health.
- Support training for 1) Effective grant writing, 2) Database management, 3) Watershed modeling and GIS/GPS skills enhancement, and 4) Advanced computer skills needed to conduct online courses and conference.

B. North Carolina Forest Service: *Forestry NPS Program*

BACKGROUND

Forestry & Water Quality in North Carolina

The North Carolina Forest Service (NCFS or Forest Service) employs a regulatory/non-regulatory approach to forest management of the 18 million acres of forestland found within the state. Forestry Best Management Practices (BMPs) are an important tool for both protecting water quality from nonpoint source pollution (NPS) and complying with the nine required performance standards defined in the [Forest Practices Guidelines Related to Water Quality](#) (FPGs) regulations, as cited in 02 NCAC 60C .0100 -.0209. The NCFS monitors compliance of the FPGs, while providing training and technical advice on using forestry BMPs. In addition to working directly with forest operators on BMP implementation and maintenance, NCFS staff actively promote forestland owner awareness of BMPs and other land stewardship actions through a diversity of outreach venues including over-the-phone and on-site assistance, publications, and web-based delivered information. Specialized forestry-related water quality programs are being developed to further improve outreach services to NC's forestland owners and managers. These new water quality services are consistent with Goal #6 and the supporting four objectives found in the *North Carolina Forest Action Plan 2010-2015* that can be viewed online at www.ncforestactionplan.com. A number of present and future water quality actions planned are documented in NCFS's Strategic Plan that can also be found online at www.ncforestservice.gov/strategic_plan/index.htm. Periodic water quality-related progress points will also be available at the above strategic plan web link.

NCFS's Water Resources Branch

In August 2002, the Forestry NPS Unit was created to enhance BMP technical support. The organization has since assumed additional program and operational accountabilities, serving the lead role on all forestry BMP issues; stream, wetland, riparian, and watershed restorations; internal employee training and external ProLogger training; water quality, BMP and NPS publication development; and in-house water resources technical support. In September 2007, a program reorganization resulted in the "Unit" being elevated to "Branch" status, and reporting directly to the Forest Management/Forest Development Division Director. Another agency-wide water quality program reorganization initiated in September 2015 resulted in the agency's water-related regulatory function and one state-funded position being added to the Branch, some working title changes, and the organization renamed the Water Resources Branch (WRB). The WRB staff now includes a Forest Hydrologist (Branch Supervisor), Forest Water Quality Senior Specialist, Water Resources Staff Forester, and Watershed & Conservation Staff Forester. During July 2012, a part-time, temporary employee (PTTE) Grant Program Coordinator was hired to relieve the Branch Supervisor from much of the administrative workload that is associated with tracking, reporting, and budget management issues related to the multiple funding grants that have been awarded to the NPS Program for project and personnel funding. This PTTE position continued to support Branch administration through the reporting period. Another PTTE position, a Water Quality Technician (WQT), was filled in April 2015. The WQT primarily assists the Forest Water Quality Senior Specialist with recurring BMP surveys and BMP special projects such as the ongoing forest stream crossing study and continued development of the GIS-based Forest Preharvest Planning Tool.

NCFS Water Quality Field Staff

The 2015 water quality program reorganization also included a consolidation and realignment of the eight District Office-based Water Quality Foresters (WQFs) to six Regional Office-based WQFs. The WRB is now accountable to support NCFS's Regional WQFs to promote and sustain successful BMP implementation and FPG compliance across the state forestlands most of which are owned by non-industrial private landowners. The Branch's regulatory compliance support of the WQFs also includes the river basin and watershed-specific riparian buffer rules and NC General Statutes on debris blockage of streams and drainage way ditching. The WQFs also provide pre-harvest planning services, conduct supplementary FPG inspections, provide education, training and technical assistance to forest operators and are the primary contacts for water quality issues or concerns related to timber harvesting. These specialized foresters are also the primary field liaisons for 319-Grant projects managed by the WRB. The water quality work hours invested by NCFS state-funded field personnel are tracked and used as a primary source of match to 319-Grant funds.

PROGRAM PRIORITIES

The WRB manages its projects within the USEPA's two tenets of nonpoint source pollution prevention: restoration and protection. Stream, river and watershed restoration projects are solely focused on properties managed by the NCFS. The intent of restoration is to manage not only the timber resources of these properties, but holistically the natural resources on these lands.

The Forest Service's water resource protection projects include a comprehensive forestry BMP program consisting of assessing, monitoring, and information transfer to agency customers through a strong and diverse outreach component to reach primary customers, such as forest operators and forestland owners, and the general public. The agency's BMP outreach is also utilized by local community college and university faculty to augment their forestry program delivery. Additionally, the Branch has a strong NPS pollution prevention outreach message that is directed towards children in the classroom.

The Water Resources Branch objectives accomplished in FY2015 include:

- Continued field work for the 3rd-Cycle of BMP Implementation Assessments on logging jobs across the state.
- Continued to support water quality sampling and monitoring of a forest road stream crossing to close out a multi-year paired watershed study, in partnership with USDA-Forest Service's Southern Research Station. A final project study report on the overall watershed study was completed in 2015. A lay reader (less technical) companion report is also being prepared for public use. The stream crossing monitoring report is due out in early 2016.
- Sustained the use of the NCFS bridgemats by loggers as a preferred BMP for crossing streams and ditches. Also initiated a search for grant funding to support a bridge mat cost share program to facilitate more logger purchases of temporary bridging.

- Monitored stream restoration projects for continued vegetation management, biologic communities, and overall stability. Monitored and inspected the ongoing restoration of “The Canal” at Claridge Nursery, Wayne County, being completed by NCDOT as a mitigation compensation project supporting the Highway 70 Bypass around the City of Goldsboro. Now open for public travel, the bypass transects NCFS’s Nursery property and the stream being restored.
- Continued progress in developing the Forest Preharvest Planning Tool, which will allow users to identify areas on a timber harvest where extra attention to BMPs is warranted.
- Continued our training partnership with the NC Forestry Association’s ProLogger Program, providing field personnel as instructors to teach the Forest Management & Environment curriculum.

HIGHLIGHTS AND ACCOMPLISHMENTS

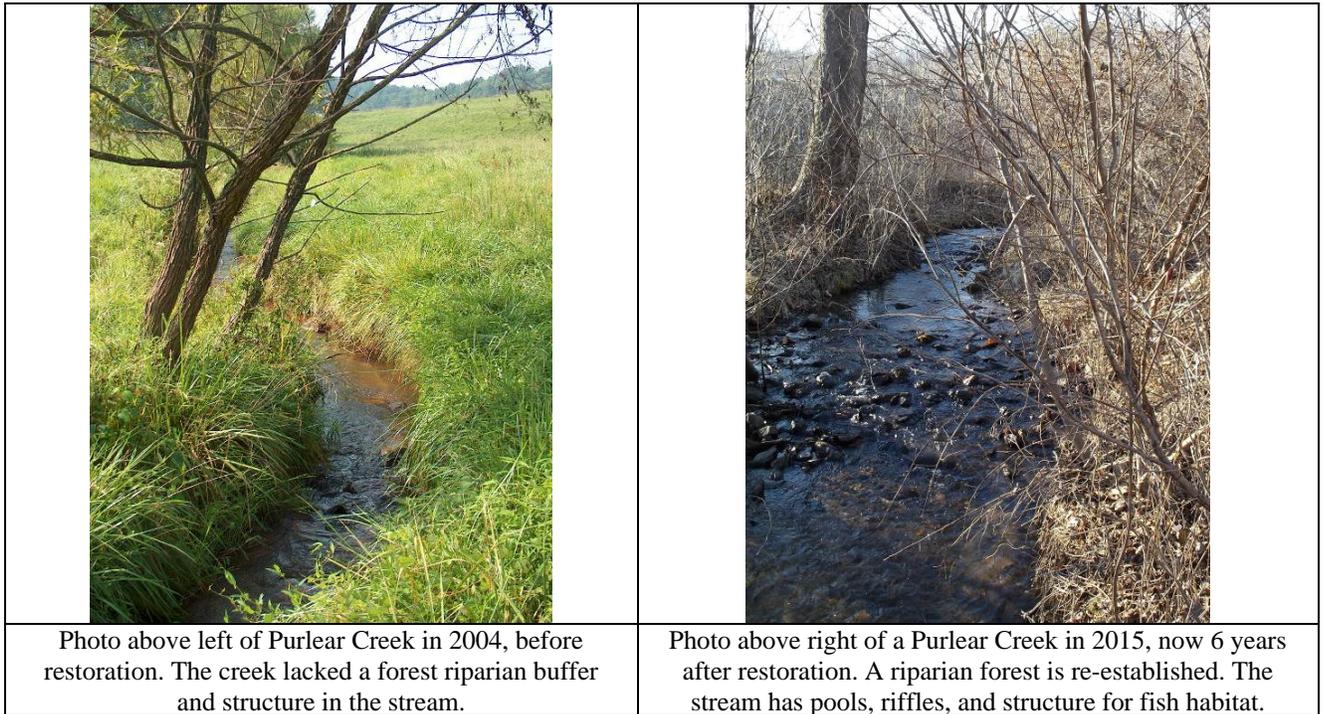
Restoration

Lake Julia Outfall Restoration, DuPont State Recreational Forest, Transylvania County

Four site visits were made to this restoration site, to evaluate ongoing vegetation growth and verify the extent of re-colonization of trout into the restored reach of stream. In two occasions, trout were verified to be in the stream. This validates the success of the restoration.

	
<p>Photo above left, May 2015. The NCFS Forest Hydrologist taking temperature and dissolved oxygen readings.</p>	<p>Photo above right, November 2015. The NCFS Grant Coordinator next to a shrub that was transplanted during restoration, approximately 3 years ago.</p>

Purlear Creek Restoration, Rendezvous Mountain Educational State Forest, Wilkes County



Two monitoring visits were conducted on Purlear Creek. The final (5th year) post-restoration monitoring report was prepared and submitted. Vegetation growth remains excellent. Work was done in the spring of 2015 to mark a section of property boundary line that is close to the riparian zone and stream.

Linville River Restoration, Gill State Forest, Avery County

The Water Resource Restoration Master Plan completed in March 2014 for the Linville River and its tributaries that flow through the Gill State Forest was used to acquire a Clean Water Management Trust Fund (CWMTF) \$203,275 state grant for restoration of 1,400 linear feet of river. An additional grant application was submitted to the CWMTF in February 2015 that resulted in a contingency award of \$196,725. The Water Resources Branch continues to hold in reserve an additional \$45,000 in allocated NCDWR Water Resources Grant funds to complete the planning, design, and permitting of this project over the course of 2016. The actual river restoration will be completed in the May through September 2017 timeframe.

The Canal, Claridge Tree Nursery, Wayne County

Restoration of The Canal has been ongoing since August 2015 and is scheduled for completion in January 2016. Faculty and graduate students from the NCSU Department of Biological and Engineering (BAE) have submitted an application to NCDOT to obtain another grant to conduct post-construction monitoring of the restored stream reach. BAE is continuing its near-continuous (every 15 minutes) *in situ* monitoring of water quality parameters, including pH, temperature, conductance, and dissolved oxygen on one monitoring station located immediately downstream of the construction site. Additional water quality parameters, including nutrients and turbidity, are being monitored using

spectrophotometers on the same 15-minute frequency. NCDOT previously completed biological surveys of benthic macroinvertebrate communities at these same monitoring locations in 2013 and 2014 in order to characterize pre-construction ecological conditions. Post construction benthic monitoring is planned once the project is completed.



Photo above left, August 2014. View shows a portion of The Canal before restoration.



Photo above right, October 2015. Restoration is underway and nearly completed on this section.

Little River Restoration Master Plan, DuPont State Recreational Forest, Transylvania County

A master plan funded by a \$45,000 state water resource grant was completed in September-October 2015. The plan inventoried and prioritized stream and river reaches that are candidates for restoration and numerous site-specific areas of concern aligned with the water resources of this state recreational forest. The master plan final report will appear on the NCFS’s website in 2016.

Protection – Bridgemats

The use of the NCFS bridgemats by loggers remains a key component of outreach and demonstration. During the past year, the bridgemats were used on 55 logging jobs to protect or establish 73 crossings, while providing access to an estimated 2,770 acres of timberland harvest.



December 2014, Edgecombe County. Logger use bridgemats for many purposes,



August 2015, Elizabeth City District Office. A logger is borrowing both sets of bridgemats.

including for access entrances to public roads.
Photo by A. Levine, NCFS Water Quality Forester.

Photo by J. Caddy, NCFS Asst. District Forester.

Protection - Education and Training

This past year, Water Resources Branch personnel again coordinated and led multiple educational training events on BMPs and overall nonpoint source pollution management.

- In partnership with the [North Carolina Forestry Association](#) the Branch helps coordinate and instruct at ProLogger training workshops across the state. During FY2015, four ProLogger Base Course workshops were held, with an estimated 170 loggers receiving training. The NPS Branch provided instructors and BMP-related materials for the workshops.
- Three forestry classes were hosted for two colleges, totaling 30 students. Topics included forested watersheds, hydrology, timber harvesting logistics, and BMPs. In addition, copies of all four BMP training videos previously produced with 319-Grant funding were provided upon request to the Forest Management Program at Haywood Community College for class instruction.
- Branch staff assisted with coordinating and instructing at two sessions of the N.C. Surface Water Identification and Training Certification (SWITC) course, reaching 64 attendees. This class provides training to identify stream origin and types, specifically for implementing the numerous state-enacted river basin and watershed specific riparian buffer protection rules.

Protection - Technical Assistance

The Water Resources Branch provided technical assistance and developed several publications on a variety of BMP, nonpoint source, and forest water resources topics:

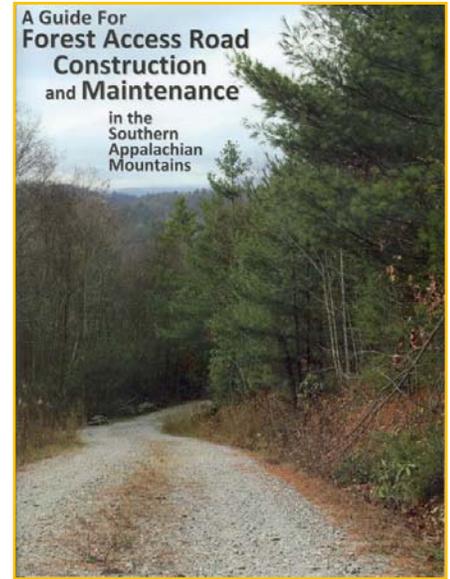
Conducted an on-site visit in Jackson County upon request from a landowner and staff of a land conservation trust, to assess BMP options for laying out stream crossings, skid trails and access roads for a proposed timber harvest.

Conducted an on-site visit and provided advice and recommendations to a landowner in Washington County who is interested in constructing a permanent stream crossing and approximately 600 feet of improved forest/logging road through a wetlands area.

Assessed multiple streams and ditches on a State Forest, in preparation of a timber sale, to determine the layout and need for establishing streamside management zones.

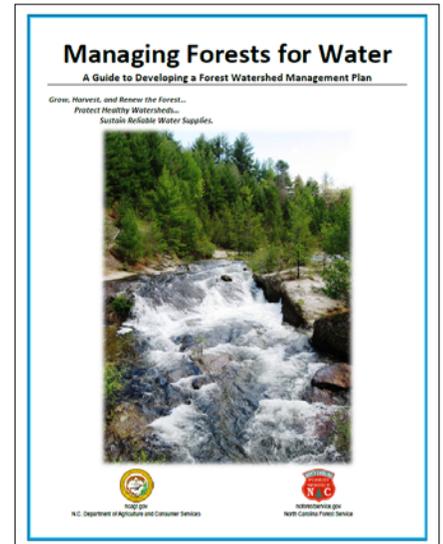
Provided input on BMP options for controlling old erosion gullies nearby a stream in Cleveland County, upon request from a member of a land conservation trust.

Published 6,000 copies and distributed a newly revised and updated BMP guide book, “[A Guide for Forest Access Road Construction and Maintenance in the Southern Appalachian Mountains](#)” (PDF, 8MB). This guide was also distributed to the Alabama Forestry Commission, Virginia Department of Forestry, and USDA-Forest Service Southern Region; all of which contributed funds for printing.



Revised, updated, and published 11,000 copies of a pre-harvest planning brochure for forest owners, “[Call Before You Cut Timber](#)” (PDF, 1MB), and produced a companion mini-poster highlighting the benefits of harvest planning and services that the N.C. Forest Service can provide. Copies of both items were distributed statewide to NCFS offices.

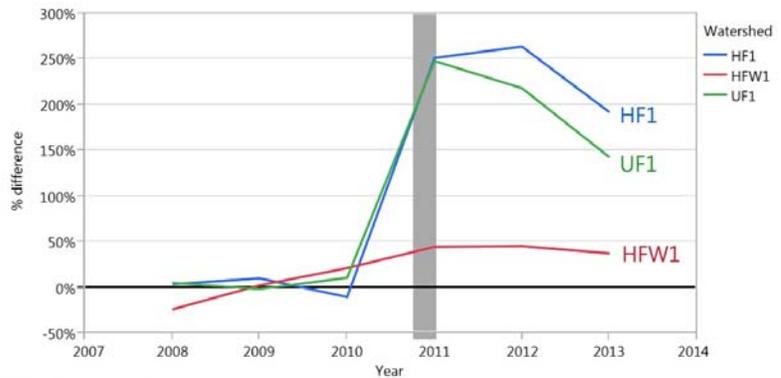
Conceptualized and developed “[Managing Forests for Water](#)” (PDF, 3MB), a guide book on developing a forest management plan that is tailored to water resources. The recommendations and information demonstrates how forest management, in lieu of forest preservation, is compatible with and can support management of water supply watersheds.



Protection - BMP Monitoring and Assessments

BMP Effectiveness Monitoring Watershed Study, Durham/Granville counties

The final technical report for the paired watershed study was prepared by the project partners as the US Forest Service (USFS) Eastern Forest Environmental Threat Assessment Center (EFETAC) and submitted to NCFS's WRB in early 2015. This study focused on changes to watershed hydrology, instream water quality (sediment and nutrient concentrations and loading), stream discharge, channel morphology, and aquatic communities in response to clearcut timber harvests done in accordance with forestry BMPs and the Neuse River Buffer Rules. Results from both studies contribute to the knowledge base on the effects of forest harvests on watershed hydrology, instream water quality, and instream ecological effects in the piedmont area of NC as well as throughout the Southeastern U.S.



Results from the paired watershed study show that stream discharge increases after harvest but begins trending back towards pre-harvest conditions within 1-2 years. Approximate time of harvest shown by the grey band.

Stream Crossing Studies

Data collections for a complementary study addressing the effects of a variety of stream crossing types on instream sediment concentrations and loading was completed this year. This study is also being completed by scientists at USFS-EFETAC, and was initiated using 319-Grant funding. Study sites included temporary and permanent crossings on active timber harvest tracts, as well as one recreational ford crossing. Pre-, during, and post-harvest water quality monitoring was conducted. The draft report is currently being prepared by USFS scientists, and anticipated to be available for review by Branch staff in early 2016.



Automated sampler used for collecting storm samples during the stream crossing study.



One of the temporary stream crossings monitored as part of the study.

Forestry BMP Implementation Assessment Survey

Though this current cycle of the BMP Implementation Survey was originally initiated in 2013, progress on the Forestry BMP Implementation Survey was initially hampered by the extended vacancy of the NPS Senior Specialist position. However, this position was filled in August 2014 and significant progress was completed in 2015. Branch staff developed a formal study plan detailing the study design, random sampling methods, and required sample sizes for each major ecoregion of the state (Blue Ridge, Piedmont, Southeastern Plains, and Coastal Plains) that will ensure study results will be statistically valid. A total of 147 surveys have been completed, primarily in the Piedmont and Southeastern Plains (inner coastal plain). Approximately 60 more surveys are needed in the mountains and outer coastal plain to meet the target number of samples for this cycle of the survey. The final report is anticipated to be completed in 2016.



The Forestry BMP Implementation Survey quantifies the use of BMPs on forestry sites and their ability to protect water quality. This is an example of rehabilitation of a stream crossing that was done in accordance with NCFCS recommendations.



Another example of a forestry BMP: applying logging debris to skid trails. While it may appear “sloppy” or “messy”, this BMP can prevent soil erosion from trails, decks, roads, and hillslopes until regrowth of vegetation.

BMP & Forest Watershed Studies Reference Compilation

Over 100 studies in the southern and eastern U.S. related to forestry BMPs and watershed effects were identified, summarized, and compiled into a .KML datafile, suitable for viewing and sharing in GoogleEarth® mapping application software. This reference file was shared with the forestry BMP program coordinator in each of the state forestry agencies across the South, as well as researchers at the USDA-Forest Service and multiple universities. This reference file was compiled in response to recurring inquiries on questions related to the how forestry practices effect water quality, and questions about the overall performance and effectiveness of forestry BMPs. The NCFCS will maintain this file as staff becomes aware of newly published research.

Protection - Outreach and Support Assistance

Recurring Publications

BMP Newsletter: The quarterly BMP newsletters remain popular and were re-formatted into a single statewide quarterly publication. Topics of regional interest are included with each edition. All past and current issues are available on the NCFS website:

http://www.ncforestservation.gov/water_quality/bmp_newsletter.htm

“Water Quality Year-in-Review” Annual Report: Each year we compile and produce the *Year-in-Review*, which highlights NCFS Water Quality and NPS Program successes and accomplishments. Implemented in 2004, this annual publication recognizes the important contribution of our financial and technical partners in delivering core forestry BMP and water quality services. All previous editions can be found on the NCFS web site at:

http://www.ncforestservation.gov/water_quality/year_in_review.htm.

The Forestry NPS Branch shared recognition with other NCFS staff in receiving the 2014 annual Dan Wilkinson WRAL-TV Conservation Communications Award from the [Wake County Soil & Water Conservation District](#). The award was presented for the numerous publications and educational references that are developed by the NCFS on a wide range of topics including water quality and forest stewardship; specifically mentioned were the BMP newsletters, Year in Review, and forest/water quality educational workbooks that were developed with funding from prior 319-Grants.

Website Resources

The Forestry NPS Branch is responsible for providing and updating content on the ‘Water Quality’ section of our agency’s website (www.ncforestservation.gov). During the past year, the ten most frequently visited water-related web pages can be found outlined in the table below:

Web Page	Page Visits	Web Page	Page Visits
What are BMPs?	3,774	BMP Field Guide	642
Logging FAQ	3,078	ProLogger	521
BMP Manual	2,179	Regulations	462
BMP Newsletters	2,013	Buffer Rules	400
Water Quality Main Page	1,935	Roads	348

Outreach Events

Forestry NPS Branch staff participated, presented, assisted and/or exhibited at the following events, with the estimated number of registrants or attendees in parentheses:

- 2014 EcoStream Restoration Conference (350); presented on a model for state forestry agencies to undertake stream restoration on State Forests
- Three urban forestry workshops on the connection between forests & watersheds (115)
- 2015 Southern Farm Show (3,000+)
- 2015 Annual Conference of the N.C. Water Resources Research Institute; presented findings from a forest cover analysis in the High Rock Lake watershed (250)

- 5th Interagency Conference for Research in Watersheds (300); presented a poster on forest cover analysis in the High Rock Lake watershed.
- 2015 Mid-Atlantic Logging & Biomass Equipment Expo (3,500)
- 2015 Arbor Day / Tree City USA for the Town of Cary (150)
- 2015 Resource Conservation Workshop for high school students (90)
- 2015 State EnviroThon; served as an expert judge to review the final entrant teams

Inter-Agency Cooperation & Committee Service

Forestry NPS Branch staff served on several committees and working groups:

- Albemarle-Pamlico National Estuary Partnership (APNEP): Science and Technical Advisory Committee; and Monitoring Committee;
- North Carolina Agricultural Task Force;
- North Carolina Coastal Habitat Protection Plan interagency stakeholder committee;
- North Carolina Farm Bureau Annual Policy Review Day: Natural & Environmental Resources Committee;
- North Carolina Forestry Association: Safety, Logging and Transportation Committee;
- North Carolina Source Water Collaborative;
- Southern Group of State Foresters (SGSF) Water Resources Committee. The BMP Staff Forester completed tenure as Chair of the Water Resources Committee and led the Committee's 2015 summer meeting in conjunction with the SGSF Annual Meeting, representing the Water Resources Branch.

New Outreach Exhibits

New outreach exhibits were conceptualized, developed and produced by Branch staff, for use by NCFS offices statewide. The topics included forested wetlands and the benefits of retaining or establishing tree buffers along eroding streams. The wetlands exhibits were tailored with different artwork and photographs for western and eastern regions of the state; only two examples are shown below. All three of the stream buffer exhibits are illustrated. On all exhibits, the 319-Grant Program was credited as the primary source of funding for development and production.

Is the Stream on Your Farm Washing Away?

Planting Trees Can Help.

What's Wrong With These Photos?

- Runoff from the pasture/field is uncontrolled.
- Stream banks are unstable and eroding.
- Soil is more likely to wash into the stream, causing pollution.
- Productive land can be lost.
- If you only leave one or two individual trees, they are more prone to uprooting from wind, snow or ice, causing more stream bank damage.
- Minimal habitat for birds, wildlife and beneficial pollinators.

The 319 Grant Program, the Department of Environment and Natural Resources, and the University of North Carolina

Establish Trees, Shrubs or Native Grass Along Your Stream

How Is This Better?

- Stream banks are stable.
- Research has shown that trees, shrubs or natural grass along streams can filter-out sediment and excess nutrients.
- Birds, wildlife and pollinators have shelter, nesting and food.
- Low-cost, low-maintenance, low-risk, high-reward.
- Even a narrow conservation strip along the stream will help... it does not need to be excessively wide
- Trees do not need to be tall: shorter trees can minimize shading over crops, and are less likely to get blown-over from wind storms.

Examples of plant growing trees that are good for stream sites include: American Holly, Black Locust, Dogwood, eastern-red cedar, persimmon, red-bark elm, sweet gum, wild plum, white, and white hickory.

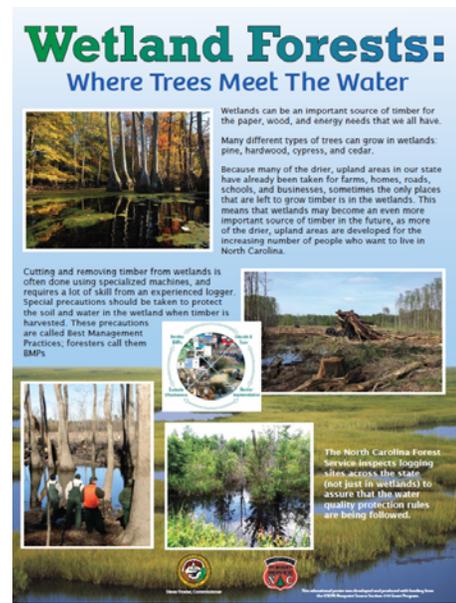
The 319 Grant Program, the Department of Environment and Natural Resources, and the University of North Carolina

The North Carolina Forest Service Can Help

- We cultivate and sell a diversity of seedlings that are native to North Carolina: 1-888-NC-TREES or www.buynctrees.com
Pines, hardwoods, cypress, cedar, and bunch-grasses.
- We have a free pocket guide on how to select and plant trees along streams and wetlands.
- We can loan tree planting tools* and demonstrate correct planting methods.
- We can develop a customized tree-planting plan.*
- We can provide information on tree planting contractors.

* A Service Fee May Be Required

The 319 Grant Program, the Department of Environment and Natural Resources, and the University of North Carolina



“WATERS”: Water Resource Assessment and Technical Response Support

Policy and Regulatory Matters

The Watershed & Conservation Staff Forester continued to remain invested as the NCFS subject-matter-expert on potential implications of the proposed changes to the federal “Waters of the US” (WOTUS) definition rules. This included rules analysis, developing scenarios for obtaining feedback from USEPA regulatory staff, and preparing talking points for agency staff and affiliated parties. He also remained involved in advising other state forestry agencies while serving in his role as Chairman of the Water Resources Committee for the Southern Group of State Foresters.

Forest-Watershed Projects

The primary deliverable was the production of a guidebook, “Managing Forests for Water”, and presentation on forest/watershed projects at several outreach events. These items are mentioned in other sections of this report.

Emergency Response

As required by NCFS policy, all personnel are assigned emergency response duties and support in-state incidents, as well as incident management training when appropriate. In addition, the Forest Service assists other states that are part of a mutual aid agreement. During this past year, the Forest Hydrologist served as a PIO2 on a NCFS IMT consisting of Type 2 trainees tasked to manage a three-day wildfire exercise near Asheboro, NC. The Forest Water Quality Senior Specialist observed this Region 2 Fire School, specific to the role of the GISS. The Branch’s Grant Program Coordinator attended a MEDL /SOFR meeting in Lexington, NC. The Watershed & Conservation Staff Forester, Grant Program Coordinator, and Forest Hydrologist completed RT 130. The Forest Hydrologist completed a

week-long M-410 at the Kinston Training facility. The Forest Water Quality Senior Specialist completed online training course NTC 1730-65 and also attended the 2015 Fire Season GISS webinar. The Forest Water Quality Senior Specialist also completed S-341 (GISS Introduction) in Tallahassee, FL. The Forest Hydrologist was the only Branch member that needed to take the Work Capacity Test; he passed the “Light” test. The Forest Hydrologist was dispatched in April 2002 as a PIO2 supporting the Weed Lane Fire; this wildfire was located near Black Mountain, NC. The Forest Hydrologist was also dispatched to NE Oregon as a PIO1/PIO2 for the Cornet-Windy Ridge Fire and the Grizzly Bear Complex Fire during August-September, 2015.

FUTURE OPPORTUNITIES

Future Staffing Opportunities

Re-establishing the WRB’s former administrative professional (FTE) with a part-time temporary (PTTE) employee continues to be a successful pathway to manage the rigorous requirements of multiple state and federal grants, and newly-implemented NCDACS grant monitoring and reconciliation requirements. Tasking this temporary staff person with a diversity of grant administrative matters allows the Forest Hydrologist to engage more fully in field work that supports core BMP projects, technical problem-solving, and the pursuit of additional project-specific supplemental grants to sustain the Branch’s NPS pollution prevention mission, including funding of staffing, projects, and operations. The continued use of a PTTE employee (WQT) to conduct BMP implementation assessments, bridgemat inspections, and support other BMP field projects on an as-needed basis will be re-evaluated for implementation in CY2016.

Ecosystem Services

The USEPA and USDA-Forest Service are leading national efforts to promote the concept of identifying, quantifying and marketing ecosystem services, particularly those services provided by forests. The Water Resources Branch staff’s leadership with the Ecosystem Services Working Group that resulted from the *Forest Action Plan 2010-2015* has demonstrated the natural linkage between ecosystem services and the prevention or management of nonpoint source pollution. The WRB remains in a position to become NCFS’s lead technical staff for ecosystem services in much the same way that the Branch is the technical lead on BMPs, stream restoration, and non-regulatory water resource issues. Moving forward on one aspect of the *Forest Watershed Assistance Program*, Branch staff are demonstrating how forest management, forest conservation, and forestry practices can prevent, control or mitigate water resource degradation and nonpoint source pollution. Water resource functions are highest among all of the ecosystem services that are most readily available and identifiable.

RESOURCE NEEDS

Staff Funding

The Water Resources Branch's present mix of grants will support current staff positions into CY2017. Based on the continued viability and funding of USEPA's 319-Grant Program, these grant funds should be available in 2017 and beyond, but may be decreased (or increased) based on USEPA's fiscal year award amounts to NC and NC Session Law 2011-394. Beyond 2017, a permanent source of funding is still needed to sustain WRB staff and its pollution prevention mission. In the absence of a future allocation of state-funded appropriations, the Branch Supervisor will continue to work with staff to fund salary, fringe, core deliverables, and special projects using a diversity of non-competitive and competitive grant receipts from all available sources. This strategy has worked for the past 13 years of the Branch's existence, and given the outputs and results generated to date, represents the primary method to sustain water quality program delivery.

Personnel, Supplies, Materials, and Equipment

- Additional funding for restoration priorities and projects identified in the Gill State Forest (Linville River) Water Resource Restoration Master Plan.
- Funding for restoration priorities and projects identified in the DuPont State Recreational Forest (Little River) Restoration Master Plan.
- Funding to develop a Water Resource Master Plan for the lands being acquired that will become the Headwaters State Forest.
- Funding for stream crossing repair at the Clemmons Educational State Forest.
- Funding for BMP implementation, demonstration, and improvement work on our three State Forests and seven Educational State Forests.
- Funding for occasional repairs of NCFS bridgemats and to potentially purchase additional replacement bridgemats to sustain their availability to loggers. Also, funding to support a new cost-share program allowing forest operators to purchase mats at a reduced cost.
- Continued funding for operational support of the Water Resources Branch, and to provide BMP training opportunities to Regional Water Quality Foresters and other affiliated NCFS field foresters; including applicable technical resource publications, field tours, and/or workshops.

C. North Carolina Division of Energy, Mineral, and Land Resources: *Land Quality Section*

Background

The NC General Assembly passed the Sedimentation Pollution Control Act (SPCA) in 1973. Its main goals are to keep sediment from impacting natural watercourses and adjacent property owners. There are four exemptions to the law: production of plants and animals beneficial to man, production and harvesting of timber products, mining, and emergency situations. The law has five mandatory standards: buffer zones along water bodies, establishment of groundcover, sufficient measures to prevent sediment loss, erosion and sedimentation control plan approval, and following the approved plan. The NC Department of Environmental Quality, Division of Energy, Mineral, and Land Resources, Land Quality Section (LQS) enforces these standards.

In the 1930's, farmers recognized the importance of protecting the land and streams. The nation's first Soil and Water Conservation District was born in Anson County. After WWII, urbanization and additional highway construction warranted concern about accelerated erosional processes and sediment laden runoff impacts to streams. Citizen concern prompted local governments to pursue legislation for environmental protection. The SPCA has been in effect for 42 years.

There are several benefits of compliance with the law. The land is protected from accelerated erosional processes thereby maintaining the valuable nutrient rich topsoil. Wildlife and aquatic habitats are protected from sediment impacts. The cost of power and drinking water treatment is decreased. Chances of flooding are lessened and water pollution from chemicals being carried on soil particles is reduced.

Sedimentation is the number one source of water pollution by volume in the state of North Carolina. From July 2014 to June 2015, there were approximately 2,109 new permitted sites in North Carolina, which included 22,100 acres of newly disturbed land. There are approximately 12,451 open projects, which have not been closed-out by DEMLR. Each year we lose more valuable topsoil to erosion, and sedimentation threatens many of our waterways.

Environmental education is one of the most effective preventative tools in use today. The legislature provides funding for sediment education projects. These projects may be utilized for researching new erosion and sedimentation control technologies, providing workshops for industry professionals, creating activities for students, and distributing publications to the general public. This information allows citizens and professionals to remain informed on the degrading effects of erosion and sedimentation. It helps to maintain clean natural water, and preserve the state's mountain and beach areas. It is important that the sedimentation education program has the opportunity to reach every corner of the state to ensure that people within each river basin and county realize the effects that their actions may have on their neighbors, and on future generations. Environmental education is only effective when you reach the public and leave a lasting impression.

PROGRAM PRIORITIES

Education/Workshops

- Continue to emphasize technical training for the regulated community (contractors, developers and consultants), other governmental programs, and education of the general public.
- Display, exhibit, and/or speak at science fairs, career days, or technical conferences.
- Create presentations for workshops, K-12 Enviroscape demonstrations, or internal employee training events.
- Develop/maintain chapter on Sediment Education for LQS Employee Handbook.

Publications/Website/Information Requests

- Develop technical material and presentations. Distribute and order brochures and lessons on erosion and sedimentation control. Educate general public on prevention of nonpoint source pollution. Update materials and web site periodically to ensure availability of current information.
- Provide public assistance and technical assistance. Answer public inquiries from students, reporters, teachers, legislators, etc.
- Field complaints from the toll free 1-866-STOPMUD number. Manage public assistance and complaint databases. Complaints are entered into DEQ's IBEAM database framework, and routed to the appropriate regional office for investigation. Follow-up is conducted, as necessary, to ensure the concerns of the complainant are addressed.
- Distribute information on the *NC Erosion and Sedimentation Control Planning and Design Manual, Field Manual, Inspector's Guide* and video.
- Revise the *NC Erosion and Sedimentation Control Planning and Design Manual, Field Manual, and Inspector's Guide* as approved by the Technical Advisory Committee (TAC). Revisions for the design manual will be required to ensure practice standards comply with regulations regarding the Effluent Limit Guidelines (ELGs) for construction stormwater.
- Produce semi-annual issues of *SEDIMENTS* newsletter.
- Fulfill Local Programs information requests via email, mail, and phone.
- Revise and edit erosion and sediment control brochures, manuals, and promotional materials.

Annual Award/Contest Programs

- Display, exhibit and distribute materials to students and science teachers at various conferences, career fairs, and school science days.
- Conduct annual awards program to recognize outstanding delegated erosion and sedimentation control programs.

Contract Administration

- Write and revise grant proposal applications.
- Prepare proposals for contract administration.
- Manage contract records according to invoices and contract budgets.

Sedimentation Control Commission/Sedimentation Education Committee/Technical Advisory Committee

- Serve as staff to the Sedimentation Control Commission, Sedimentation Education Committee, and Technical Advisory Committee.

NPS 319 Program Support

- Non-Point Source workgroup advisor for Land Quality Section.
- Evaluate 319 NPS proposals for federal funding.

Technical Oversight/Assistance

- Offer interagency coordination – NC DOT, PAO, EE, DWR etc. Support research projects and NPS Phase II educational outreach initiatives.
- Field legislative inquiries and offer peer review of technology and research.

ACCOMPLISHMENTS

- In 2014-15, four Erosion and Sedimentation Control Seminars were conducted for design professionals, with a total of 300 participants. Presentations were given on the new Sediment Program database AMANDA, erosion and sediment control measures, and design criteria at various events. Topics related to legislative updates, stormwater minimum design criteria, and erosion and sediment control on forestry sites/stream restoration projects were discussed with the participants. Techniques for achieving diffuse flow were introduced to aid in preparation of erosion and sediment control plans and stormwater management. The LQS has also assisted local governments and private organizations with their own erosion control workshops.
- An annual workshop was conducted for the delegated local erosion and sediment control programs to train local government staff in erosion and sediment control related issues. Representatives from 48 of the 53 local governments participated in the workshop with a total of 105 participants. Vital information and training was provided on erosion and sedimentation control plan design, inspection of construction sites, forestry BMPs, stormwater control, and preparation of an effective enforcement package. The event allows an opportunity for local programs to exchange information and present local innovation. The local programs were allowed an opportunity to share experiences on topics such as: converting temporary sediment basins into permanent stormwater BMPs, single lot residential construction permitting, and alternative enforcement tools.

An awards program was conducted to recognize local governments that excel in erosion and sedimentation control efforts. Plaque presentations were made to two local program winners: the City of Raleigh and Chatham County. Certificates were issued to the staff members of both programs. Dr. Kenneth B. Taylor, PG, State Geologist, Land Quality Section offered

the keynote address for the ceremony entitled, “Oil and Gas Exploration & Production and Erosion and Sedimentation Control.” His presentation discussed oil and gas development within the Triassic Rift Basins located in North Carolina.

2015 Local Program Winners: City of Raleigh and Chatham County



Figure 1: 2015 Local Program Winner, City of Raleigh. (L-R): Ben Brown, Natalie Berry (NC SCC), Justin Harcum, and Lauren Witherspoon.



Figure 2: 2015 Local Program Winner, Chatham County. (L-R): Rachael Thorn, Natalie Berry (NC SCC), Dan LaMontagne, and Stewart Pickens.

- The Sedimentation Education Specialist was invited to Sandhills Community College to serve as a guest lecturer for the Department of Engineering Technologies. A new course, Hydrology and Erosion Control, has been implemented in the program, and instructors sought an opportunity to raise student awareness. The course instructor asked for an overview of the Sedimentation Pollution Control Act, the elements of an erosion control plan, and guidance on selection of measures.
- The Sedimentation Education Specialist was invited by Scotland County Schools Career and Technical Education Department to participate in Career Day. The event brought together students with interest in various career pathways within eight program areas: Agriculture, Business & Information Technology, Career Development, Family & Consumer Science, Health Science, Marketing, Technology, and Trade & Industrial Education. The event allowed the opportunity to meet a diverse student body consisting of over 1700 high school freshmen, sophomores, juniors, and seniors as well as 8th grade students from three area middle schools.
- The Sedimentation Education Specialist participated in the Area VII Envirothon, which was held at Raven Rock State Park in Lillington, NC. The mission of the Envirothon is “to develop knowledgeable skilled and dedicated citizens who have an understanding of natural resources and are willing and prepared to work towards achieving and maintaining a balance between the quality of life and the quality of the environment.” Teams of middle and high school students, across the region, came together for an ecology field day/competition. Five

member teams are tested on their knowledge of natural resources in the following subject areas: Wildlife, Soils, Forestry, Current Environmental Issues and Aquatics. The top middle school and high school teams from each area Envirothon qualifies for the statewide NC Envirothon. The winning teams receive a trophy and a check to be used toward travel expenses to the state competition.



Figure 3: Students listen to the aquatics instructor discuss water quality and the water filtration process.



Figure 4: Students collaborate on questions designed to evaluate their comprehension of aquatics.



Figure 5: Middle School First Place Winners: "The Knights." The overall middle school winners received a team trophy. The team qualified to compete in the State Envirothon Competition at Cedarock State Park in Burlington, NC on April 24-25, 2015.



Figure 6: High School First Place Winners: "The Peaches." The overall high school winners received a team trophy. The team qualified to compete in the State Envirothon Competition at Cedarock State Park in Burlington, NC on April 24-25, 2015.

- The Sedimentation Education Specialist participated in the West Pender Middle School career fair. The event is intended to help students to start generating ideas about the occupational possibilities that are available. The Career & Technical Education teacher invited various companies that represent all of the career clusters identified by the United

States Department of Education. There were approximately 54 professionals present for the event. The students had the opportunity to explore displays, and ask questions about the industries represented. Students were able to speak with representatives to get a better understanding of the educational requirements for various career fields.



Figure 7: Evangelyn Lowery-Jacobs (NCDEQ-LQS) talks with an eighth grade student at West Pender Middle School about the importance of erosion and sedimentation control and their effects on the environment.



Figure 8: West Pender Middle School staff member and Evangelyn Lowery-Jacobs (NCDEQ-LQS) discuss various environmental education curriculum resources available for hands-on lessons to increase students' environmental awareness.

- Involved in development of a power point presentation to be used for employee/public training sessions, discussing the agricultural and forestry exemptions of the Sedimentation Pollution Control Act of 1973. The Education Specialist presented this information on exemptions at the spring 2015 Erosion and Sedimentation Control Design Workshops in Asheville and Raleigh. Various project scenarios were shared with the audience to ensure accurate interpretation of the exemptions.
- Answered public information requests, ordered publications, and organized educational functions. The Sedimentation Education Specialist responded to numerous emails with information requests.
- Collected and analyzed information request data by date, county, region and river basin.
- The Sedimentation Education Specialist is responsible for updates to the Erosion and Sedimentation Control Program website. The Education Specialist has been authorized to update the DEMLR website, as necessary, to ensure availability of essential information. In response to the division policy review, efforts are underway to update content on the public and employee website with the most current documents available.
- Numerous delegated Local Programs, private and public information requests were fulfilled via email and telephone inquiries. Sediment information packets are disseminated by mail, upon request. The Sedimentation Education Specialist is responsible for managing the

monthly activity reports, and maintaining the IBEAM/AMANDA database information regarding the erosion control programs of the local governments. Follow-up is conducted with the local program staff in response to any inquiries related to those submittals.

- Served as staff to various committees such as the Sedimentation Control Commission, Sedimentation Education Committee, Technical Advisory Committee (TAC), and 319 Non Point Source Workgroup to promote environmental education and erosion and sediment control training. Responsible for organizing meetings and recorded minutes for committee meetings.
- The Sedimentation Control Commission approved a resolution regarding increasing the fee for the review of erosion and sedimentation control plans as approved in the Sedimentation Control Act. The amendment to the SPCA did not pass the General Assembly but efforts will resume at a later time to achieve the necessary fee increase, as recommended in the October 1, 2013 report to the Environmental Review Commission and in the Sedimentation Control Commission's March 2014 study group fee analysis report.
- Evaluated the FY2015 319 Incremental Grant proposals, and rankings were submitted on June 29 for review by the Division of Water Resources. The pre-interview for the NPS Workgroup was held on July 20, 2015 in the Archdale Building (Room 1109N) to discuss the proposals, and potential questions for the applicants. The interviews for finalists were held on July 29, 2015.
- The sediment education program logged calls from the toll free STOPMUD hotline. Collected data was analyzed. Complaints were referred to the appropriate regional office for investigation. Follow-up is conducted by the regional offices with the complainant in response to any inquiries regarding the field investigation.
- Supported interagency relations by coordinating with the NC Department of Transportation (NCDOT) and NC State University Water Resources Research Institute (WRRI) to organize training sessions for the erosion and sedimentation control planning and design workshops. Coordination with NCDOT to gain knowledge of various new technology skimmer devices, and their effectiveness on transportation projects throughout the state. The Education Specialist also coordinated with WRRI to organize design workshops and educational training opportunities for the Land Quality Section.
- Provided input on format and content of website upgrades to conform to state standards. The sedimentation education specialist is continuously working to update the division website. Access has been granted to allow staff authority to update the website, as necessary, to ensure availability of essential information.

The Sedimentation Education Specialist participated in meetings with the Director of Internal Communications to discuss the website migration and web design for the Department of Environmental Quality. Discussed new requirements for website postings, and potential training opportunities for staff involved with website maintenance.

- Submitted paperwork and managed two contracts for sedimentation education projects: “Support for Four Workshops to Train Design Professionals,” and “Support for Annual Workshop and Awards Luncheon for Local Programs.” Managed workplan, quarterly reports, invoicing, and funding for Sedimentation Education Specialist position. Quarterly reports and invoices were submitted for September 30, 2014, December 31, 2014, March 31, 2015, and June 30, 2015. The final report for FY2014-2015 was also submitted to the Division of Water Resources.
- In response to N.C. General Statute §150B-21.3A *Periodic review and expiration of existing rules*, the Sedimentation Education Specialist was involved in preparation of the Existing Rule Review Report, and preparation of documents for posting on the Office of Administrative Hearings website to start the public comment period.
- The Sedimentation Education Specialist participated in a webinar training session on January 8, 2015, regarding implementation of the new DEQ NCVIP, which will be adopted by agencies statewide. DEQ is one of the agencies involved in launching the pilot program for the electronic performance management plan. A demonstration was conducted with the new program to assist staff in creating 2015 work plans.
- The Sedimentation Education Specialist participated in the Land Quality Section Regional Engineers/Program Specialist Meeting on November 17-18, 2014. The focus of the meeting was to discuss recent changes in procedure for the various programs within DEMLR.
- The Sedimentation Education Specialist attended a training opportunity, “DEQ-EPA Advanced Inspector Course,” at Wake Law Enforcement Training Facility on October 7-9, 2014. This three-day course is for inspectors and attorneys. The course focused on good investigation skills. Some of the topics covered include: project planning, interviewing skills, preservation of evidence, field notes, how to be an effective witness, and access to private property. The course was interactive with group practical exercises and included an on-site inspection field exercise at AW North Carolina in Durham.
- The Sedimentation Education Specialist participated in a Southeast Stormwater Association (SESWA) webinar training session on July 31, 2014 entitled, “Successful Public Education and Outreach Programs.” The session provided helpful tools for evaluating the education program, and suggestions for reaching the target audience.
- The Sedimentation Education Specialist attended a training opportunity for DEMLR staff in Raleigh on July 23-25, 2014 regarding the AMANDA mobile technology. The mobile application was launched by inspectors in late August 2014.
- The Sedimentation Education Specialist participated in an online training session, “Be A Hazard Hero,” on July 18, 2014. The focus of the training was hazard recognition with the goal of reducing workplace injuries and workers’ compensation costs.
- The Sedimentation Education Specialist participated in an online training session, “North Carolina State Employees’ Safety & Health Handbook,” on June 24, 2015. The focus of the

training was to give employees a firm understanding of the State's concern for protecting its employees from job related injuries or illnesses, and to inform and educate employees in areas of preventive safety and health.

- The Land Quality Section (LQS) has implemented a new online database for the Erosion and Sedimentation Program. The Department of Agriculture and Consumer Services (NCDA&CS) and the Department of Environmental Quality (NCDEQ) were selected to pilot the AMANDA based Enterprise Certification Licensing Inspection and Permitting System (ECLIPS). This innovative case management system is able to automate the application review and approval process, as well as the issuance of permits and management of inspections.

ECLIPS will be implemented in three phases. The first phase for the AMANDA based ECLIPS, "Back Office," came online June 23, 2014. "Back Office" will allow the LQS to review, inspect, and issue correspondence to the applicant, through one electronic system. The second phase of the AMANDA mobile application was launched in late August 2014. Inspectors will be able to inspect and enter that information into computer tablets. In the future, once data entry is complete, the system will allow immediate email of the inspection report to the financial responsible party, and automatically update the database to near real-time information.

The third phase will be the "Web Portal," which will be launched early 2016. This phase will allow the applicant to upload drawings, calculations, and other information to the web site, and also process payment. Use of the portal should reduce the amount of hard copy plans submitted for an erosion control permit. The system will allow the applicant to track the project application process. The portal will also allow the delegated Local Programs to submit monthly activity reports to the LQS via the web.

ADDITIONAL OPPORTUNITIES/FUTURE INITIATIVES

- Produce additional revisions to the *Erosion and Sedimentation Control Planning and Design Manual*. Also complete revisions to the *Field Guide* and *Inspector's Guide* to reflect updates in the *Erosion and Sedimentation Control Planning and Design Manual*.
- Produce revisions to the Erosion Patrol curriculum for 3rd through 5th grade.
- Coordinating education efforts with the Natural Resource Conservation Service and Division of Soil & Water, and the Sedimentation Education Committee regarding converting erosion and sedimentation educational materials into Spanish and various multimedia applications.
- Develop new brochures for local programs on how to submit a good E&SC plan.
- Develop new display material.
- Work with the stormwater program to resolve turbidity and storm water management issues.
- Notify field staff and educate public on new legislation and revisions to the Sedimentation Pollution Control Act.
- Continue to educate public on the recent merger of the stormwater permitting

program with the Land Quality Section (LQS).

- Educate the public on the new online database for the Erosion and Sedimentation Control Program. The AMANDA based Enterprise Certification Licensing Inspection and Permitting System (ECLIPS) will automate the application review and approval process, as well as the issuance of permits and management of inspections.
- Modify education project priorities according to new legislative funding mandates, including an ability to fund research in the future with allocated education funds.
- Increase outreach and public service through sedimentation education programs.
- Development of the proposed practice standards and specifications for stream restoration for inclusion in the “North Carolina Erosion and Sedimentation Control Planning and Design Manual.”

Significant Challenges/Unaddressed Issues

- The most significant challenge the LQS continues to have is its staffing level. Only one full-time staff person (the section 319 Sediment Education Specialist position) is dedicated to education, technical training and research. High outputs are continuing to be required of fewer staff.
- The SCC and LQS have activities for elementary and middle school students. A high school curriculum needs to be developed.
- Create public service announcements (TV, radio, and billboard) about the Sedimentation Pollution Control Act. Produce video/DVD publication for general public education.
- Educational modules for the Green Dozer Contractor program and training modules for instructors have been revised. The presentations, and possibly video components, may need to be added to the website.
- Website upgrades need to be undertaken to make more information readily available to the public. This may include a more non-technical section of information for laypeople, as well as training/installation videos for professionals.
- Continue research funding for projects such as new statewide vegetation/native grasses specifications and improved design efficiencies for erosion control measures.

Resource Needs

- Funding to contract with NCSU Sediment and Erosion Control Research and Education Facility to perform controlled research on the effectiveness of various best management practices and to test erosion control products. Then, present the results in field training seminars.
- Staff and funding for the production of a pocket field guide for erosion and sedimentation control.

In summary, the North Carolina Sedimentation Education program strives to meet two main non-point source objectives of the EPA: to protect water quality and to educate the public on the harm that is caused by uncontrolled soil erosion and stream sedimentation and effective ways to prevent non-point source pollution from sedimentation.

D. North Carolina Division of Soil and Water Conservation Department of Agriculture and Consumer Services

BACKGROUND

The Non-Point Source Programs Section of the Division of Soil and Water Conservation (DSWC) works with the 96 Soil and Water Conservation Districts (districts) representing 100 counties across the state to administer effective, targeted conservation programs to meet local natural resource conservation needs. The primary delivery systems for this work include the cost share programs: the NC Agriculture Cost Share Program (ACSP), the state funded portion of the Conservation Reserve Enhancement Program (CREP), the Community Conservation Assistance Program (CCAP), and the newest conservation program, the Agricultural Water Resources Assistance Program (AgWRAP).

The section also delivers targeted programs for special concern watersheds. The NPS section is responsible for coordinating the agricultural rules for the Neuse River Basin, Tar-Pamlico River Basin, Jordan Lake and Falls Lake nutrient sensitive water strategies and managing two technical staff positions in local soil and water conservation districts in these river basins. The section also helps target financial resources to meet the mandates of regulations adopted by the Environmental Management Commission for these same watersheds. The section is responsible for coordinating the role of soil and water conservation districts in implementing non-point source projects and programs using Section 319, Clean Water Management Trust Fund (CWMTF), and other grant source funds. The section also administers the Swine Buyout Program, which removes active swine operations from the 100-year floodplain. Additional functions of the NPS Section include serving as staff to the Technical Review Committee for the ACSP, the Community Conservation Assistance Program Advisory Committee, the Agriculture Task Force (ATF), and the NC Soil and Water Conservation Commission.

PROGRAM PRIORITIES

Immediate Priorities (2014-2015)

- Continue with implementation/administration of the Agriculture Cost Share Program (ACSP). Complete revisions of the final section of the Cost Share Programs Manual to streamline policy information in one document. Work with districts on program reviews to focus efforts on program delivery, contract administration, and compliance with procedures.
- Continue with implementation/administration of the Community Conservation Assistance Program (CCAP). Continue to implement the job approval authority process to increase technical capacity within the districts. Provide additional guidance and tools to assist districts with BMP designs. Pursue additional funding to increase BMP implementation, technical assistance, and education and outreach.
- Continue with implementation/administration of the Agricultural Water Resources Assistance Program (AgWRAP). Continue to provide training opportunities so that district staffs have the technical resources and knowledge to promote the program and complete water quantity BMPs on agricultural lands across the state.

- Continue with implementation/administration of the Conservation Reserve Enhancement Program (CREP) in the following watersheds: Neuse, Tar-Pamlico, Chowan, White Oak, Lumber, Cape Fear, Yadkin-Pee Dee, Pasquotank, and Roanoke River Basins.
- Continue working with the districts in the Jordan and Falls Lakes watersheds on the rules that affect them.
- Continue funding the section 319 funded NPS planning coordinator position, which helps administer the Impaired and Impacted Streams Initiative. Continue to pursue new sources of funding to assist in its implementation.
- Assist and encourage districts to apply for Section 319, Clean Water Management Trust Fund (CWMTF), and other grants for water quality improvements. Provide information on pertinent natural resource concerns such as 303(d) and TMDL streams, high quality and outstanding resource waters, NC Division of Mitigation Services targeted and local watershed plan areas, and significant natural heritage sites to engage districts in targeted watershed planning.
- Encourage district involvement in the implementation and development of the DWR Basin Water Quality Plans. All districts are required to include a section in their annual Cost Share Programs strategy plans addressing impaired and impacted waters to help district plan for targeting watersheds for BMP funding from all sources including local, state, federal and grants.
- Implement strategies for non-regulatory issues to achieve water quality goals.

Long-Term Priorities (2014 and beyond)

- Continue efforts for better targeting and accountability of publicly funded BMPs.
- Continue efforts to secure additional funding for the Community Conservation Assistance Program.
- Continue to encourage the North Carolina Conservation Partnership between the division, USDA-NRCS, and the SWCDs to promote more progressive participation in watershed planning initiatives.

COST SHARE, BASIN, AND WATERSHED PROGRAMS

Each district establishes their set of priorities annually based upon the natural resource concerns for their geographic bounds. Since North Carolina consists of three distinct physiographic regions, there is considerable diversity relative to programs and program delivery across the state. The traditional Agriculture Cost Share Program, successful now for over a generation (begun in 1983), has a companion natural resource conservation program, the Community Conservation Assistance Program (CCAP). The CCAP is in its ninth year of operation, and the Agricultural Water Resources Assistance Program (AgWRAP) is in its fifth year of operation. The Conservation Reserve Enhancement Program was originally established in 1999 to supplement the Conservation Reserve Program. The Non-Point Source Section of the Division of Soil and Water Conservation is also heavily involved in the Neuse, Tar-Pamlico, Jordan Lake, and Falls Lake basins and watersheds to facilitate and manage agriculture in their mandated nutrient reductions for these important waters. Additionally, the section provides assistance to districts in grant writing and watershed planning activities to help address water quality and natural resource concerns across the state.

NC AGRICULTURE COST SHARE PROGRAM (ACSP)

The North Carolina General Assembly passed legislation in 1983 establishing the NC Agriculture Cost Share Program. Initially counties in the Jordan Lake, Falls Lake, and the Chowan River watersheds were eligible to participate in the program because of their designation as nutrient sensitive waters. By 1989, the program expanded to cover all 100 counties. Since the program's inception, over 55,000 contracts have been signed for conservation practice installation with funds totaling over \$180 million. The ACSP delivery system is also used to employ contracts for EPA 319 funds, Clean Water Management Trust Fund grants, the Drought Response Program, and other special funding projects. The ACSP boasts a robust database that is used to produce maps, BMP installation and funding queries, and other important information needs for the division.

The division establishes priorities of the cost share programs through the allocation of funds. All 96 districts submit a strategy plan yearly that is used to assess the allocation level for that program year. The parameters used for determination of the cost share allocation for each county include: the acres of agricultural land, the percentage of cropland, the miles and acres of impaired water bodies, an average of the best three of the last five years of funds that have been expended, the percent of land area within special use watersheds, the average of the best three of the last five years of encumbered funds, and acres of highly erodible lands. Additional means of allocating funds include using a percentage of the allocation for impaired and impacted streams. This is performed by a survey to the districts where those participating targeted watersheds are included in the 303(d) list or have a notable water quality concern. Based upon the District's response(s), funds are allocated specifically to those districts for cost share practices in those watersheds.

North Carolina has three distinct physiographic regions, the coastal plain, piedmont, and mountains, interspersed with transitional areas. The ACSP has changed over the years to capture these regional differences and to make the implementation of BMPs more accommodating to the clients it serves. The map on the following pages provides a visual reference to the effects the program has regarding the variances of the pollution problems recognized due to geographic influences across the state. The eastern region of the state applies more BMPs whose purpose is to reduce sediment/nutrients and erosion/nutrients while the mountain region tends to apply more stream protection practices. The piedmont region transitions both sets of practices. While, in general terms, all practices are implemented statewide, the map shows the influence of the physiographic regions on pollution problems, and subsequent BMP implementation, across the state.

Measurable Results: Below is information regarding the effects the NC Agricultural Cost Share Program has had as it relates to water quality efforts across the state for the timeframe of October 1, 2014 – September 30, 2015.

**Measurable Results from BMPs Installed Using ACSP
and Other Funds Tracked Through the ACSP Database**

Purpose of BMPs	Acres Affected	Nitrogen Saved (lbs)	Phosphorus Saved (lbs)	Soil Saved (tons)	Waste N Managed (lbs)	Waste P Managed (lbs)
Erosion/Nutrient Reduction	18,344	281,490	141,751	43,854	762,659	665,411
Sediment/Nutrient Reduction	7,292	47,869	14,573	8,495	49,601	51,525
Stream Protection	10,681	34,925	36,869	2,389	45,449	42,931
Waste Management	4,151	11,611	85,262	72	828,555	872,113



A livestock watering facility in Henderson County (left) and a livestock exclusion system in Chatham County (right).

CONSERVATION RESERVE ENHANCEMENT PROGRAM

North Carolina’s original Conservation Reserve Enhancement Program (CREP) was established in 1999. CREP is now available to qualified landowners from the coast to the Yadkin/PeeDee Basin. The State Incentive Program offers long-term protection for landowners by providing the opportunity to enroll environmentally-sensitive cropland or marginal pastureland in 30-year or permanent conservation easements. CREP has been implemented in North Carolina for 15 years, enrolling more than 27,062 acres in easements and protecting approximately 744 stream miles.

It has been a goal of CREP to increase permanent easement enrollment. In 2008, the payment schedule was modified by including an option to allow existing enrollees to upgrade their existing term contract and easement to a permanent easement. In PY15, 106 acres were upgraded from 30 year to permanent easements. Pasture owners have expressed an increased interest in CREP and the benefits it can provide to their operation. Owners indicated a willingness to protect water quality by establishing permanent riparian buffers in order to receive up to 100 percent cost share benefits for installing fencing, watering facilities and stream crossings.

NC COMMUNITY CONSERVATION ASSISTANCE PROGRAM (CCAP)

As a companion program to the NC Agriculture Cost Share Program (ACSP), the Community Conservation Assistance Program (CCAP) is designed to improve water quality through the voluntary installation of various best management practices (BMPs) on developed lands not directly involved in agricultural production. In its ninth year of funding, 73 soil and water conservation districts requested funds to install rain gardens, cisterns, stream restoration projects, and other conservation practices. During the eight-year program, 86 districts have participated in CCAP.

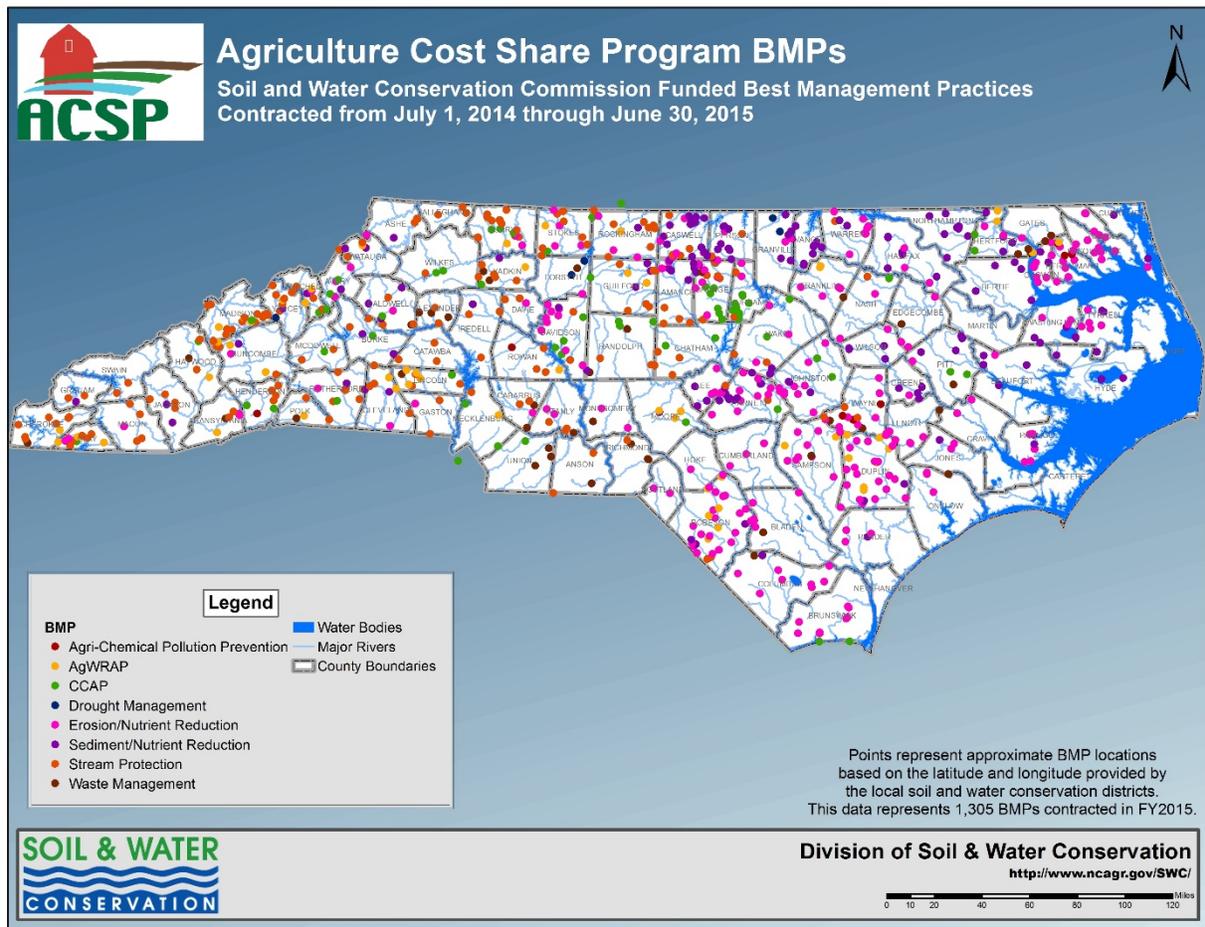
PY2015 funding was comprised of \$200,000 of state allocated funds (with approximately \$138,000 going toward BMP implementation and the remainder in salary and technical assistance). Other sources of funding included the NC Environmental Enhancement Grant (NC EEG) and several other watershed specific 319 grants. District demand for CCAP continues to far exceed the current funding levels. The 73 participating districts requested over \$1.99 million and were allocated a total of \$294,539 (including funds from cancelled or expired contracts).

Obtaining grant funds for the program are proving to be challenging. A significant source of previous grant awards, CWMTF, has had a significant change in their program authority and CCAP statewide projects no longer qualify for these funds. Additionally, other sources have seen significant reductions and/or changes in program authority. Other sources will continue to be sought, but funds will likely be delivered through watershed-scale projects in conjunction with other water quality practices. The program has experienced increased interest, however, along with a few new practices targeted for coastal waters.

Photos of a stream stabilization in Transylvania County (left) and a stormwater wetland in Alexander County (right).



Map showing the location of NC Soil and Water Conservation Commission projects implemented from October 1, 2014 – September 30, 2015



NPS PLANNING COORDINATOR

The main responsibility of the NPS Planning Coordinator is to facilitate nutrient load reduction from agriculture to meet the goals established in the Neuse, Falls Lake, Jordan Lake, and Tar-Pamlico agricultural rules. In addition to helping local entities meet these goals, this position is responsible for developing the annual agriculture reports for the Environmental Management Commission (EMC) that are required by the rules. This individual works closely with the NC Soil and Water Conservation Districts, the Natural Resource Conservation Service (NRCS), EPA, the Division of Water Resources (DWR), and other divisions within the Department of Environmental Quality (DEQ) to promote and implement water quality efforts in the Neuse and Tar-Pamlico river basins and the Jordan and Falls Lake watersheds.

Nutrient reduction accomplishments in the Basins below were calculated by estimating nitrogen reduction using the NLEW (Nitrogen Loss Estimation Worksheet) software. Reductions are attributed to fertilization rate decreases, cropping shifts, BMP implementation and reduction in cropland acreage.

- Tar River Basin: Baseline nitrogen edge of field loss in 1991 was approximately 38.9 million pounds. Nitrogen edge of field loss for 2014 was approximately 18.9 million pounds, which represents a 51% loss from the baseline. The goal for nitrogen loss as set forth in the Tar-Pamlico Agriculture Rule was 30%.
- Neuse River Basin: Baseline nitrogen edge of field loss in 1991-1995 was approximately 42.0 million pounds. Nitrogen edge of field loss for 2014 was approximately 23.5 million pounds, which represents a 46% loss from the baseline. The goal for nitrogen loss as set forth in the Neuse Agriculture Rule was 30%.
- Falls Lake Watershed: Baseline nitrogen edge of field loss in 2006 was approximately 1.2 million pounds. Nitrogen edge of field loss for 2014 was approximately 628,000 pounds, which represents a 46% loss from the baseline. The goal for nitrogen loss as set forth in the Falls Lake Agriculture Rule was 20%.

The NPS Planning Coordinator is also responsible for coordinating and administering the Impaired and Impacted Streams Initiative earmark of the Agriculture Cost Share Program. In addition, the coordinator administers grants, including a 319 project that funds equine conservation practices in the Falls Lake Watershed, a 319 project that funds best management practice implementation in Caldwell, Chatham, Cabarrus, Henderson, and Haywood Counties, and a 319 project that funds the coordinator position.

WATERSHED PROJECTS

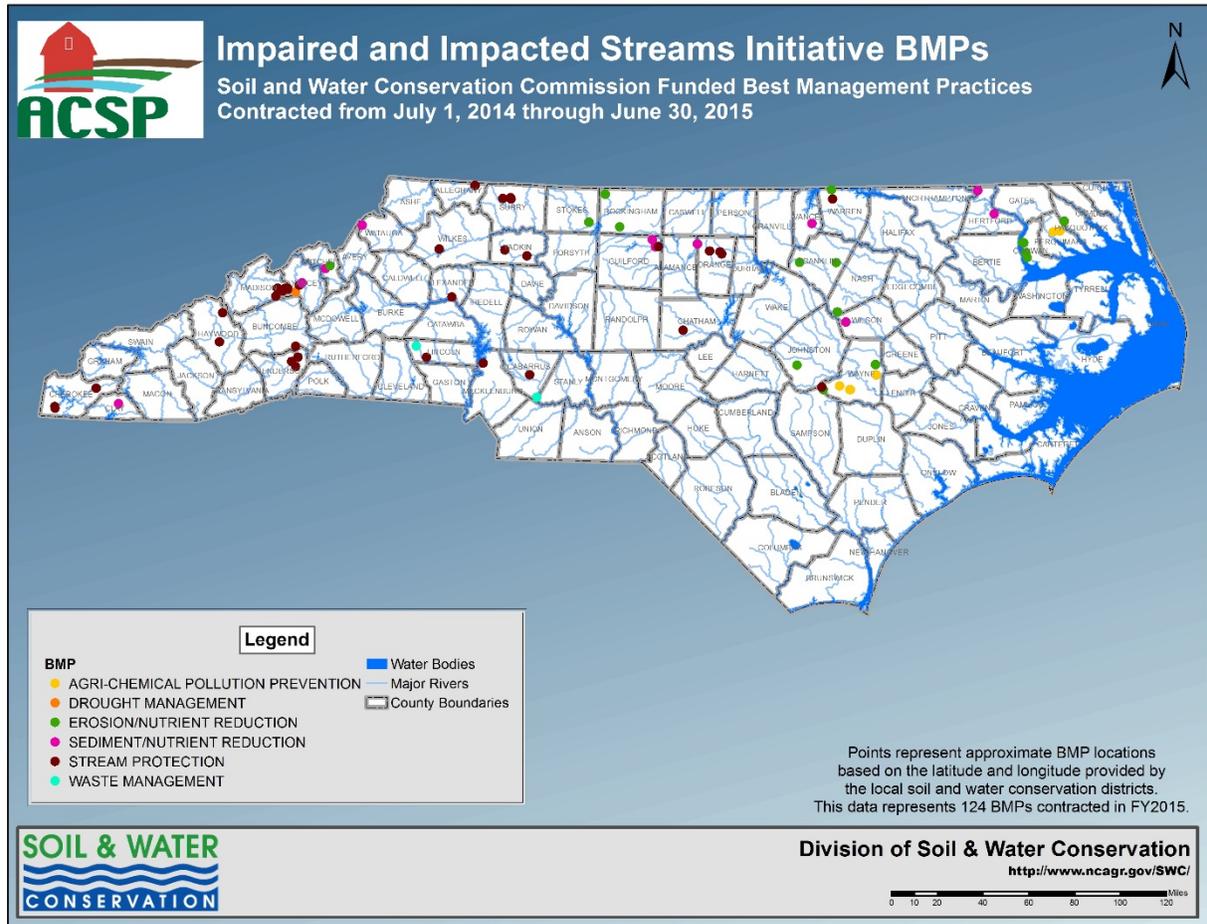
The division supports the 96 soil and water conservation districts across the state in identifying and assessing water quality areas of concern on a watershed and sub-watershed scale. The assessments are based on known water quality issues that may be communicated in the basin plans, the 303(d) and 305(b) Integrated Reports, monitoring data from Division of Water Resources (DWR), during general discussion with DWR staff, through the Impaired and Impacted Stream Survey (IISS) conducted by district staff, and other means.

There is a strong history of DWR and DSWC cooperation in working toward solving water quality issues. Dating back to the late 1970's, the two agencies have worked together to identify water quality issues, assess the sources of impact and impairment, develop a course of action to address the issues, and worked toward finding available resources with which to address those issues. The 1980's saw the advent of the NC Agriculture Cost Share Program (ACSP), a source of funding dedicated from the NC General Assembly for the implementation of BMPs on agricultural lands.

The 1990's and early 2000's brought the Agricultural Sediment Initiative. This program was developed during discussions with the Sediment and Erosion Control Commission, the Soil and Water Conservation Commission, and DWR personnel. It focused efforts, both financial and personnel, toward those watersheds where known sediment from agricultural lands were causing water quality problems. This initiative morphed into the Impaired and Impacted Stream Survey (IISS), a tool used today to identify both 303d listed streams along with those that are not yet listed but the local districts identify as having water quality issues. Funds from the ACSP are dedicated to districts that submit a survey outlining the assessments they have completed in these

watersheds. The assessment measurements include financial and personnel needs that would be necessary to implement best management practices within those identified watersheds. For the 2015 fiscal year, 35 districts requested over \$1.9 million in IISS funds. A total of \$499,979 was allocated from the ACSP funds to address water quality issues in these targeted watersheds. From October 1, 2014 through September 30, 2015, 124 BMPs were installed with IISS funds.

Map showing the location of NC Soil and Water Conservation Commission projects implemented with Impaired and Impacted Streams Initiative earmarked cost share funds from October 1, 2014 - September 30, 2015



FUTURE OPPORTUNITIES – NPS SECTION

- Meeting and maintaining the nitrogen and phosphorus reduction goals set for the Neuse and Tar-Pamlico river basins, and Falls Lake and Jordan Lake watersheds.
 - Complete web version of the Nitrogen Loss Estimation Worksheet to assist with annual reporting for agriculture rules in nutrient sensitive waters strategies.
 - Continue to refine procedures for data collection and analysis to make up for the loss of funding for technicians
 - Train district staff to more readily assume responsibility for annual reporting
- Provide support to the ACSP Technical Review Committee, the CCAP Advisory Committee, the AgWRAP Review Committee, and the Soil and Water Conservation Commission to improve existing BMPs and develop new nutrient reducing BMPs.
- Utilize GIS capabilities to target areas of the state to more effectively address non-point source pollution.
 - Continue to serve on the Watershed Restoration and Improvement Team (WRIT) with water quality professionals from across North Carolina
 - Continue to work with NRCS and DWR in synchronizing the prioritization of small watersheds (HUC12s) for implementation funding.
- Continue working with districts on program reviews, job approval authority, Commission Cost Share Program Manuals, and other training mechanisms to enhance program delivery systems.

RESOURCE NEEDS – NPS SECTION

- Continued 319 funding or permanent legislative funding for the NPS planning coordinator.
- Additional funding for a Neuse/Tar-Pamlico Basin Coordinator
- Additional funding allocations for implementation of the Neuse, Tar-Pamlico and Jordan Lake and Falls Lake Rules.
- Additional funding for basin technicians to assist with implementation of NSW agriculture rules.
- Additional funding for targeted watershed projects
- Additional funding sources for the Community Conservation Assistance Program.
- Additional funding for the Agriculture Cost Share Program.
- Additional funding for the Agricultural Water Resources Assistance Program.

E. North Carolina Division of Water Resources

1. *Basin Planning*

BACKGROUND

The former North Carolina Division of Water Quality (DWQ) initiated basinwide planning in 1990 to allow better coordination and integration of all water quality program activities. Water quality and aquatic resources data are assessed for an entire river basin, leading to the development of Basinwide Water Quality Plans, which capture and recommend management strategies and initiatives. A major thrust of the basinwide approach is to bolster efforts to restore streams impaired by nonpoint source pollution.

The Basinwide Planning Program finalized the first five-year cycle of basin plans for the 17 river basins in May 1998. New state legislation approved in 2012 extends the requirements for Basin Plans to a frequency of at least every ten years, which allows staff to focus resources on priority basins and watersheds within basins. In July 2013, the DWQ Basinwide Planning Program merged with the Division of Water Resources Planning Program resulting in an integrated planning process which includes a basin assessment of both water quantity and quality issues.

This report documents activity related to basinwide planning for October 1, 2014 through September 30, 2015.

PROGRAM PRIORITIES

1. Development of comprehensive water resources river basin plans that evaluate water quality and water quantity conditions for each of the state's major river basins. Basin plans integrate the results of resource monitoring with water use and availability modeling in each river basin.
2. The program provides support for, and interpretation of, departmental programs addressing water resource modeling, water supply watershed protection, use support assessment, wetlands restoration planning, groundwater management, public water supply, planning and development, drought monitoring and response, point and nonpoint source pollution control and other water resource focused programs.
3. Promotion of public understanding and involvement in water quality and quantity initiatives.

BASINWIDE PLANNING IMPLEMENTATION ACCOMPLISHMENTS

Basinwide planning is integral to the Division of Water Resource's programs. Every activity conducted within DWR is part of basinwide planning, in that, monitoring, assessment, reporting and implementation of management strategies and programs are all incorporated into the final basin plans directing the division's forward progress.

DWR's River Basin Planning staff are frequently involved with and initiate the following endeavors:

- Preparing comprehensive water resource plans for the state's 17 river basins that collectively describe the overall state water resource planning efforts;
- Coordinating with other Division and Departmental water resource programs to assure proper integration of all relevant programs in the development of the basin plans;
- Obtaining modeling and data analysis support to assure water quality and water quantity data are available for timely basin plan development;
- Coordinating basin plan objectives and activities with the Regional Offices;
- Providing technical review and comments on environmental documents;
- Evaluating impacts to ecological and biological integrity resulting from changes in water quality and water flows;
- Providing input to the Division on program and policy development involving complex environmental issues identified through the comprehensive water resources planning process;
- Providing support for the implementation of Environment Management Commission approved recommendations in the basin plans to increase water resource protection, water security and reliability, protect and improve ecological integrity, and ensure fishable, swimmable, and drinkable waters.
- Preparing draft plans for public review. The development of the Basin Plans involves identifying watershed level water quality problems and potential solutions through internal and external stakeholder data review. This activity entails conducting data analysis, syntheses of trend and model reports and formulating recommendation for implementation of internal management actions or restoration activities. The public review process involves meeting with various interested stakeholders to gain additional input and review, editing the plan to reflect the comments as needed, and conducting final preparation of the plan for approval by the Environmental Management Commission.
- Providing basinwide information to applicants for Clean Water Management Trust Fund and Sections 319 and 205(j) grants to assist with targeting restoration and protection activities to impaired and high quality waters. Basin planners also provide technical reviews of project proposals as well as on funded projects to ensure successful implementation.
- Coordinating with the Classifications & Standards Unit and other federal and state agencies to develop management strategies for threatened and endangered species per state rules.

- Coordinating with river basin coalitions and watershed groups to identify high priority waters and issues of relevance to those groups, and identify potential means to address the issues. This activity entails providing technical assistance and guidance on water quality initiatives developed and implemented at the local level.
- Coordinating efforts within the Division to develop a GIS based prioritization tool that will help guide more efficient and effective watershed restoration, monitoring, and protection efforts across the state. The tool may be used to identify priorities for the next 319 grant request for proposals (RFP), and will be made available for use by our partners and other agencies. The prioritization tool will continue to be updated and adjusted periodically to ensure the latest data is being used and priorities are accurately listed.
- Participating as Division representative for development of Coastal Habitat Protection Plan
- Continuing to improve presentation and delivery of basin plans to interested parties and users of Basin Plans. Continuing to explore GIS applications, other software and modeling tools, as well as methods for data analysis and trend analysis, for use in plan presentation and delivery.
- Ongoing solicitation of water quality information from outside sources via email, meetings, list serve announcements and website. Increase electronic communication instead of onsite meetings.
- Over last year, completed an integrated Tar-Pamlico River Basin Plan was the primary focus. Basin Plans are available here for download by <http://portal.ncdenr.org/web/wq/ps/bpu>. Work was done across all 17 river basins but because of the ten-year rotating basin cycle, some basins received more attention during the year.
- Coordination of the French Broad River Basin Plans has been coordinated from the regional office located in Asheville during this period, for increased exposure and access to the local watersheds and watershed stakeholders.
- Stakeholders provide watershed information that is pertinent to protecting and enhancing water quality throughout each basin. Stakeholders involved in current and emerging basin water quality issues have included: Upper Tar Collaborative, Tar-Pamlico Basin Association (discharger coalition), Division of Soil and Water Conservation, Agriculture Task Force Committee, Greenville Flow Study Technical Advisory Group (TAG), Tar-Pamlico River Basin Water Resources Plan TAG, and East Carolina University, Toe River Valley Watch, Blue Ridge Resource Conservation and Development, U.S. Fish & Wildlife Service, county and town governments, local businesses and industries such as the Unimin and QuartzCorp mining companies, Mills River Partnership, Black Creek Watershed Association, Rocky River Management Team, Cape Fear monitoring and modeling workgroup, Cape Fear River Partnership, Tick Creek watershed planning, Great Coharie watershed planning, and Smith Creek watershed planning, Watershed Association of the Tuckasegee River; Hiwassee River Watershed Coalition, Land Trust for the Little Tennessee, Jackson-Macon Conservation Alliance and other federal, state and local agencies as well as other technical and advisory groups.

E. North Carolina Division of Water Resources

2. Groundwater Programs

BACKGROUND

The Division of Water Resources protects groundwater quality by managing wastes discharged to the surface, establishing groundwater quality standards for protection of the groundwater resource, and monitoring the quality of groundwater to determine resource protection needs. Major nonpoint source goals of the state groundwater protection program are to protect surface water from contaminants by preventing runoff of wastes to surface water, and to manage nonpoint source pollution of groundwater.

Recent experience in North Carolina shows that groundwater may be a significant contributor to impairment of surface waters, and that new information and new management strategies are necessary to advance watershed restoration efforts in certain watersheds. For example:

- The Neuse Nutrient Sensitive Waters Management Strategy in the Neuse Basinwide Plan (DWQ, 2009) indicates that groundwater may be a significant pathway of nutrient loading to the Neuse Estuary but that loading from groundwater sources is not being captured in the overall nutrient accounting process. The Neuse NSW Management Strategy calls for efforts to characterize the potential for groundwater contamination and transport of nutrients from biosolids and wastewater land application fields to the surface waters of the Neuse River basin.
- The Science & Technical Advisory Committee of the Albemarle-Pamlico National Estuary Program has advocated the establishment of watershed-specific groundwater standards which consider the effects of downstream loading and pumping withdrawal to protect surface water quality for aquatic and terrestrial life, not just human health (http://www.apnep.org/pages/stac_papers.html).
- Land-applied residuals and wastewater have been documented to be discharging nutrients to nutrient sensitive waters in at least one example in North Carolina, and the magnitude of this discharge has been estimated through detailed studies. Other instances are known or suspected to be occurring, even at well-managed facilities; however, the number and magnitude of these occurrences is unknown.
- In addition, nonpoint source pollution from past and present agricultural activities has contaminated groundwater in several areas of North Carolina, impeding the use of groundwater as a source of drinking water.

Without specific knowledge of the role of groundwater as a contributor to watershed impairment, it is not possible to develop the management strategies or other actions that may be necessary in order to implement effective watershed restoration plans.

PROGRAM PRIORITIES

Through a combination of 319(h) funding, state appropriations, and receipts, DWR implements a robust program for management of nonpoint source pollution, including:

- Permitting, compliance, and enforcement activities for land-applied wastewaters and residuals

- Characterization of NPS loads and NPS pollution to improve NPS management strategies
- Investigation of NPS contamination and development of watershed restoration strategies
- Rulemaking and similar efforts to develop better management strategies
- Development and maintenance of groundwater information systems and tools required to develop more effective NPS management strategies

HIGHLIGHTS AND ACCOMPLISHMENTS

NPS-related highlights and accomplishments of DWR's groundwater programs for FY2015 are presented here under headings corresponding to the program priorities listed above.

PERMITTING, COMPLIANCE, AND ENFORCEMENT ACTIVITIES FOR LAND-APPLIED WASTEWATERS AND RESIDUALS

In FY2015, the DWR issued 256 permits for land application of wastewaters or residuals, conducted 1,011 inspections of land application facilities, and issued 61 Notices of Violation and assessed 6 civil penalties for land application facilities. In addition, DWR issued 55 permits for concentrated animal feeding operations (CAFOs), conducted 2,364 inspections at 2,091 facilities, issued 32 notices of violation, and assessed 4 civil penalties for CAFOs. Each of these regulatory actions contributed to better control of nonpoint source pollution.

CHARACTERIZATION OF NPS LOADS AND NPS POLLUTION TO IMPROVE NPS MANAGEMENT STRATEGIES

Nutrient Loading Estimates for Animal Operations Land Application:

DWR issues permits for many animal operations that land apply waste as a means of disposal and beneficial reuse. In FY2015 DWR completed a report entitled, *A Summary of Land Applied Nutrients from Livestock Waste in North Carolina*. This report provided estimates for the amount of total nitrogen and orthophosphate applied by animal operation with a permit issued by DWR. This work also identified sources of livestock waste application currently not covered under DWR regulations and presented comparisons to the amount of nutrients applied from other sources, such as chemical fertilizers.

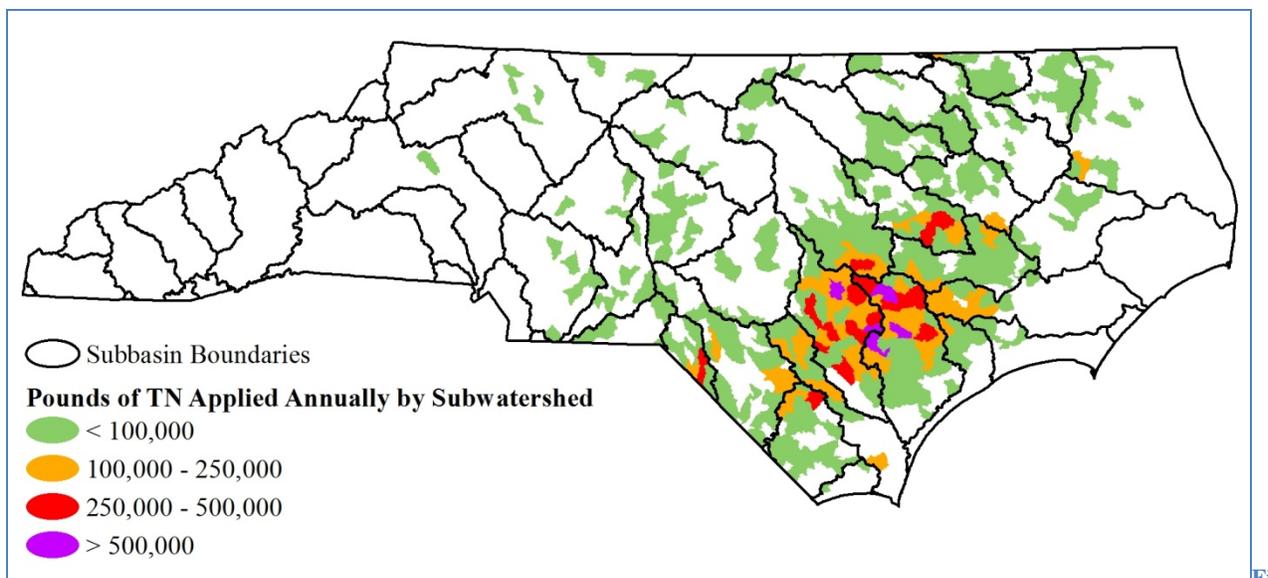


Figure 1. Total nitrogen applied annually by permitted CAFOs by subwatershed

Statewide Estimation of Groundwater Nitrate - In FY2015, DWR continued a partnership with the UNC School of Public Health to support their efforts developing geostatistical methods for characterizing the distribution of nitrate in groundwater. DWR has assisted in this project in FY2015 by providing hydrogeological expertise, reviewing drafts of articles and presentations of the project, and providing programmatic expertise to identify applications of the project to the goals of North Carolina's NPS program and state groundwater monitoring and protection program. IN August 2015, a journal article summarizing the results of this project was published in the journal *Environmental Science and Technology*. The article is available at <http://pubs.acs.org/doi/abs/10.1021/es502725f>.

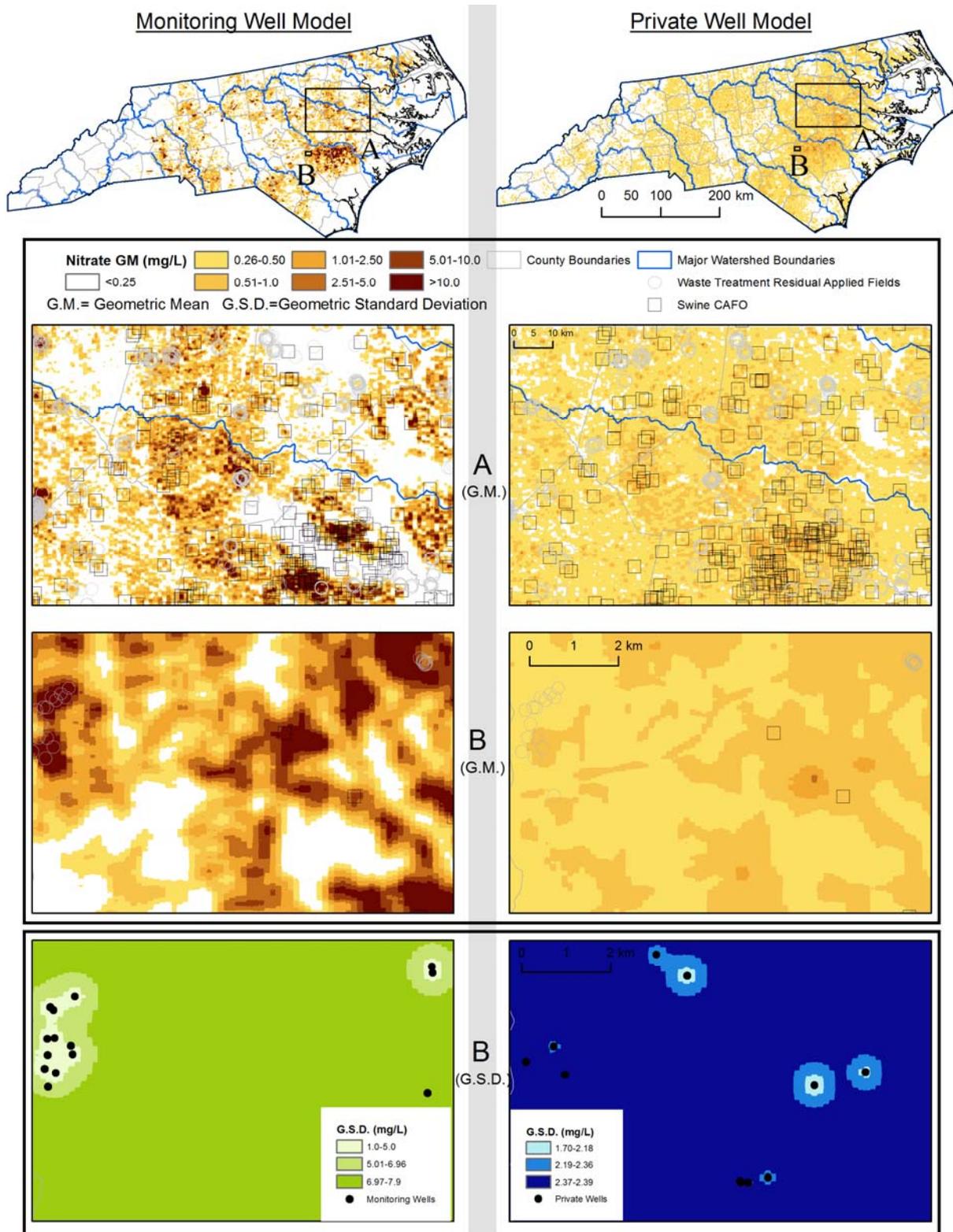


Figure 2. Comparison of land-use regression results between a monitoring-well-based model (left) and private-well-based model (right) for NO_3 concentrations. The extent rectangles shows zoomed in portions of the state and are identical areas for both models. Extent (B) shows geometric mean predictions and then geometric standard deviation. From Messier, K.P., Kane, E.O., Bolich, R.E., and Serre, M.L. 2015. Nitrate variability in groundwater of North Carolina using monitoring and private well data models. *Environmental Science & Technology* 48(18).

The most obvious outcome of this work is maps and GIS layers that estimate groundwater nitrate concentrations across the entire state, as shown above. This work also helps identify spatial variables that have a high correlation to elevated groundwater nitrate. This will help guide decisions for targeted sampling of drinking water wells to protect public health and well siting and sampling decisions for improved ambient monitoring. In FY2015, this data was used in combination with USGS baseflow index data and observed discharges at USGS gauges to enable the estimation of potential groundwater nitrate contribution to surface waters in each gauged subbasin. A GIS tool has been developed for applying this method to any basin within the state. This analysis tool was incorporated into the 2015 Falls Lake rules report along with an extensive literature review of existing scientific studies relating to the influence of nutrient contamination in groundwater's potential effects on surface water quality in North Carolina.

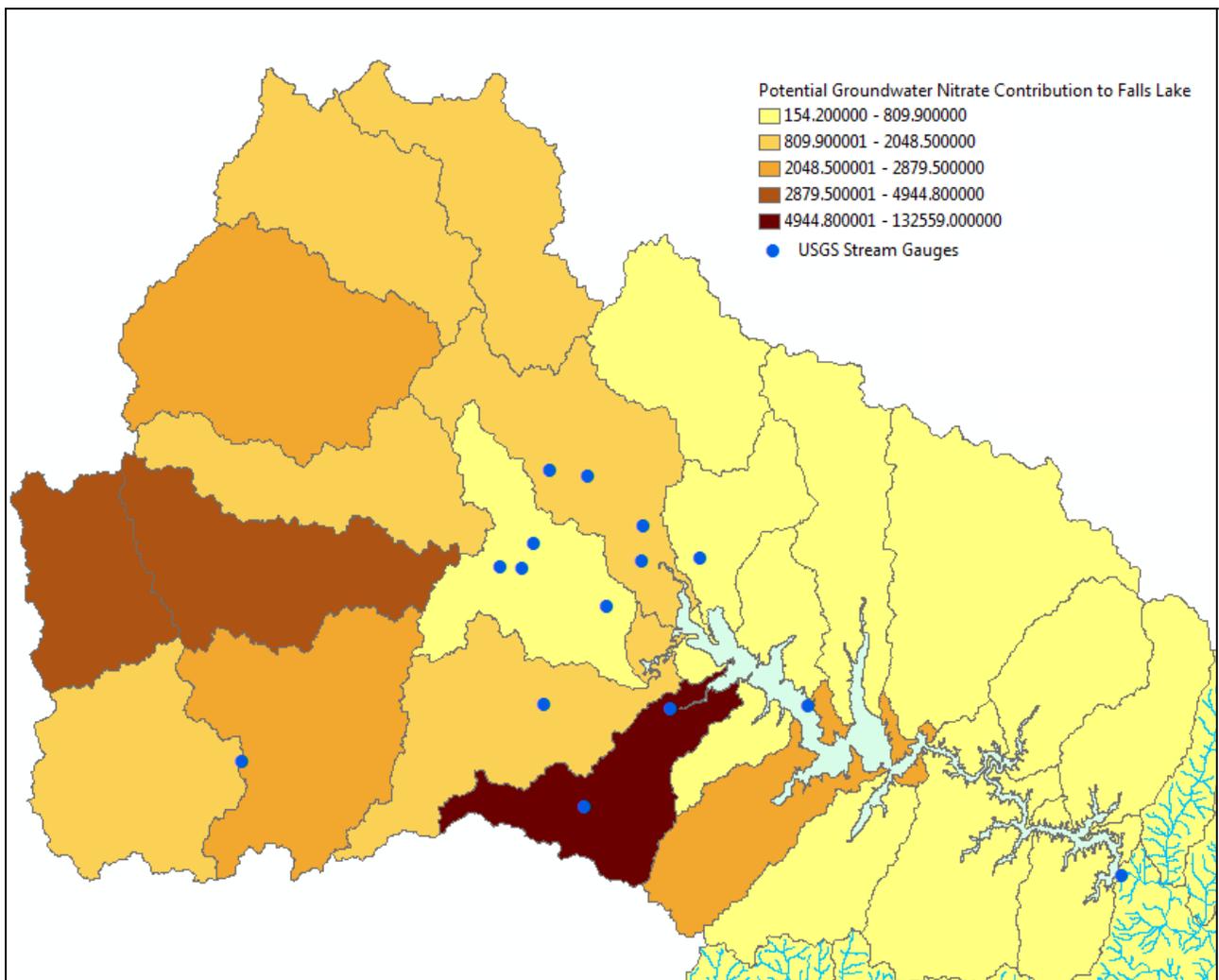


Figure 3. Modelling data from Messier et al. 2014 combined with USGS stream gauge data and baseflow index to estimate the potential contribution of nitrate from groundwater to Falls Lake by HUC-12. Nitrate mass given in kg/year.

INVESTIGATION OF NON-POINT SOURCE GROUNDWATER CONTAMINATION, SURFACE WATER COMPLAINTS, NON-DISCHARGE PERMITS, AND THE DEVELOPMENT OF WATERSHED RESTORATION STRATEGIES

The hydrogeologist II in the Asheville Regional Office (ARO) continues to be involved in investigations of groundwater impacts related to legacy pesticides, nitrate, and metals. The hydrogeologist II is also responsible for investigating groundwater complaints involving private water supply wells and all groundwater monitoring associated with non-discharge wastewater permits. Recent reorganization activities within the Division of Water Resources has expanded the responsibilities of the hydrogeologist II to include surface water complaints as assigned by the regional supervisor. The following are highlights of the ARO hydrogeologist's efforts to address these issues in FY2015.

Groundwater Incidents

Buck Ridge Road (Haywood County) – The hydrogeologist II is currently working with the Haywood County Health Department to determine the source and extent of nitrate-in-groundwater contamination in the Iron Duff Community. A total of 12 private water supply wells have been sampled to date for the presence of nitrate and nitrite. Three water supply wells have been identified with nitrate concentrations above the applicable standard. In the coming year, the hydrogeologist II will continue to monitor the impacted wells and investigate whether nearby septic systems or commercial fertilizers are contributing to the nitrate contamination.

Academy Road (Henderson County) – The hydrogeologist II is continuing to investigate legacy pesticides in the Dana Community. A total of 26 private water supply wells were found to contain dieldrin concentrations above the applicable standard. Fifteen of the contaminated wells contained additional pesticides including: endrin ketone, alpha chlordane, gamma chlordane, endosulfan II, 4,4-DDD, Delta-BHC, and heptachlor epoxide. Evidence suggests that over-application of residential termiticides combined with poor well construction contributed to the groundwater contamination.

The ARO partnered with the City of Hendersonville to extend municipal water to the contaminated area. Funding was provided by the NC Rural Economic Development Center, Bernard Allen Memorial Emergency Drinking Water Fund, and the NC Department of Commerce. Municipal water was offered to 88 residential homes but only 63 connected. The project was completed in early 2015 at a cost \$747,438. The hydrogeologist II will continue to monitor active residential water supply wells near the contamination area.

Pax Hill Road (Burke County) – The hydrogeologist II is working with the Burke County Health Department to determine the source and extent of nitrate-in-groundwater contamination in a new housing development. A new water supply well was found to contain nitrate concentrations above the applicable standard. Residential water supply wells on the border of the development were also sampled for nitrate. Evidence suggests that wastes from a former commercial chicken farm may be responsible for the groundwater contamination. The hydrogeologist II will continue to monitor nitrate concentrations at two water supply wells.

Cope Creek Road (Jackson County) – The Magnolias-on-Cope Creek is a housing development with a shared well between 12 residential homes. A recent water sample for metals identified the presence of hexavalent chromium above a health risk advisory established by the NC Department of Health and Human Services. The hydrogeologist II expanded the investigation to include 8 water supply wells surrounding the homeowners association. Five of the 8 wells contained hexavalent chromium concentrations above the health risk advisory. The presence of hexavalent chromium is still under investigation

Fie Top Road – (Haywood County) – A Maggie Valley homeowner recently contacted the ARO to complain about changes in the quality of their drinking water. Analytical results from their water supply well revealed elevated sodium and chloride concentrations above the applicable standard. Additional samples were collected at two surface water sites and three residential water supply wells. The elevated sodium chloride concentrations along Fie Top Road appears to be related to a nearby road salt pile maintained by the Cataloochee Ski Resort.

Anne Lauder residence (Jackson County) – A Jackson County resident contacted the ARO concerning changes to the quality of her drinking water after a nearby water supply well underwent hydraulic fracturing. Water quality results from the impacted well indicate iron, manganese, sulfate, and zinc concentrations above the applicable standards. The hydrogeologist II will continue to monitor the water supply well until the water quality recovers.

Jimmy Lowery residence (McDowell County) – In the fall of 2003, a metal plating operation had a process water release that inundated an adjoining residential property. The release and subsequent cleanup was not well documented. The resident whose property was impacted recently contacted the ARO with concerns that pets living within the former release area were dying of unknown causes. In the winter of 2014, the hydrogeologist II conducted a soils investigation of the residential property to determine the presence of any harmful contaminants.

Surface Water Complaints

Pine Creek Investigation (Jackson County) – The ARO recently conducted a surface water investigation near Lake Glenville in Jackson County. An investigation was initiated after numerous site inspections documented extensive land clearing activities on several parcels associated with agricultural activities. Stream modification such as lowering the height of the stream bank, removal of riparian vegetation, destruction of existing wetlands, exposure of erodible soils, and the lack of best management practices (BMP's) resulted in extensive erosion and in-stream turbidity violations for Gem Creek and Little Pine Creek; both classified as water supply III streams. A Notice of Violation is being sent to the landowner.

Andy Oxy Company (Buncombe County) – A citizen complaint led to the investigation of a bottled gas company that manufactures acetylene gas using calcium carbide. Calcium oxide or lime is generated as a byproduct of the reaction, which is discharged to an earthen basin with an approximate storage capacity of a 1,000 cubic yards. The lime is eventually dewatered and stockpiled for sale as an agricultural soil amendment. A site inspection documented off-site migration of the lime to a nearby Class C stream. As part of the Notice of Violation, the company is

required to secure the stockpile of lime, assess and remove any off-site lime, and analyze groundwater pH in the vicinity of the earthen storage basin.

CR Brown Enterprises (Cherokee County) – An anonymous complaint led to the investigation of a rendering operation that turns fish waste into an agricultural fertilizer. Fish waste (guts, skin, scales, and bones) from a nearby trout processing facility are brought to the CR Brown Enterprises site and liquefied in a solution of sulfuric acid. The fish emulsion is initially screened for any undissolved tissue or bone. For several years, the unmarketable solid waste was stockpiled on site and the leachate allowed to freely discharge into a shallow lagoon equipped with a discharge pipe to Worm Creek; a Class C stream with a Trout Water designation. Analytical results of the lagoon leachate indicated elevated COD and BOD, elevated concentrations of ammonia and phosphorus, and petroleum-related constituents including toluene, ethylbenzene, and xylene. As part of the Notice of Violation, CR Brown Enterprises is required to cease all land application of process wastes, to immediately cease all discharges of process leachate, and properly dispose of all liquid and solid wastes residing in the lagoon. The ARO is in the process of characterizing the sludge in the bottom of the lagoon.

North Fork Catawba Fish Kill (McDowell County) – On July 1, 2015, the ARO responded to a request from local emergency management to assist in the investigation of a fish kill along the North Fork of the Catawba River. Upon investigation, the ARO staff traced dead fish and amphibians to a stormwater outfall associated with a thread manufacturer known as Coats American. Evidence suggests a release of sodium hydroxide into the storm drain was responsible for a die-off involving more than 17,000 fish. The hydrogeologist II was involved with the initial emergency response as well as the ongoing investigation into the cause(s) of the release. A Notice of Violation was issued and an enforcement package is currently under review.

Ryans Steakhouse (Buncombe County) – The ARO responded to a complaint that both greywater and blackwater were discharging to a nearby storm drain from a private collection system owned by Ryans Steakhouse. The hydrogeologist II was instrumental in getting professional services on-site to abate the discharge. A Notice of Violation is being issued because the restaurant allowed the discharge to continue for more than 24 hours.

Coats American (Henderson County) – An anonymous complaint led to the investigation of a surface water discharge from a tank farm owned by a thread manufacturer known as Coats American. Evidence suggests that rainwater from within the secondary containment is discharging to a nearby Class C stream. Because the tank farm contains fuel oil and alcohol, water samples were collected and analyzed for volatile and semi-volatile organic compounds. Analytical results are pending.

Non-Discharge Permits

Davidson River Village (Transylvania County) – The Davidson River Village (DRV) is in the process of redeveloping the former Ecusta Paper Mill near the City of Brevard. DRV holds the NPDES permit for a 27.5 MGD wastewater treatment facility referred to as the Aeration Stabilization Basin (ASB). The ASB receives groundwater recharge from two closed process landfills associated with the former paper mill. Groundwater monitoring wells surrounding the ASB

basin indicate increasing ammonia concentrations above the applicable standard. The hydrogeologist II is currently working with DRV to update the NPDES permit, construct additional monitoring well, and expand the monitoring analytes/frequency.

Asheville Airport (Buncombe County) – The Asheville Regional Airport is expanding their operations using approximately 4.5 million tons of coal ash from a nearby Duke Energy steam generating plant. The coal ash structural fill project began in 2007 and was completed in the fall of 2015. The hydrogeologist II is currently involved with groundwater monitoring at 18 wells, conducting well receptor surveys surrounding the structural fill, and the development of post-construction operation and maintenance guidelines.

Blue Ridge Tissue (Caldwell County) – This tissue paper manufacturer has an antiquated fiber trap that is impacting groundwater quality. Biotic breakdown of organic paper fibers in the unlined fiber trap is creating anoxic conditions that solubilize iron and manganese oxyhydroxide minerals in the shallow regolith beneath the fiber trap. The hydrogeologist II is working directly with Blue Ridge Tissue and former owner Sealed Air Corporation to conduct a comprehensive site assessment and identify a replacement system for the current fiber traps.

Town of Tryon (Polk County) – The hydrogeologist II is working with the Town of Tryon to expand groundwater monitoring wells near their wastewater treatment plant and adjacent field used for land application of wastewater residuals.

City of Marion (McDowell County) – The hydrogeologist II is working with the City of Marion to close a series of earthen basins (sanitary landfill) used to dispose of biosolids from their wastewater treatment plant.

Trillium (Jackson County) – The hydrogeologist II is currently reviewing a permit application to expand the discharge of treated domestic wastewater using a high-rate infiltration basin in a steep slope setting. A geotechnical investigation was required as part of an additional information request. The results of the investigation will be forthcoming.

Nitrate in groundwater

South East Coastal Plain Groundwater Characterization – Data analysis conducted in FY2014 indicates that Sampson and Duplin counties receive the highest volumes of nitrogen and phosphorous via livestock waste application from DWR permitted facilities in the state. These two counties account for over half of the states total nutrient application by this means. Additionally, analysis showed that these two counties received proportionally large amounts of chemical fertilizer, with application rates by this method actually exceeding those from livestock waste application. Though dry poultry operations are not regulated by DWR, these two counties also have among the highest production of broiler chickens and turkeys in the coastal plain. The compounding of these factors, in addition to easily infiltrated sandy soils, suggests that groundwater supplies in this area are potentially the most susceptible in the state to agriculturally related nutrient pollution. A study has been developed to characterize groundwater in this area, sampling all available DWR monitoring wells in the two counties for a wide range of parameters to assess the potential influence of agricultural activities to ambient groundwater supplies. Additionally, the most recent methods in nitrate source partitioning and groundwater age dating are being investigated to

better characterize the sources of potential nutrient pollution and residence times. Sampling for this project will begin in December 2015.

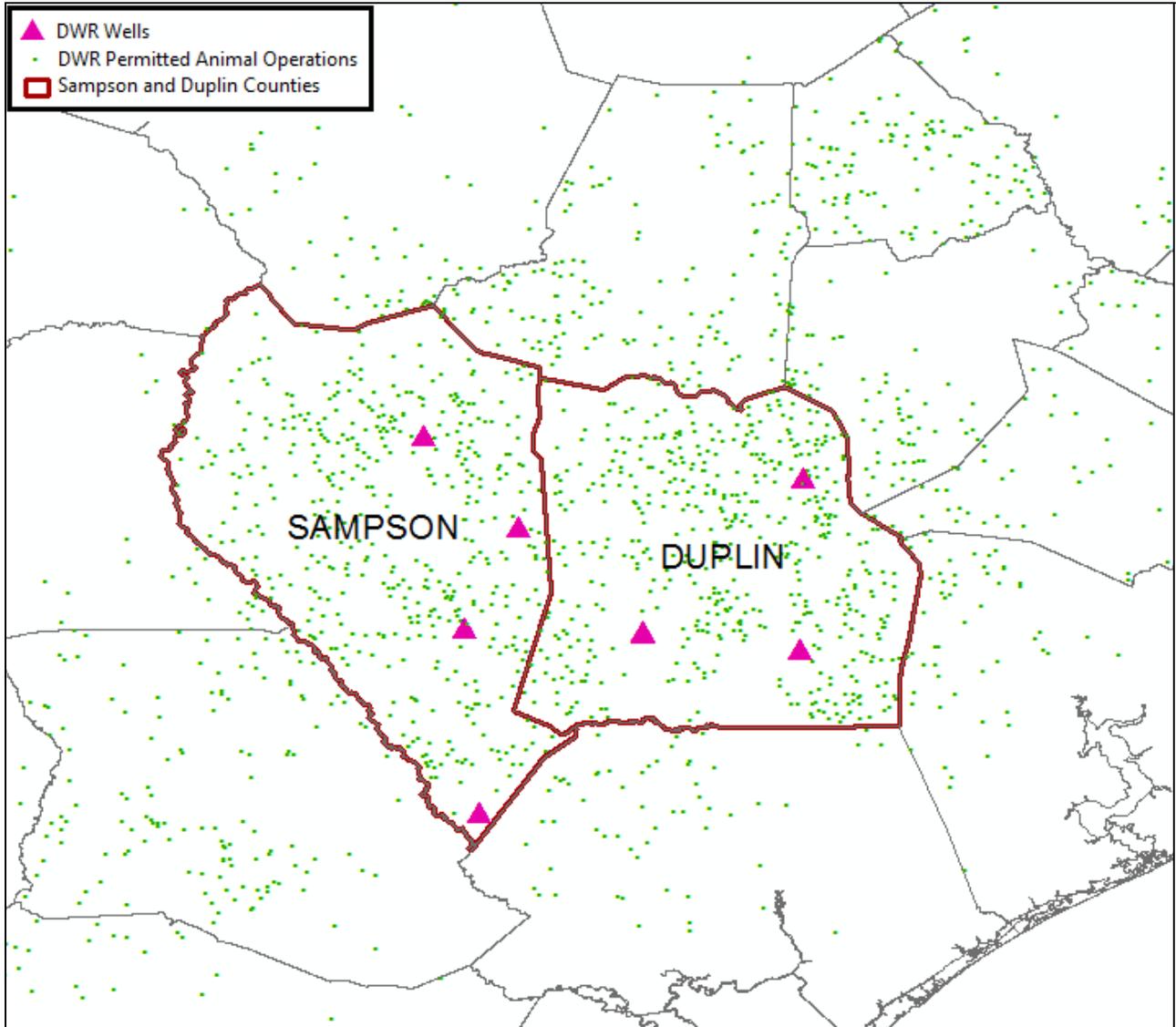


Figure 3. Sampling locations for the upcoming South East Coastal Plain Groundwater Characterization Study.

RULEMAKING AND SIMILAR EFFORTS TO DEVELOP BETTER MANAGEMENT STRATEGIES

No NPS-related rulemaking was conducted by the groundwater programs in FY2014.

DEVELOPMENT AND MAINTENANCE OF GROUNDWATER INFORMATION SYSTEMS AND TOOLS REQUIRED TO DEVELOP MORE EFFECTIVE NPS MANAGEMENT STRATEGIES

Development of the Groundwater Decision Support System – As noted in previous reports, DWR has begun to utilize databases within DWR and DENR as well as with the Department of Health and Human Services to extract data that can help determine the location and extent of groundwater pollution and integrate this information into planning processes for protection and

utilization of groundwater and surface water resources. Training and testing of this tool has continued in FY2015, and the database is being prepared for the addition of data to be collected as part of the upcoming South East Coastal Plain Groundwater Characterization Study.

FUTURE OPPORTUNITIES

The Division of Water Resources continues to focus on non-point source contamination of groundwater and the role of groundwater in surface water quality. The role of groundwater in the pollution of surface water from nonpoint sources has been demonstrated and quantified in areas of several watersheds in the North Carolina coastal plain and piedmont.

As a part of the ongoing consolidation of the Division, DWR is revising its basin planning process to generate integrated basin plans that address both water quality and water quantity. This is an opportunity also to provide explicit recognition of the role of groundwater in each basin plan. The groundwater programs of DWR are full participants in the integrated basin plan effort.

The Groundwater Planning Unit in DWR is also developing a new groundwater monitoring strategy to address DENR and stakeholder needs for groundwater quality data, identify cost-effective and timely ways to obtain the necessary information, and forecast needs for installation, continued use, or retirement of DWR-maintained monitoring wells. This effort will increase the efficiency and effectiveness of efforts to protect groundwater resources and will ensure that NPS issues are addressed appropriately in DWR's groundwater monitoring programs.

RESOURCE NEEDS

NPS grants have made it possible for DWR to better understand the contributions of groundwater to surface water impairment. These grants also make it possible for DWR to include the groundwater program and land-applied wastewaters and residuals program in solutions to NPS pollution problems. As state budgets continue to shrink, the 319 grant program provides an important funding source for these advances. DWR is committed to making effective use of the limited 319 funding that is available and making specific connections to NPS management and restoration strategies.

E. North Carolina Division of Water Resources

3. Clean Lakes Program: Ambient and Special Studies Sampling

BACKGROUND

In support of the 1987 amendments to the Clean Water Act, lake water quality monitoring was conducted from October 2014 through September 2015. Data results from this monitoring effort will be reported in the Integrated 305(b) and 303(d) Report as well as in individual River Basin Assessment Reports. These data may be used to evaluate the need for and effectiveness of Best Management Practices (BMPs) to control nonpoint source nutrient and sediment loading into these lakes.

ACTIVITIES AND ACCOMPLISHMENTS: AMBIENT LAKE SAMPLING

Twenty Three lakes within the Neuse, Broad, Chowan and Pasquotank River Basins were monitored by the NC Division of Water Resources (DWR) as part of the Ambient Lakes Monitoring Program between October 2014 and September 2015 (Table 1). Only data from lakes in the Neuse, Broad, Chowan and Pasquotank Basins will be assessed and reported in FY14 since these basins are currently up for assessment in the Basin Planning schedule. Ambient lakes were monitored once a month from May through September. These data will be used to determine if the designated uses of these lakes are being met. Methodology and procedures for lake sampling can be found in the Intensive Survey Branch Standard Operating Procedures.

http://portal.ncdenr.org/c/document_library/get_file?uuid=522a90a4-b593-426f-8c11-21a35569dfd8&groupId=38364

Lake assessment data for FY14 will be available in March 2016 at:

<http://portal.ncdenr.org/web/wq/ess/reports>

Table 1. Ambient Lakes Sampled From October 2014 through September 2015

River Basin	Waterbody	County
Neuse River	BIG LAKE	WAKE
	BUCKHORN RESERVOIR	WILSON
	CLIFFS OF THE NEUSE LAKE	WAYNE
	CORPORATION LAKE	ORANGE
	FALLS OF THE NEUSE RESERVOIR	WAKE
	LAKE BEN JOHNSON	ORANGE
	LAKE BENSON	WAKE
	LAKE BUTNER	GRANVILLE
	LAKE JOHNSON	WAKE
	LAKE MICHIE	DURHAM
	LAKE ORANGE	ORANGE
	LAKE ROGERS	GRANVILLE
	LAKE WHEELER	WAKE
	LITTLE RIVER RESERVOIR	DURHAM
REEDY CREEK LAKE	WAKE	
SYCAMORE LAKE	WAKE	

	WEST FORK ENO RIVER RESERVOIR WIGGINS MILL RESERVOIR	ORANGE WILSON
Broad River	LAKE LURE LAKE ADGER KINGS MOUNTAIN RESERVOIR	RUTHERFORD CLEVELAND POLK
Chowan River	MERCHANTS MILLPOND	GATES
Pasquotank River	PHELPS LAKE	WASHINGTON

Data from ambient lakes sampling supported by the FY2014 319 grant, were reviewed and compiled during FY2016. In the Neuse River basin, Falls of the Neuse Reservoir was sampled nine times from January through September 2015 and a total of 57 times by DWR staff during the basinwide assessment period from January 1, 2011 to September 30, 2015. Of the 23 monitored lakes in the Neuse, Chowan, Broad and Pasquotank River basins, only a segment of Falls of the Neuse Reservoir from Panther Creek to Ledge Creek is on the 2014 303(d) List of Impaired Waters for exceedance of the state's chlorophyll *a* limit of greater than 40 ug/L.

Data for lakes sampled as part of the Ambient Lake Monitoring Program are presented in the corresponding river basin assessment document. Table 2 contains the web location of the assessment document with information for the lakes sampled during the 2013 - 2014 grant period. Assessment documents for the 2014 - 2015 grant period will be generated and uploaded in early 2016.

Table 2. Links to North Carolina's River Basin Assessment Reports

<p>Roanoke River Basin: 2009-2014 assessment http://portal.ncdenr.org/c/document_library/get_file?uuid=3797c7b6-6e78-4e94-a63f-9feb6627d633&groupId=38364</p>
<p>White Oak River Basin: 2009-2014 assessment http://portal.ncdenr.org/c/document_library/get_file?uuid=a16c5fc8-5533-4a5b-acd5-de9199cba1e7&groupId=38364</p>
<p>Hiwassee River Basin: 2009-2014 assessment http://portal.ncdenr.org/c/document_library/get_file?uuid=45367c8e-187b-4864-999a-</p>

[06380ebe9068&groupId=38364](http://portal.ncdenr.org/c/document_library/get_file?uuid=c6522377-0cc4-48bd-9c02-46528107da23&groupId=38364)

Little Tennessee River Basin: 2009-2014 assessment

http://portal.ncdenr.org/c/document_library/get_file?uuid=c6522377-0cc4-48bd-9c02-46528107da23&groupId=38364

ACTIVITIES AND ACCOMPLISHMENTS: SPECIAL STUDIES

Falls of the Neuse Reservoir (Falls Lake) is a multipurpose impoundment of the Upper Neuse River basin. This reservoir is the primary water supply source for the city of Raleigh and surrounding towns in Wake County, NC. In 2005, the North Carolina General Assembly passed Session Law 2005-190 (also known as Senate Bill 981), which directed the Environmental Management Commission (EMC) to study water supply reservoirs in general and to develop and implement a nutrient management strategy based on a calibrated nutrient response model for certain reservoirs which included Falls Lake. A nutrient management strategy was developed and presented to the EMC as draft rules 15A NCAC 2B .0275 through .0282 and .0213(q) in March 2010. Section 5. (a) of the draft Goals Rules (15A NCAC 2B .0275) includes provisions for water quality monitoring of Falls Lake and to utilize the data to produce load reduction estimates and to perform periodic use support assessments. Monthly monitoring of Falls Lake began in May 2010 and will continue until 2021 or as required by the nutrient management strategy rules. A total of 11 sites throughout the reservoir will be sampled during each monitoring trip. Data collected will include physical measurements, nutrients, chlorophyll *a*, and turbidity. These data will be used to evaluate progress in attainment of water quality standards and use support in Falls Lake as required by the nutrient management strategy rules. The first progress report detailing specific requirements under for the management strategy is due to NC EMC in April 2016. This report will be available after April 2016, and is presented in lieu of annual in lake monitoring progress reports.

A Pilot Project study began during 2013 in Jordan Lake to provide information for the Jordan Lake Nutrient Mitigation Demonstration Project. Specifically this includes water sampling, water testing, and water analysis of samples in Jordan Lake and connecting creeks prior to and during the demonstration project detailed in Section 14.3A.(a) of S.L. 2013- 402. In addition to the current monitoring study in place on Jordan Lake required by section 3.(c) of S.L. 2009 – 216 as part of the current total maximum daily load (TMDL) , 11 additional monitoring sites will be sampled to evaluate changes in water quality (specifically chlorophyll *a* and pH) related to placement of mechanical circulators. These sites will be sampled twice monthly during the growing season (May - September) and monthly during the non-growing season, in concurrence with existing Jordan Lake monitoring sites. Sites will be located to provide water quality data in the immediate vicinity of mechanical water circulators, as well as in background or control areas outside of the area affected by mechanical circulation. This will allow for comparison of water quality data independent of varying meteorological and hydrological variability. The first analysis of this project's data was produced on October 1, 2015 to provide a preliminary evaluation of the efficacy of in-situ circulation type treatment to address nutrient related impairments. This report is available

at: http://portal.ncdenr.org/c/document_library/get_file?uuid=d57a9c13-e39a-4e03-b2d9-0973ca986fbc&groupId=38364

FUTURE OPPORTUNITIES

Lakes and reservoirs in the Yadkin and Lumber River basins will be monitored in 2016 as part of the Ambient Lakes Monitoring Program. These lakes will be sampled at least once a month from May through September. Data analysis and monitoring results will be discussed in the respective basin reports in 2017.

Monitoring of Jordan Lake and Falls of the Neuse Reservoir will be ongoing until these reservoirs are no longer impaired for nutrient-related water quality issues.

E. Division of Water Resources:
4. Implementing Nutrient Reduction Strategies: Status and Progress

a. NUTRIENT STRATEGIES OVERVIEW

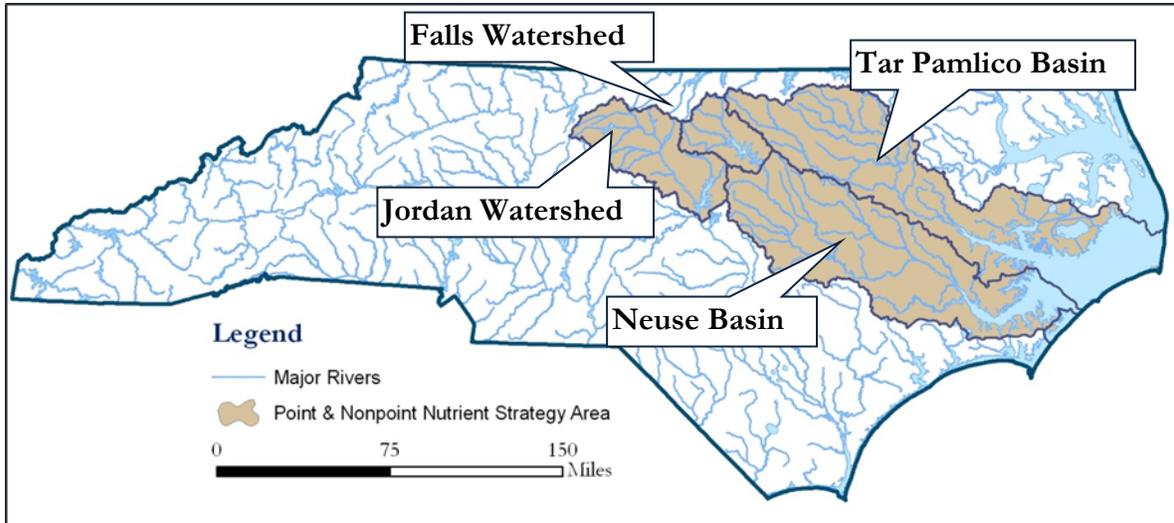
North Carolina currently has four comprehensive nutrient reduction strategies that cover both point and nonpoint sources. Each strategy is unique in that it has distinct nutrient reduction goals aimed at achieving nutrient related water quality standards in the targeted waterbody in addition to a discrete set of rules designed to achieve those goals.

In a major initiative affecting all four nutrient strategies, the Division is currently in the process of readopting all of its nutrient strategy rules per Session Law 2013-413 (H74) which requires the review and readoption of all of the Division’s water quality rules at least once every 10 years. Staff posted draft revisions in early 2015 followed by an informal 30-day comment period including a key stakeholders meeting in May 2015. Staff completed additional revisions based on stakeholder comments in December 2015 and the rules should come to the Water Quality Committee in early 2016 for approval to begin the formal rulemaking process. Final rule recommendations would return to the Commission for adoption in late 2017 or early 2018. Some proposed revisions would strengthen rules while others involve updates and streamlining.

This Section provides an overview of these strategies, their implementation status and the role played by 319 grant funds at achieving their nutrient reduction goals.

Nutrient Strategy Area	Area (mi²)	Reduction Goal ¹	Baseline Year
Neuse River Basin	5,300	30 % N, No P goal	1991-1995
Tar-Pamlico River Basin	6,100	30 % N, No Increase in P	1991
Jordan Lake Watershed <ul style="list-style-type: none"> • Upper New Hope Subwatershed • Haw River Subwatershed • Lower New Hope Subwatershed 	1,700	35 % N, 5% P 8 % N, 5% P No Increase N & P	1997-2001
Falls Lake Watershed	770	40% N , 77% P	2006

¹ Reduction goals are relative to the baseline year



NC watersheds with Point and Nonpoint Source Nutrient Management Strategies.

b. HIGHLIGHTED 319 FUNDED ACTIVITIES SUPPORTING IMPLEMENTATION OF NUTRIENT STRATEGIES

Implementation of the State’s nutrient strategies is dependent on 319 funded staff that perform numerous critical functions. The following table provides details on the staff and their contributions to implementing nutrient reductions strategies:

Position	Nutrient Reduction Related Activities
Division of Water Resources, Water Quality Permitting Section, Wastewater Branch, Non-Discharge Permitting Unit (1 position) (Chonticha McDaniel)	<ul style="list-style-type: none"> • Protection: Reviewing non-discharge permits including land applications of residuals, spray irrigation of wastewater, recycling and beneficial reuse of reclaimed water to prevent NPS pollution and protect aquatic resources. • Protection: Developing the requirements and guidance for residuals management that the regulated community must follow to protect water quality and the environment. • Protection: Reviewing measures and training needed to improve phosphorus management to under the State’s residuals management program. • Enforcement: Assessing actions for remediation of groundwater impacts to surface waters due to inappropriate wastewater and agricultural applications.
Division of Water Resources, Water Planning Section, Ground Water Management Branch	<ul style="list-style-type: none"> • Enforcement: Providing data on groundwater quality and land applied waste and residuals where potential NPS issues are identified and need further investigation. • Assessment: Collecting and analyzing land application data to improve the division’s management of land applied waste and residuals.

Position	Nutrient Reduction Related Activities
(1 position) (A. Birch)	<ul style="list-style-type: none"> • Analysis: Compiling nutrient loading estimates for all land application permit types by subwatershed to assess the potential contributions of land applied nutrients to estuary loads relative to other nutrient sources.
Division of Water Resources, Water Quality Regional Operations Section, Washington Regional Office (1 Position) (Dwight Sipe)	<ul style="list-style-type: none"> • Enforcement: Identifying, through response to complaints or permit review, inappropriate land application practices in the Neuse and Tar-Pamlico Basins. • Enforcement: Assessing and developing remediation plans for groundwater impacts to surface waters due to inappropriate wastewater and agricultural applications. • Investigation: Identifying sources contributing to impairments through GIS and other data analysis and field work. • Implementation: Assisting develop and evaluate watershed restoration projects intended to improve impaired waters.

Position	Nutrient Reduction Related Activities
Division of Water Resources, Environmental Sciences Section, Estuarine Monitoring Team (2 Positions) (Jill Paxson and Burt Simons)	<ul style="list-style-type: none"> • Examination: providing both intensive and routine monitoring and assessment of estuarine water quality. Currently, 69 fixed monitoring stations are sampled on a monthly basis • Investigation and Enforcement: monitoring and assessing environmental events such as fish kills, oil spills, and algal blooms. Initiating steps for corrective action. • Investigation and Enforcement: responding to citizen complaints regarding water quality and the Riparian Buffer rule violations. Typically, this results in about 50 investigations per year, some resulting in corrective actions. • Examination: conducting submerged aquatic vegetation surveys to identify coverage, characterize critical habitat, and identify factors impacting their growth. • Examination: assuring monitoring protocols are followed and that equipment is operating according to specifications so that data is defensible and useable for regulatory decision making and scientific assessment. • Examination: providing assistance on special studies including the Rose Acres Chicken Farm five-year water quality monitoring study and a two-year hybrid striped bass effluent study
Division of Water Resources, Water Sciences Section, Ecosystems Branch (1 Position) (Brian Pointer)	<ul style="list-style-type: none"> • Evaluation: administering the Ambient Monitoring Network and the Random Monitoring Assessments to characterize water quality conditions in streams and rivers. • Examination: assuring monitoring protocols are followed and that equipment is operating according to specifications so that monitoring data is defensible and useable for regulatory decision making and scientific assessment. • Coordination: communicating with monitoring staff to assure resources are sufficient to support water quality assessments. • Assessment: reviewing monitoring data to assure its quality and utility for use assessment and nutrient analysis.
Division of Water Resources, Water Planning Section, Modeling and Assessment Branch (2 Positions) (Raj and Adugna)	<ul style="list-style-type: none"> • Modeling: quantifying sources of nutrient inputs to inform rulemaking and implementation in Falls and Jordan Lakes. Guiding development of a watershed model that will be used to assign existing development load reduction goals to Jordan affected parties. • Assessment: determining whether proposed measures are adequate to achieve nutrient reduction goals or identifying elements missing in the restoration strategy that need addressing. • Modeling: developing loading calculations and trend

	<p>assessments in nutrient strategy basins to identify compliance with TMDLs.</p> <ul style="list-style-type: none"> • Assessment: identifying significant sources of water quality impairment and management measures that will most effectively address those sources, ensuring that the on-the-ground restoration efforts that follow will be successful • Assessment: evaluating impairment sources in coastal waters, and other waters to reduce nutrients and turbidity.
<p>Division of Water Resources, Water Planning Section, Non-Point Source Planning Branch (3 Positions) (Amin Davis, John Huisman, and Rich Gannon)</p>	<ul style="list-style-type: none"> • Implementation: developing and providing technical and policy support and guidance on, overseeing implementation by others of, and interpreting and amending rules to restore nutrient related water quality standards to Jordan Lake, Falls Lake, and Neuse and Pamlico estuaries. • Coordination: working with stormwater, agriculture and point source stakeholders and scientific experts to assure nutrient reduction goals are achieved in a timely and cost effective manner. • Tracking: collecting information on the implementation status of rules as they become effective. • Outreach: organizing and participating in trainings and responding to assistance requests related to implementation of the nutrient strategies.
<p>Department of Agriculture and Consumer Services, Division of Soil and Water Conservation (1 Position) (Joey Hester)</p>	<ul style="list-style-type: none"> • Implementation: assisting with the administering the Conservation Reserve Enhancement Program and the Agricultural Cost-Share Program. Since 2000, these programs have cumulatively implemented over 26,000 and 186,000 acres of agricultural BMPs, respectively, in Neuse and Tar-Pamlico River basins to help achieve agriculture’s nutrient reduction goals for these nutrient strategies. • Planning: identifying resource needs to achieve agricultural reductions required in nutrient strategy areas. Either allocating existing resources or seeking new additional ones meet goals. • Implementation: administering 319 grants to implement nutrient reducing BMPs in Falls Lake watershed on priority horse farms and on pasture and cropland in the Jordan Lake watershed. • Coordination: communicating with agricultural local advisory committees to collect data on nutrient application rates, crop types, and BMP implementation. Also, facilitating review and approval of agriculture’s annual nutrient reduction report used to evaluate agriculture rule compliance.
<p>Department of Health and Human Services, Division of Public Health,</p>	<ul style="list-style-type: none"> • Assessment: reviewing research on the fate and transport of nutrients, pathogens, and other chemicals on groundwater and surface water from onsite wastewater and incorporating findings to improve environmental modeling.

Environmental
Health Branch
(1 Position)
(Sushama Pradhan)

- Investigation: exploring innovative and experimental systems when suitable, and reviewing pathogen reduction in these systems. Current investigations include: tire chips, slag, and other aggregate substitutes.
 - Evaluation: researching nutrients levels in sewerred vs. septic areas in Falls Lake to better quantify the impact of septic systems on Falls Lake.
 - Outreach: conducting 10 to 20 seminars and workshops per year to provide materials necessary to authorize local specialist in 85 counties on inspecting and certifying onsite systems and giving updates on advances and changes in treatment technologies.
- Enforcement: evaluating septic tank performance with test kits and video microscopy to identify failing systems and solve failures.

c. NEUSE NUTRIENT STRATEGY: IMPLEMENTATION STATUS

NEUSE: STRATEGY BACKGROUND

Eutrophication became a water quality concern in the lower Neuse River basin in the late 1970s and early 1980s. Studies at the time indicated that algal growth was being stimulated by excess nutrients entering the estuarine waters of the Neuse River. In 1988 the lower Neuse River basin received the supplemental classification of nutrient sensitive waters (NSW). As part of this early nutrient strategy, new and expanding NPDES discharges, as well as existing facilities with design flows greater than 0.05 MGD, were given a quarterly average phosphorus limit of 2 mg/l. Phosphorus loading was greatly reduced and algal blooms in the river and freshwater portions of the estuary were reduced as a result of this action. However, extensive fish kills in 1995 prompted further study of the problem. Low dissolved oxygen levels associated with algal blooms were determined to be a probable cause of many of the fish kills.

The severe fish kills, algal blooms, and correspondingly high levels of chlorophyll *a* prompted DWR to place the Neuse River estuary on the 1994 303(d) list of impaired waters. In 1996, the NC Senate Select Committee on River Water Quality and Fish Kills sponsored a workshop with numerous scientists familiar with the Neuse River water quality problems. The group reached consensus that a 30 percent reduction in total nitrogen entering the estuary was a good starting goal to reduce the extent and duration of algal blooms. In 1996, the 30 percent reduction was put into law (Session Laws 1995, Section 572). The state funded the Neuse Modeling and Monitoring Project (MODMON) to quantitatively assess the interactions and pathways between nutrients, phytoplankton and dissolved oxygen in the estuary. A Total Maximum Daily Load (TMDL) was developed in two stages and approved by EPA in 2002 to address the nitrogen overloading to the estuary. The TMDL developed for the Neuse estuary showed a 30% reduction in nitrogen loading is needed.

The North Carolina Environmental Management Commission (EMC) adopted a comprehensive set of permanent rules that became effective August 1, 1998 to implement the Neuse Nutrient Strategy. While individual implementation dates varied, all of the rules were fully implemented by 2003. Below is a summary of the strategy requirements followed by the implementation progress of the Neuse nutrient management strategy.

NEUSE: NPS RULE REQUIREMENTS

A comprehensive set of rules addressing both point and nonpoint sources of nutrients within the Neuse River Basin went into effect beginning in 1997. These rules required a 30% reduction in the annual load from point and nonpoint sources to be accomplished by August 2003. The NC Environmental Management Commission adopted rules addressing:

- **Agriculture**

- **Riparian buffers**
- **Fertilizer use**
- **Wastewater discharge**
- **Stormwater**
- **Offset payments**

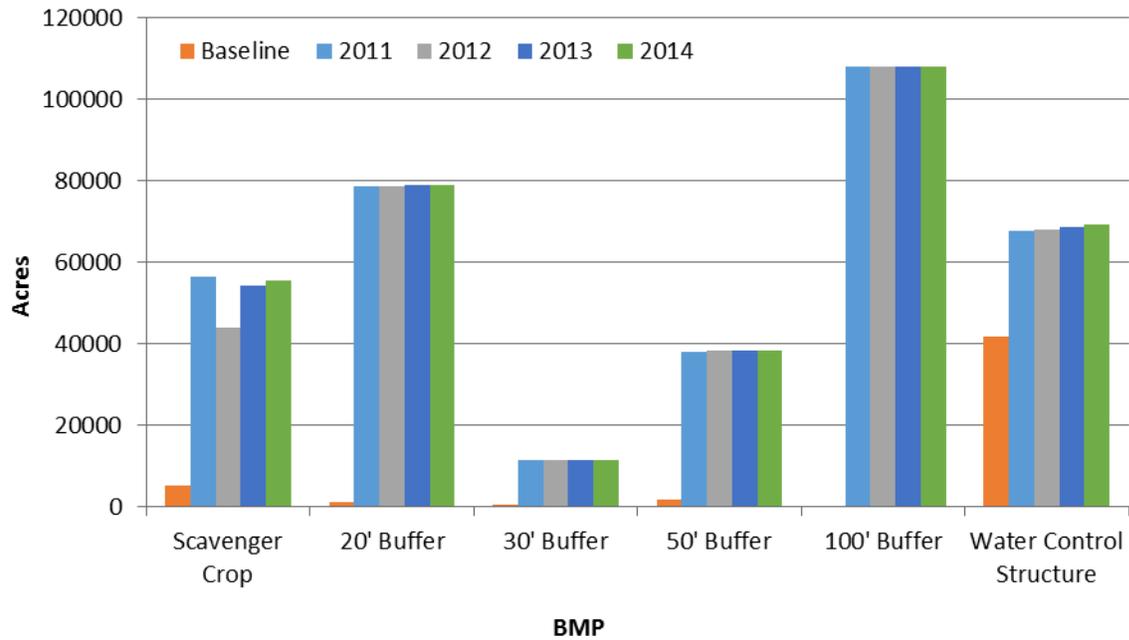
The **agricultural** community was required to achieve a collective 30 percent reduction in nitrogen losses within five years. Persons engaging in agricultural operations had two options for meeting the nitrogen net loading reduction. They could either participate in a county nitrogen reduction plan, or implement standard Best Management Practices (BMPs). Three rules address **riparian buffers** ensuring that existing 50-foot riparian areas are protected and maintained on both sides of intermittent and perennial surface waters. The State implements buffer programs, but local governments have the option of accepting this responsibility. There are also procedures for achieving alternative means of compliance with the 50-foot requirement. One rule requires applicators that apply **fertilizer** to 50 acres or more of residential, agricultural, commercial, or industrial land and right-of-way be subject to nutrient restrictions. Applicants can comply with this rule by either completing nutrient management training, or developing a nutrient management plan. The **wastewater discharge** rule requires nutrient limits for dischargers in the basin, and the **stormwater** rule requires the largest local governments in the Neuse basin to develop, adopt, and implement local stormwater programs to address nutrient pollution within their jurisdictions. There is also an option to comply with the strategy by contributing **offset payments** to the North Carolina Ecosystem Enhancement Nutrient Offset Program.

NEUSE: IMPLEMENTATION ACTIVITIES AND ACCOMPLISHMENTS

Agriculture: The Neuse Basin Oversight Committee (BOC) has received and approved annual reports estimating progress for the 2014 crop year from 17 Local Advisory Committees (LACs) operating under the Neuse Agricultural Rule as part of the Neuse Basin Nutrient Strategy. For the entire basin, agriculture has achieved an estimated 46 percent reduction in nitrogen loss compared to the 1991-1995 baseline. This represents a 9 percent increase in reduction compared to the 37 percent reduction reported for 2013. The main reason for this increase in nitrogen loss reduction is a cropping shifts to crops with lower nitrogen demands and nitrogen application rates.. Fourteen of the seventeen LACs achieved their BOC mandated nitrogen loss reduction goal. The BOC and LAC will work with the three counties that fell below their goal to increase their reductions over the next year.

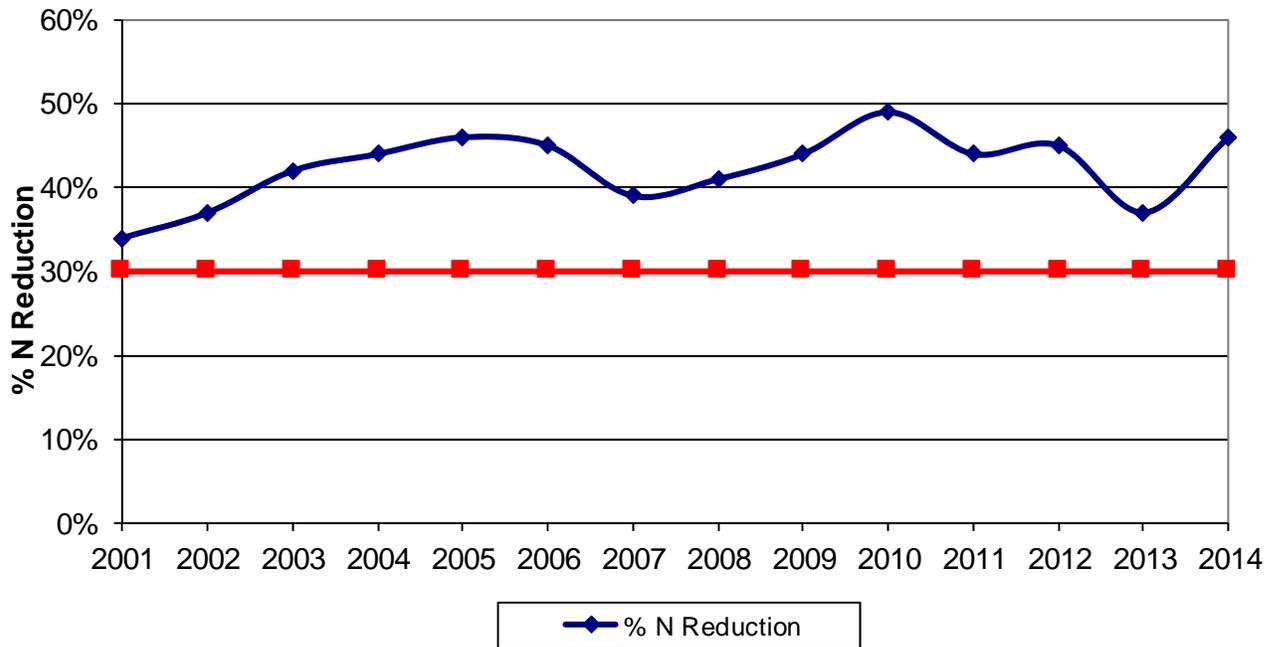
Nitrogen loading reduction from agricultural land was accomplished through BMP installation, fertilizer application reduction, and cropland conversion to grass, trees, or development. The BOC will continue to focus their efforts on maintaining the reductions that have been achieved and promoting further implementation of conservation practices.

Division of Soil and Water Conservation (DSWC) staff funded through 319 continue to play an integral role administering the Basin's Agricultural Rule through promoting BMP implementation and technical oversight, outreach and education, and tracking of and accounting for agricultural practices.^[HJ1] Cumulatively, DSWC staff has supported implementation of the following agricultural BMPs shown in the graph below:



Through Soil and Water staff, the agricultural community has produced annual progress reports since 2001. At that time, the agricultural community had exceeded their 30 percent requirement by achieving a cumulative 34 percent reduction in nutrient loading. As shown in Figure 1 below, agricultural continues to exceed the 30 percent reduction goal through 2014.

Figure 1: Neuse River Basin Agriculture Nitrogen Loss Reduction



The Neuse River basin has also shown progress in achieving nutrient reductions from other sources outside of agriculture. The progress of the other nutrient reduction rules that are part of the overall Neuse nutrient management strategy are highlighted below.

Stormwater: During 2002, the fifteen local governments subject to the basin stormwater rule developed and enacted stormwater programs. All new development activity in these communities is required to implement practices to reduce nitrogen export to meet the basin goals. All of the local governments subject to the Neuse Stormwater Rule have also developed ordinances and programs that, in addition to requiring the nutrient export goal be met, establish local authority for the removal of illegal discharges. This includes establishing a 24-hour hotline the public can use to report an illegal discharge. To assist with the elimination of illicit discharges, 319 funded staff in the stormwater unit review has established a website (<http://www.ncstormwater.org/pages/complaintform.html>) and a 24-hour hotline (1-877-623-6748) the public can use to report an illegal discharge. Each local government is required to submit an annual stormwater report by the end of October each year to document their continued implementation of the stormwater rule.

Nutrient Management: The Nutrient Management Training Rule requires landowners, leasees and commercial applicators that are applying nutrients to 50 or more acres of residential, agricultural, commercial, recreational or industrial land as of the effective date of the rule. Through a partnership between the NCSU Soil Science Department and North Carolina Cooperative Extension staff, 17 nutrient management training sessions were held throughout the basin between 2000-2001, resulting in the training of 1,850 applicators. In December 2007 a follow-up training was promoted and conducted by NC Cooperative Extension staff in Wilson County that trained an additional 48 applicators from both the Neuse and Tar-Pamlico Basin that had not been trained in the original

training sessions. Additionally, 319 funded staff in the Nondischarge Permitting Unit review application packages for non-discharge and animal feeding operation permits to make sure nutrient applications minimize the impact of land applied nutrients on surface waters.

Wastewater Discharge: The Neuse Wastewater Discharge Requirements rule was adopted in 1997. The rule applies to all wastewater treatment facilities in the basin that receive nutrient-bearing wastewaters and are governed by individual National Pollutant Discharge Elimination System (NPDES) permits. The aim of the rule is to achieve the mandated 30 percent reduction in nitrogen load from these dischargers to the Neuse River estuary. In the 2000 renewal cycle, the DWR modified all Neuse wastewater permits to include nitrogen and phosphorus monitoring and reporting. Where appropriate, the permits included nutrient limits and related conditions. The limits were written as annual mass limits equal to the assigned allocations and became effective with calendar year 2003. The rule provides NPDES dischargers the option of forming a compliance association in which members work collectively to reduce their nitrogen loadings to the estuary. Association members are subject to a combined nitrogen limit rather than to their individual permit limits and can decide the most practical and cost-effective means of meeting the group limit.

In 2002 interested permittees established the Neuse River Compliance Association (NRCA) to pursue the rule's group compliance option. DWR issued the first group permit of its kind to the Association and its co-permittee members that same year. In 2014, the Association was comprised of 22 permittees with 27 facilities and had a combined estuary limit of 1,190,831 lb/yr TN. In 2014, the total nitrogen load for the NRCA members' facilities was calculated as 568,287 lb/yr TN at the estuary, which represents 48 percent of the group's 2014 nitrogen limit and a 68 percent reduction in TN loading from their 1995 baseline loads.

NEUSE: FUTURE STEPS

Funding from 319 remains a critical component to the adaptive implementation of these strategies. The Neuse River Basin Nutrient Management Strategy has been fully implemented since 2003. While there have been a number of implementation successes the goal of a 30 percent reduction in nitrogen loading to the Neuse Estuary has not yet been achieved. However, due to the complex dynamics of the estuarine system, the variability associated with climatic change, and the time required to discern trends, staff believe it will likely be a number of years before a definitive assessment of the effect of the reduction strategy on the estuary can be made. Since the in stream loading data to date show mixed results, and given the estuary's continued impairment, DWR has begun to evaluate the limitations of the current strategy and identify additional research and management needs that may yield additional opportunities for improvement.

319-funded staff are being used to analyze monitoring data in the basin to identify where nutrients loads are high or excessive and to evaluate trends. Given the estuary's continued impairment, this information will help inform DWR of the limitations of the current strategy and identify opportunities to improve it.

d. TAR-PAMLICO NUTRIENT STRATEGY: IMPLEMENTATION STATUS

TAR-PAMLICO: STRATEGY BACKGROUND

During the 1970's and 1980's, the Pamlico River estuary witnessed growing numbers of fish kills and diseases, nuisance algal blooms, loss of aquatic vegetation, and other nutrient-related problems. In response, the NC Environmental Management Commission designated the entire Tar-Pamlico River basin as "Nutrient Sensitive" in December 1989 and called for a strategy to reduce nutrient inputs from around the basin. In the first strategy phase, point sources successfully reduced discharged nutrient loads under an innovative 'trading' program. The second phase, in 1995, established estuary-based goals of a 30 percent reduction in nitrogen loading and no increase in phosphorus loading. Nonpoint source rules were adopted during Phase 2. Phase 3 was approved in 2005 and continued to cover point source discharges. Nonpoint source rules reached full implementation during Phase 3. Phase IV, approved by the EMC in July 2015, set up addition of N and P limits to individual permits to accompany group caps. The agreement maintains the nutrient reductions called for in Phase 2 and addresses 98 percent of permitted discharge flows to the basin.

TAR-PAMLICO: NPS RULE REQUIREMENTS

Modeled after rules implemented in the adjacent Neuse River basin in 1998, a set of rules addressing the following four subject areas went into effect during 2000 and 2001:

- **agriculture,**
- **urban stormwater,**
- **riparian buffer protection**
- **fertilizer management.**

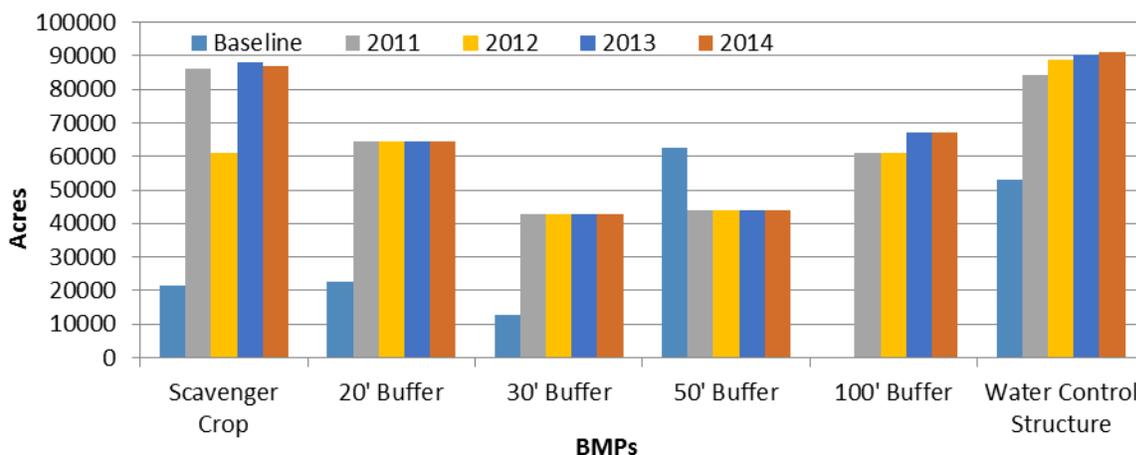
The *agricultural* community was required to achieve a collective 30 percent reduction in nitrogen losses within five years, and to ensure no increase in phosphorus losses within four years of the development of a phosphorus accounting method approved in 2005. Under the *stormwater* rule, five counties and six municipalities were required to regulate new development to achieve 30 percent reduction in nitrogen export and no increase in phosphorus export from basinwide average pre-development conditions. These local governments were also required to identify and eliminate illicit discharges to the stormwater system, conduct education programs, and identify retrofit sites on existing developed lands. The *riparian buffer* rule established protections for existing riparian areas 50 feet in width basinwide, and required establishment of such buffers where none exist upon change of land use. The *nutrient management* rule requires fertilizer applicators basinwide to either have certified plans in place for lands to which they apply fertilizer, or to take training within five years on developing such plans. Homeowners were not subject to this requirement; instead the Division developed and implemented an education program targeting homeowners.

TAR-PAMLICO: IMPLEMENTATION ACTIVITIES AND ACCOMPLISHMENTS

Agriculture: The Tar-Pam Basin Oversight Committee (BOC) has received and approved annual reports estimating progress for the 2014 crop year from 14 Local Advisory Committees (LACs) operating under the Tar-Pam Agricultural Rule as part of the Tar-Pam Basin Nutrient Strategy. For the entire basin, agriculture estimates a 51 percent reduction in nitrogen (N) loss compared to the 1991 baseline. This represents a 10percent increase in reduction compared to the 41 percent reduction reported in 2013. As with the Neuse Basin, the primary reason for this decrease in nitrogen loss reduction is a cropping shift to crops with lower nitrogen demands and nitrogen application rates.

Thirteen of the 14 counties in the basin achieved their nitrogen reduction goal. Nitrogen loading reduction from agricultural land has been accomplished through BMP installation, fertilizer application reduction, and cropland conversion to grass, trees, or development. The BOC will continue to focus their efforts on maintaining the reductions that have been achieved and promoting further implementation of conservation practices.

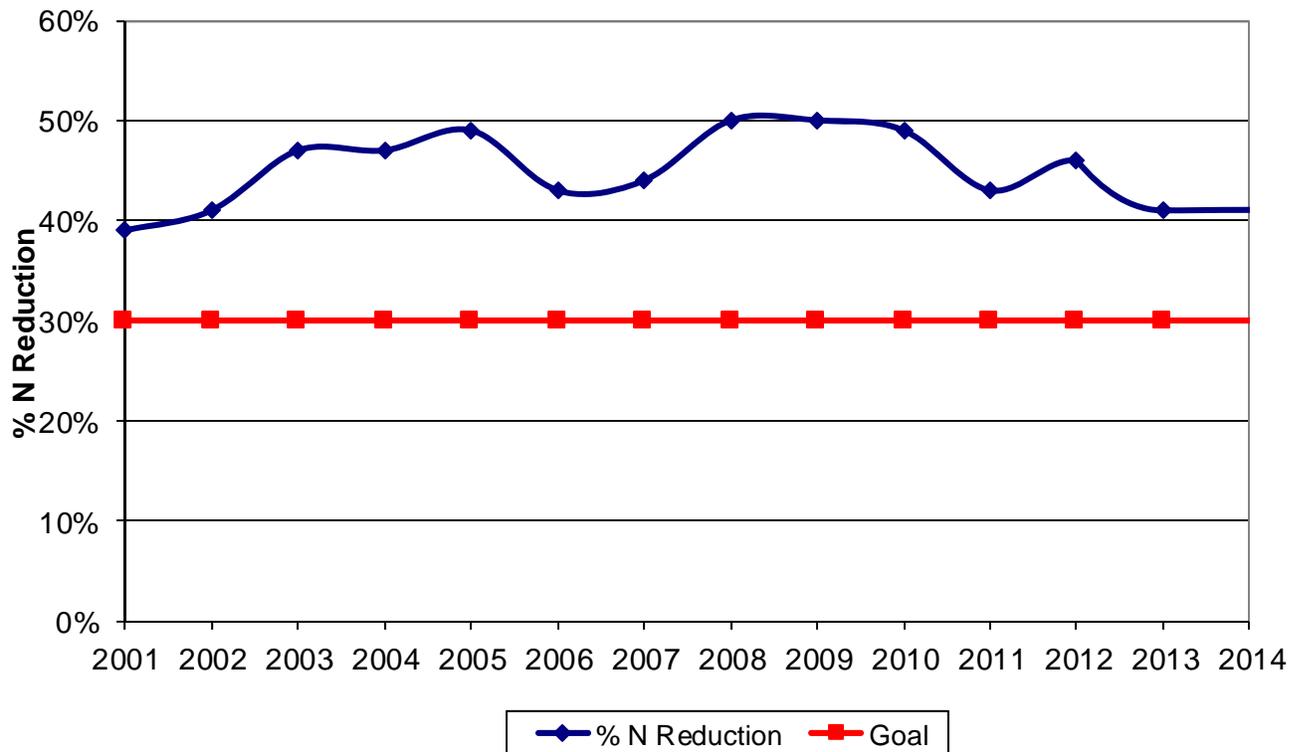
Division of Soil and Water Conservation (DSWC) staff funded through 319 continue to play an integral role administering the basin’s agricultural rule through promoting BMP implementation and technical oversight, outreach and education, and tracking of and accounting for agricultural practices. Cumulatively, DSWC staff has supported implementation of the following agricultural BMPs:



Through Soil and Water staff, the agricultural community has produced annual progress reports since 2001. At that time, the agricultural community exceeded their 30 percent reduction in nitrogen loss requirement by achieving a cumulative 39 percent reduction. As shown in Figure 2, agricultural nitrogen loss reductions have remained above 40 percent from 2002 through 2014.

Figure 2: Tar-Pamlico River Basin Agriculture Nitrogen Loss Reduction

In summer 2004, the agricultural Basin Oversight Committee initiated a Phosphorus Technical Advisory Committee (PTAC) called for in the agriculture rule to establish a phosphorus accounting method for agriculture in the basin. In fall 2005, the PTAC Report was submitted to the BOC for approval. The PTAC determined that a defensible, aggregated, county-scale accounting method for estimating phosphorus losses from agricultural lands is not currently feasible. The PTAC instead



developed recommendations for qualitatively tracking relative changes in practices that either increase or decrease the risk of phosphorus loss from agricultural lands in the basin on an annual basis. The BOC received approval for this approach in November 2005 from the NC Environmental Management Commission.

The qualitative indicator data for phosphorus loss provided in the 2014 Progress report to the EMC indicates the continuation of a negative trend in the risk of phosphorous loss in the basin, meaning the risk of phosphorous loss was lower in 2014 than during the 1991 baseline year.

Stormwater: During 2004, the eleven local governments subject to the basin stormwater rule developed and enacted stormwater programs. Local regulatory programs for new development were implemented between September and December 2004. All new development activity in these

communities is required to implement practices to reduce nitrogen and phosphorus export to meet the basin goals. All of the local governments subject to the Tar-Pam Stormwater Rule have also developed ordinances and programs that, in addition to requiring the nutrient export goal be met, establish local authority for the removal of illegal discharges. To assist with the elimination of illicit discharges, 319 funded staff in the Stormwater Unit review have established a website (<http://www.ncstormwater.org/pages/complaintform.html>) and a 24-hour hotline (1-877-623-6748) the public can use to report an illegal discharge. Each local government is required to submit an annual stormwater report by the end of October each year to document their continued implementation of the stormwater rule.

Nutrient Management: To implement the Tar-Pamlico Nutrient Management Rule, local Cooperative Extension Service offices were trained during winter 2003 and fall 2005 to carry out nutrient management training for applicators. Between January and March 2006, the trained Extension representatives conducted a total of 20 separate nutrient management training sessions throughout the Tar-Pamlico River Basin. Additionally, 319 funded staff in the Nondischarge Permitting Unit review application packages for non-discharge and animal feeding operation permits to make sure nutrient applications minimize the impact of land applied nutrients on surface waters.

Wastewater Discharge: In 2014, the total nitrogen load for the 15 member facilities of the Tar-Pam Basin Association, an association of point source dischargers, was calculated as 649,160 pounds, which represents 72 percent of the nitrogen cap. The total phosphorus load was calculated at 92,956 pounds, or 61 percent of the phosphorus cap.

These caps were established in the spring of 2005 when the EMC approved the third phase of the overarching basin nutrient strategy and point source agreement. Phase I of this agreement was initiated in 1990 as a technology-based point source trading program. Phase II covered another ten years through December 2004, and Phase III spanned an additional ten years through December 2014. In July 2015 the EMC approved the fourth phase of the Agreement which spans an additional ten years through May, 31, 2025. Phase IV continues the overall performance goals for the nutrient strategy of 30 percent reduction in nitrogen loading and no increase in loading of phosphorous from the baseline year 1991. It also continues the point-nonpoint source trading option wherein the Association receives collective annual end-of pipe nitrogen and phosphorous loading caps. In the event that either cap is exceeded, the association will fund agricultural practices at a predetermined cost-effectiveness rate to offset those exceedences through the NC Agricultural Cost Share program. Phase IV adds N and P limits to individual permit renewals in 2015 to complement the group loading caps and provide for better enforceability.

TAR-PAMLICO: FUTURE STEPS

Funding from 319 remains a critical component to adaptive implementation of these strategies. The Tar-Pamlico River Basin Nutrient Management Strategy has been fully implemented since 2004. While there have been a number of implementation successes, analysis of monitoring data shows that the overall goal of a 30 percent reduction in nitrogen loading to the Tar-Pam Estuary has not yet been achieved and the estuary remains on the impaired waters list for violation of the chlorophyll water quality standard.

319-funded modeler positions are being used to analyze monitoring data in the Basin to identify where nutrients loads are high or excessive and to evaluate trends. Given the estuary's continued impairment, this information will help inform DWR of the limitations of the current strategy and identify opportunities for its improvement.

e. JORDAN AND FALLS LAKE NUTRIENT STRATEGIES: IMPLEMENTATION STATUS

FALLS LAKE / JORDAN LAKE: STRATEGY BACKGROUND

In addition to the Neuse and Tar-Pamlico Nutrient Management Strategies, the EMC has also adopted two more recent management strategies to address nutrient-related water quality concerns in the Falls Lake Watershed located in the Upper Neuse River Basin and Jordan Lake watershed located in the Cape Fear River Basin. The Falls and Jordan Lake Nutrient Management Strategies became effective in August 2009 and January 2011 respectively. Each of these strategies is comprised of a comprehensive set of rules designed to reduce excess nutrient inputs that can lead to algae blooms and other water quality problems in each lake.

Jordan Lake is an impoundment in the Cape Fear River basin created by damming the Haw River near its confluence with the Deep River. The lake has suffered from water quality issues since it was created in 1983 with the North Carolina EMC declared it a nutrient-sensitive water that same year. Since that time, Jordan Lake has consistently rated as eutrophic or hyper-eutrophic, with excessive levels of nutrients present. In response to these water quality issues the EMC adopted a set of rules that make up the Jordan Lake nutrient management strategy to protect and improve water quality in the lake.

Falls Lake is an impoundment located in the upper Neuse River basin in the central piedmont that drains a mixture of agricultural and urbanized lands. The lake is a major recreational amenity and serves as the main water supply for approximately 450,000 residents of North Carolina. Following concerns in 2004 over the condition of Falls Lake, DWR began more intensive sampling for use support assessment. The field study was completed in fall 2007. Based on water quality data collected between 2002 and 2006, Falls Lake was listed as impaired for chlorophyll a on the draft NC 2008 303(d) list. The portion of the lake above I-85 was also listed as impaired for turbidity. A management strategy to address the nutrient-related water quality issues in Falls Lake was adopted by the EMC in January 2011.

FALLS LAKE / JORDAN LAKE: NPS RULE REQUIREMENTS

Much like the strategies implemented in the earlier Neuse and Tar-Pamlico River basins, the nutrient sources addressed by the Falls and Jordan Lake management strategies include agriculture, fertilizer application, wastewater discharges, and stormwater runoff from both new development and existing developed lands. However, while the Jordan and Falls Lake strategies are similar in form to the previous nutrient strategies there are some key differences. For example, the Jordan and Falls strategies include stormwater requirements for all local governments in both watersheds, the Jordan strategy call for local implementation of buffer rules, and both contain a rule requiring local governments to achieve loading reductions from existing developed lands, and a separate stormwater rule for state and federal entities, and a separate rule outlining a trading framework to maximize options for cost-effective reductions. The existing development rule requirement was included in both the Falls and Jordan strategies because of the substantial nutrient loading coming from existing development in those two watersheds. The rules also include the concept of adaptive management, given the combination of the long-term nature of any such restoration initiative, the potential costs associated with each management action, and uncertainties associated with the lake's response to lower nutrient inputs.

As part of the adaptive management approach the Falls rules require the Division to report to the Commission on specific aspects of progress in the Falls Lake watershed starting in January 2016 and every five years thereafter. Staff completed this first report in December 2015. It provides an update on implementation of the rules, evaluates changes in nutrient loading to the lake, details progress towards achieving nutrient-related water quality standards, and characterizes advances in scientific understanding and control and accounting technologies while identifying future research and data needs.

FALLS LAKE / JORDAN LAKE: SUMMARY OF IMPLEMENTATION ACTIVITIES

The rules that make up the Jordan and Falls Lake nutrient management strategies were passed in 2009 and 2011 respectively and therefore both are still in relatively early stages of implementation. As such work is currently underway in both watersheds to assist each of the regulated nutrient sources to put in place the mechanisms through which they can achieve the require reductions. A summary of the ongoing implementation activities is provided below.

New Development: In 2012, DWR staff worked with local governments to develop and adopt local stormwater programs that will enforce nutrient reductions from new development through requirements local governments adopt in their local ordinances. In large part, these ordinances were based on a model stormwater program for the Falls and Jordan Lake watersheds completed and approved by the Commission in 2011. The model program included a model ordinance, which was completed by the UNC School of Government and assisted Jordan and Falls local governments in developing their own programs to implement new development stormwater requirements of the Falls and Jordan nutrient management strategies

In the Falls Watershed, local governments adopted and began implementing their local new development stormwater programs on July 2012. New development programs for Jordan were approved in May 2012.

Requirements to implement the Jordan programs, however, were delayed two years to August 2014 by legislative action and subsequent legislation in 2015 has delayed implementation until August 2020. Furthermore this 2015 legislation prohibits any local government from voluntarily implementing nutrient controls on new development within their jurisdictions. Unlike Jordan, the Falls rules have proceeded without successful challenge. Reports documenting Falls new development activity and load reductions are submitted to the Division annually. As an indicator of development activity, as of June of 2015 there have been 50,766 lbs. of nitrogen and 3,645 lbs. of phosphorus nutrient offsets purchased by new development projects since mid-2012 in partial compliance with rule requirements.

Agriculture: Agriculture requirements are being implemented the Watershed Oversight Committees (WOCs) in both watersheds which serve to assist farmers with complying with the rule requirements. The first annual reports documenting agriculture’s progress towards their reduction goals were presented to the WQC in March 2013. The Falls WOC also submitted annual reports in 2014 and 2015. In the 2015 annual report, which covers agriculture activities through 2014, the agriculture sector estimates that they are exceeding the collective nitrogen loss reduction goal with a 46 percent nitrogen reduction in the watershed.

The second Jordan annual report was submitted to DWR in April 2014. The WOC estimated that the agriculture sector had exceeded its nitrogen loss goals in 2011 in two of three Jordan subwatersheds and was close in the third as detailed in the following table.

Subwatershed	Required nutrient reductions	2010 nitrogen loss reductions from cropland	2011 nitrogen loss reductions from cropland
Lower New Hope	No increase in nitrogen or phosphorus	50%	42%
Upper New Hope	35% nitrogen, 5% phosphorus	48%	29%
Haw	8% nitrogen, 5% phosphorus	33%	15%

In 2015 the WOC did not meet its reporting requirement due to staff workload issues, but Soil and Water will report on the preceding two years of activity in 2016. While annual reporting will continue, the 2013 and 2015 Jordan legislative actions have pushed off agriculture rule compliance dates by a total of 6 years, from 2015 to 2021.

To assess agriculture’s phosphorus compliance, Jordan and Falls WOCs are using a qualitative approach that mirrors that used in the Tar-Pamlico by annually comparing of 12 indicators of phosphorus with the baseline year to identify whether the risk of loss is increasing or decreasing.

In 2015 the qualitative phosphorus indicators suggest that phosphorus loss has not increased in the Falls watershed, nor has it in Jordan watershed as of the 2014 report.

Agriculture in the Falls watershed is also required to account for pasture-based livestock operations that potentially affect nutrient loading. This is done through the use of a pasture point accounting system that quantifies changes in the extent of livestock-related nutrient controlling BMPs. The point system assigns nitrogen “point” credit values for pasture BMPs in lieu of percent reductions based on recognition that research data are insufficient to provide the level of confidence required for attributing percent reductions in load. For the purposes of the Falls Lake Agriculture Rule, 20 pasture points are required to demonstrate compliance with the Stage I nitrogen reduction goal of 20%. From 2008 through 2012 the Falls agriculture community reported 60.7 pasture points, due primarily to extensive amounts of exclusion systems installed.

Wastewater: Point sources in both watersheds are currently implementing measures to reduce their end of pipe nutrient loads to meet their Stage I limits detailed under each strategy and incorporated into the NPDES permits. Point sources are required to meet their Stage I load limits by 2016 in Falls. Point Sources in the Jordan watershed achieved their required phosphorous requirements by the end of 2010. Nitrogen requirements in Jordan have been delayed by 2013 and 2015 session laws to 2024.

The three major wastewater dischargers in the Falls watershed have begun optimizing their performance and implementing nutrient controls to meet their Stage I allocations by 2016. By 2014 the three facilities collectively reduced their collective nitrogen and phosphorus loads by 20 percent and 57 percent respectively from the 2006 baseline.

Existing Development: Local governments are still in the planning stages of achieving the required reductions from existing developed lands in their jurisdictions within both the Falls and Jordan watershed. Jordan local governments began complying with Stage I plans in 2011, implementing mapping, illicit discharge removal, education and retrofit identification programs. Staff continues to work on the development of model local programs that will provide load allocations and credit accounting for BMPs implemented to achieve reductions from existing developed lands. Staff presented a draft of the model program to the July 2013 EMC and provided an update to the September 2014 EMC. Staff continues to work collaboratively with affected parties to expand the list of available creditable measures they can use to achieve nutrient reductions. These extra tools are being designed to help local governments achieve loading reductions in the most cost effective manner possible. The Division plans to bring a final model program with these additional creditable measures to the Commission within the next two years for approval.

Stage 2 requirements for Jordan local governments, which would involve implementing plans to achieve load reductions toward strategy goals, have been delayed a total of 6 years by 2013 and 2015 session laws, to 2021 or 2024 depending on the subwatershed. Implementation delays for state and federal entities within the Jordan watershed mirrors the delays for local governments.

FALLS LAKE / JORDAN LAKE: 319 SUPPORT

Funding from 319 remains an important component to effective implementation of the Falls and Jordan strategies. A number of strategy needs have been met over the years by 319 competitive contracts. Some of these – accounting tools, source characterization, paired watershed monitoring were funded prior to the new national guidance on use of watershed funds. Other projects funding implementation are just completing or still active. Provided below are brief summaries of recently completed or active projects funded by the 319 grant program in support of the strategies:

Jordan Watershed Agriculture BMPs_[DA2]

The main focus of this project is to assist farmers with implementing on the ground agricultural best management practices in the Jordan Lake watershed. There are eight primary goals and two secondary goals that will be achieved by this project. 1) Prioritize the implementation of BMPs to affect those watersheds listed as impaired; 2) To reduce nitrogen loading by 45,000+ pounds; 3) To reduce phosphorus loading by 9,000+ pounds; 4) To reduce soil loss by 9,000+ tons; 5) To educate the farm community of the Jordan Reservoir Nutrient Strategy while making gains in the required reductions; 6) Forward applicable projects to cooperating agencies (EEP stream restoration projects, CREP, NCSU WQG, etc.); 7) To remain active in local watershed planning efforts and to promote applicable projects to cooperators; 8) To look for additional sources of funding to implement additional BMPs. The two secondary goals are: 1) Promote the basin planning effort with the local soil and water conservation district boards and local farm community; 2) Maintain and enhance relationships with cooperating agencies, NPOs and NGOs.

Implementation of Horse Operation Best Management Practices in Falls Watershed_[HJ3]

This project will fund 28 individual best management practices installed on horse farms in the Falls Lake watershed. Horse operation comprise an abundant and increasing form of agriculture in the Falls Lake watershed, and are included as agricultural operation targeted for nutrient reductions in the 2010 Falls Lake Nutrient Management Strategy. However, horse operation have had limited access to cost share funds and are unable to afford BMPs without assistance. This project will address these needs by: 1) installing an estimated 28 BMPs on a minimum of six horse operations in Falls Lake watershed; 2) providing education and outreach to the equestrian community in the Falls Lake watershed on the benefits of BMPs; and 3) providing training on equine specific BMPs to the NC Division of Soil and Water Conservation (DSWC) and County Conservation District staff, to allow them to better provide assistance to horse operations through cost-share programs in the future. A unique partnership, consisting of the DSWC, Durham, Granville, Person, Orange, and Wake Soil and Water Conservation Districts, the NC Horse Council, and Sustainable Stables has been developed to successfully implement this project.

Paired Watershed Study in the Jordan Watershed_[DA4]

The purpose of this project is to conduct water quality monitoring before the implementation of the agriculture rule in the Jordan Lake watershed to provide the background data to quantify the effects of the rule. Two cropland and pasture watersheds were monitored for 2.5 years. Biosolids and commercial fertilizer applications and animal stocking numbers were recorded for each pasture watershed. Crops and fertilizer application were recorded for the cropland watersheds. Statistical analyses of monitoring data from the paired watersheds were good indicating that the chances of documenting moderate changes in export loads were favorable.

Development of New Development Stormwater Tool for Falls & Jordan Watersheds

The JFSAT was created to assist users with utilizing stormwater control measures (SCMs) to meet the annual nitrogen and phosphorus limits under the new development stormwater requirements of the Falls and Jordan Lake strategies. The first version of the Jordan/Falls Lake Stormwater Nutrient Load Accounting Tool (JFSAT), a Microsoft Excel-based program, was created in 2010. The JFSAT estimates annual nutrient loading generated by a user-defined watershed and allows users to estimate runoff volume and nutrient load reductions that may be attained by implementing stormwater BMPs within the watershed. Beta-testing of an updated version of the Jordan/Falls Lake Stormwater Nutrient Load Accounting Tool (JFSAT) with added functionality was conducted in 2015. Division staff are currently addressing stakeholder comments received during this period and are finalizing the JFSAT accordingly.

Jordan Lake Watershed Model Implementation

The purpose of this project was to develop a watershed model and accompanying report that will be used to assign existing development load reduction goals for all municipalities, counties, and state and federal entities in the Jordan watershed as required by the Jordan Existing Development Stormwater Rule. The model was produced in 2014 to estimate nutrient loading allocations for existing development for affected parties in the Jordan Lake Watershed, in accordance with Session Laws 2009-216 and 2009-484. This model will be used to estimate the nutrient loads from existing developed lands during the baseline period of the strategy.

Division staff reviewed the Jordan Lake Watershed Model contract final work products, provided staff input on follow-up needs and process, and participated in meetings to plan for the best use of model outputs in establishing local government existing development nutrient loads.

Jordan Lake Updated Delivery Factors and 30 Day Informal Comment Period

As part of the 2014 Jordan Lake watershed modeling effort to support the existing development stormwater rule implementation, revised delivery factors were produced for 152 small watersheds. These revised delivery factors/zones are considered more accurate than the existing factors because they were produced as outputs of the latest watershed model that integrated more sophisticated routing processes, water quality data, and calibration functions. To simplify this information for use by regulated parties, Division staff aggregated these factors into 10 or fewer delivery zones for each nutrient, varying by the three Jordan strategy subwatersheds. Division staff are currently addressing stakeholder comments received during this comment period. Once these updated delivery factors become effective, regulated parties such as developers, mitigation bankers and local governments will be required to use them for all applicable purposes under the Jordan strategy. These purposes may include for the calculation of the following items: delivered load reduction needs, delivered load reduction credits and existing development reduction needs.

VI. 2015 North Carolina NPS Contacts

General NPS Activities

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Agriculture

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Urban Stormwater Runoff

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Construction

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On-site Wastewater Disposal

Nancy Deal
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<http://ehs.ncpublichealth.com/oswp/index.htm>

Forestry

Bill Swartley
North Carolina Forest Service
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Mining

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Groundwater

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Education

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NC DENR Office of Environmental Education and Public Affairs
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<http://www.eenorthcarolina.org/>

APPENDIX A

North Carolina FY2015 319 Grant Exemption Request – Documentation

1. 9-element equivalency for EEP watershed plans

See separate attachment which documents the location of the 9 elements in each of the four EEP watershed plans.

2. Section G criteria from FY14 Section 319 Program Guidance (ps. 40-41)

a) A statement that the Projects are aligned with the priorities as described in the state NPS management program;

All four projects are aligned with the NPS Management Plan's priorities by implementing Goal #2 to restore NPS-impaired waters by supporting the implementation of restoration strategies for prioritized impaired watersheds. More specifically, the projects will help achieve and exceed the restoration goal identified in the NPS Management Program's Five-Year Action Plan (page 41) to implement a minimum of four restoration projects annually. The DWR workgroup is actively meeting to finalize the Planning Section's list of priority impaired watersheds for restoration. The current draft of the list identifies the five watersheds in which the projects are located within the top 10% of prioritized water bodies. It should also be noted that when these projects started, they were implementing the NPS program's priority at the time to implement watershed plans to restore impaired water bodies.

b) a statement of assurance/certification that these projects will meet the goals of the watershed project funding requirement;

Section IX. B. of the 319 Program Guidance (p. 34) states that watershed project funding must be directed toward, "restoring impaired waters through the implementation of watershed based plans (WBPs) or acceptable alternative plans. Activities necessary to implement WBPs or acceptable alternative plans for watersheds containing one or more impaired waters are considered restoration activities." The four CWMTF projects offered for the exemption request meet this requirement. All of the projects are implementing activities to restore impaired waters and are guided by watershed based plans.

The implementation projects include (total leverage of implementation funding from CWMTF equals \$4,011,110):

- 1) Restoration/Main Stem McDowell Creek 2012-437 – Mecklenburg County LUESA (Implementing McDowell Creek Watershed Management Plan)
 - a. Total funds \$2,200,000 (CWMTF provided \$400,000, match \$1,800,000 represents cash from Charlotte Mecklenburg Storm Water Services Capital Reserve)
 - b. Stream restoration, enhancement, and stabilization designs and their implementation will provide for permanent vegetates riparian buffers and permanent legal protection of those buffers.
- 2) Restoration/Ararat River Phase III Stream Restoration 2012-437 – Resource Institute, Inc (Implementing the Ararat River Watershed Management Plan)
 - a. Total funds \$625,000 (CWMTF provided \$400,000, match \$225,000 represents grants from the North Carolina Department of Transportation)

- b. Approximately 1,800 linear feet of the Ararat River, from US Highway 52 bridge will be completely restored. Upstream of the bridge 1,100 linear feet and approximately 700 linear feet downstream.
 - 3) Restoration/Lower Creek Stream Restoration 2013-402 – Caldwell Soil and Water Conservation District (Implementing Lower Creek Watershed Plan)
 - a. Total funds \$503,953 (CWMTF provided \$162,853, match \$341,100 represents donated easement value and in-kind match)
 - b. Stream restoration and stabilization of 2,172ft of Lower Creek.
 - 4) Restoration of North Toe River 2013-416 – Toe River Valley Watch (Implementing North Toe Restoration Plan)
 - a. Total funds \$682,157 (CWMTF provided \$375,000 with match in-kind match of \$307,157)
 - b. Stream restoration and enhancement of over 2350ft of stream bank.
- c) *that the projects will be completed within the FY15 Grant period;***

All of the CWMTF projects will be completed during the FY15 Grant period.

- d) *that the projects used to meet the exemption will be reported in EPA's Grants tracking System (GRTS) in the same manner as Section 319 funded projects;***

North Carolina is prepared to report all projects counting towards the exemption in EPA's GRTS system in the same manner as Section 319 funded projects. DWR 319 Program staff will coordinate with CWMTF staff to ensure project reports are obtained in a timely manner in order to meet GRTS reporting deadlines.

- e) *Assurance that no federal funds count as leveraging; and,***

North Carolina's 319 program staff has reviewed the budget and contract information for the four CWMTF projects to ensure that the match funds counted are not from federal funds. Where these projects have leveraged federal funding, those funds have not been included in what has been counted and claimed as part of the FY15 319 exemption request.

- f) *That non-federal funds used for 40% match are not being used to meet the exemption.***

None of the funds (either the state funds awarded by CWMTF or the associated non-federal match) have been counted toward the required 40% match for the FY2015 319 grant. All funds associated with the six projects counted toward the exemption have been handled separately from the non-federal 40% match.

[McDowell Creek Watershed Management Plan](#)

The McDowell Creek Watershed Management Plan has been reviewed and accepted by US EPA via the Targeted Watershed Program

[Ararat River Watershed Plan](#)

Ararat River 9-Element Reference Material

9 elements in WBP	Ararat LWP (2013)
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9 elements in WBP	Ararat LWP (2013)
(a) Identification of causes of impairment and pollutant sources or groups of similar sources that need to be controlled to achieve needed load reductions, and any other goals identified in the watershed plan	ps. 55-58
(b) An estimate of the load reductions expected from the management measures	Project Atlas (already provided): explanation of STEPL to determine loading, p. 45
(c) A description of the nonpoint source management measures that will need to be implemented to achieve load reductions, and a description of the critical areas in which those measures will be needed to implement this plan	Separate project atlas doc (already provided)
(d) An estimate of the amount of technical and financial assistance needed, associated costs and/or sources and authorities that will be relied upon to implement this plan	Watershed Assessment Report: p. 24, Voluntary Ag Districts and available funds
(e) An information/education component to enhance public understanding of the project	Project Atlas doc: BMP location opportunity for educational outreach (ps. 1, 30, 36)
(f) A schedule for implementing the NPS management measures identified in this plan that is reasonably expeditious	Ararat-Pilot Mountain LWP Fact Sheet has a general project schedule An improved more specific schedule will be included in the 2013 final documentation.
(g) A description of interim measurable milestones for determining whether NPS management measures or other control actions are being implemented	In progress, to be completed 02/2014
(h) A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made towards attaining water quality standards	In progress, to be completed 02/2014

[Lower Creek Watershed Restoration Plan](#)
[North Toe River Watershed Action Plan](#)

APPENDIX B. Leverage Report Documentation

2013 Applications

<i>Project ID</i>	2013-402
<i>Applicant Name</i>	Caldwell Soil & Water Conservation District - Rest/ Lower Creek Stream Restoration
<i>Applicant Type</i>	Local Government
<i>Purpose</i>	Restoration
<i>Request \$</i>	\$162,853
<i>Total \$</i>	\$503,953
<i>Duration (months)</i>	12
<i>Watershed</i>	Catawba
<i>Region</i>	Western
<i>County</i>	Caldwell
<i>Contact</i>	Michael Willis
<i>Title</i>	Chairman
<i>Organization Name</i>	Caldwell Soil & Water Conservation District
<i>Address</i>	120 Hospital Ave NE
<i>City</i>	Lenoir
<i>State</i>	NC
<i>Postal Code</i>	28645-
<i>Work Phone</i>	(828) 758-1111
<i>Mobile Phone</i>	(828) 312-9000
<i>Fax Number</i>	(828) 758-7257
<i>E-Mail</i>	mtncrestllc@yahoo.com



CALDWELL SOIL AND WATER CONSERVATION DISTRICT
120 Hospital Avenue NE • Lenoir, NC 286455 • (828)-758-1111

NARRATIVE
THE ROCKY ROAD SOUTH STREAM RESTORATION ON LOWER CREEK

Requested funds:

\$162,853

Give the amount of funds you are requesting from CWMTF

Matching funds and source(s):

\$25,824 is a donated easement value

\$315,276 is the proposed In-kind matching value

Scope of Work:

Conservation plan of Operation (CPO) development and revisions

- The District Soil Conservationist will develop and revise the CPO for the project.

Supporting practices design and installation

- The District Soil Conservationist designed Best Management Practices for the site, wrote contracts for these practices, over sought construction and certified practice "as-builts".
- The District administrative assistance prepared documentation for reimbursement.
- Caldwell County administration reimbursed contractors.
- EEP administration reimbursed Caldwell County

Engineer site survey

- The Division of Soil and Water Conservation surveyors has conducted the site survey

Engineered design plans

- The Division of Soil and Water Conservation Engineer will prepare the design for the stream restoration component of the project.
- The District Soil Conservationist will design the supporting practice "fence" for the project.

- The District Soil Conservationist will prepare the permit documents (the DWQ 401 water quality certification/USACES Section 404 permit)

USDA/NRCS – cultural resources review

- USDA/NRC Cultural Resource Specialist will conduct a cultural resources survey. The NRCS District Conservationist will administer the federal cost share program “EQIP” for the project

Project installation

- A contractor or contractors will be hired through a competitive bid process to install the stream restoration and fencing for the project

Construction oversight

- The Division of Soil and Water Conservation Engineer will provide oversight for the stream restoration phase of the project
- The USDA-NRCS District Conservationist will provide oversight for the fencing phase of the project

Construction Check and “As Built” Certification

- The Division of Soil and Water Conservation Engineer will provide construction certification for the stream restoration phase of the project
- The District Conservationist will provide construction certification for the fencing phase of the project

Administrative oversight

- The District Soil Conservationist will prepare requests for payments
- The administrative assistant will coordinate with county administration for contractor payment compensation
- Caldwell County will write compensation checks to contractor/s

Project Description and Need

The Rocky Road South Stream Restoration on lower Creek is proposed for the stabilization and enhancement of a 2,172’ section of Lower Creek South of the Rocky Road Bridge located in the Town of Gamewell in Southwestern Caldwell County. Lower Creek is in the Catawba River Basin and is a tributary of the Catawba River. Lower Creek is on the NC 2010 integrated report category 4 and 5 303(d) List for standard violation, turbidity.

Other conservation efforts in the project area include the implementation of a section 319 Water Quality grant “Lower Creek Watershed Restoration Implementation Plan”, providing conservation technical and financial assistance to eligible sites for water quality restoration, protection and enhancements through state and federal cost share programs, Ecosystem Enhancement Program projects and the Lower Creek Advisory Team stakeholders group that meets to discuss and promote water quality improvements in the Lower Creek Watershed.

The stream restoration project will be protected from domestic animals with a permanent fence erected along the perimeter of the riparian buffer. The project should be self maintained once installed. Native woody and herbaceous vegetation will be an important component of the success of the project. The operation and maintenance plan (OMP) will serve as a guide for the landowner if problems should arise following implementation. A copy of the OMP is furnished below.

STREAMBANK AND SHORELINE PROTECTION

OPERATION AND MAINTENANCE PLAN

January 13

This plan will provide specific instructions for operating and maintaining the system to insure that it functions properly.

Scheduled maintenance:

For 0-5 years following installation, inspect the entire project for damage to the structures and/or vegetation following storm events which:

- Produce significant runoff or
- Raise the normal water elevation of the stream

Otherwise, inspect the project for damage annually.

From 5-10 years, the vegetation should become well established. Annual inspection of the project will be conducted.

For vegetative damage, guidelines for establishment and repair of tree and shrub seedlings, livestock, and herbaceous vegetation will be followed. The vegetative repair shall be made during the next suitable planting date for the specific species of plants.

In the event structures are damaged, the Soil and Water Conservation District Office will contact the division engineer for an appointment to evaluate the damage.

. *(It is important to address these damaged areas hastily as a way to reduce further damage).*

Water Quality Objectives and How They Would Be Achieved

Objectives of the project are to reduce drastically the sediment load delivered to Lower Creek by the erosive force of the stream on its banks.

To achieve this result, pending Best Management Practices (Streambank and Shoreline Protection - 2,172', and livestock exclusion fencing - 4,272') in the conservation plan will be implemented. Other supporting practices have been installed prior to the CWMTF application.

Additional Information

The conservation plan of Operation (CPO) written for the landowner was developed to focus on the natural resource concerns prevalent on the property. The landowner has agreed to all of the planned elements described in the CPO. Many of the conservation practices have been installed and are being maintained and managed as designed.

The uniqueness of our proposed project is that work has been completed in advance of the stream restoration work of which we are proposing for a CWMTF grant. \$90,500 has gone toward this project to this point in time. With the additional funds provided by CWMTF, the project can finally be completed as planned.

Here is a brief history of the proposed project:

This project was first envisioned back in 2003. Mr. Ronnie Cardwell contacted the Caldwell Soil and Water Conservation District Office and requested that someone make a site visit for the reason of streambank erosion along Lower Creek located on the farm. Kevin Clark (District Soil Conservationist) and Cecil Haynes (NRCS Soil Conservationist) visited the site and found significant erosion along the banks of Lower Creek. Through conversation, Kevin suggested that the Ecosystem Enhancement Program (EEP) be invited to take a look at the site as a possible technical and funding resource for stabilizing the site. EEP staff looked at the site and therefore proceeded with the project. Fast forward to September 22, 2011. At the Lower Creek Advisory Team Meeting, EEP representatives informed Kevin and others that they would no longer carry out the project implementation. Mr. Cardwell had been informed of this development as well. Mr. Cardwell contacted the District office. Kevin Clark and Jeff Young (Division of Soil and Water Conservation Engineer) met with Mr. Cardwell on-site. Prior to the CWMTF application, in January 2012 the site survey for the project design was completed by NCDA & CS surveyor, Engineer and Caldwell SWCD Soil Conservationist.

Other Possible Funding Sources

As mentioned earlier, the Ecosystem Enhancement Program (EEP) was initially pursued to fund the project. EEP did quite a bit of work on the project, but did not finish it to completion. The Caldwell SWCD also applied for a continuation of the Section 319 grant "Lower Creek Watershed Restoration Implementation Plan". Funds were requested for BMP work. The grant was not funded for the 2011/2012 cycle. For the 2013 grant application we anticipate using the USDA-NRCS EQIP program to fund a major portion of the project.

CONSERVATION PLAN MAP

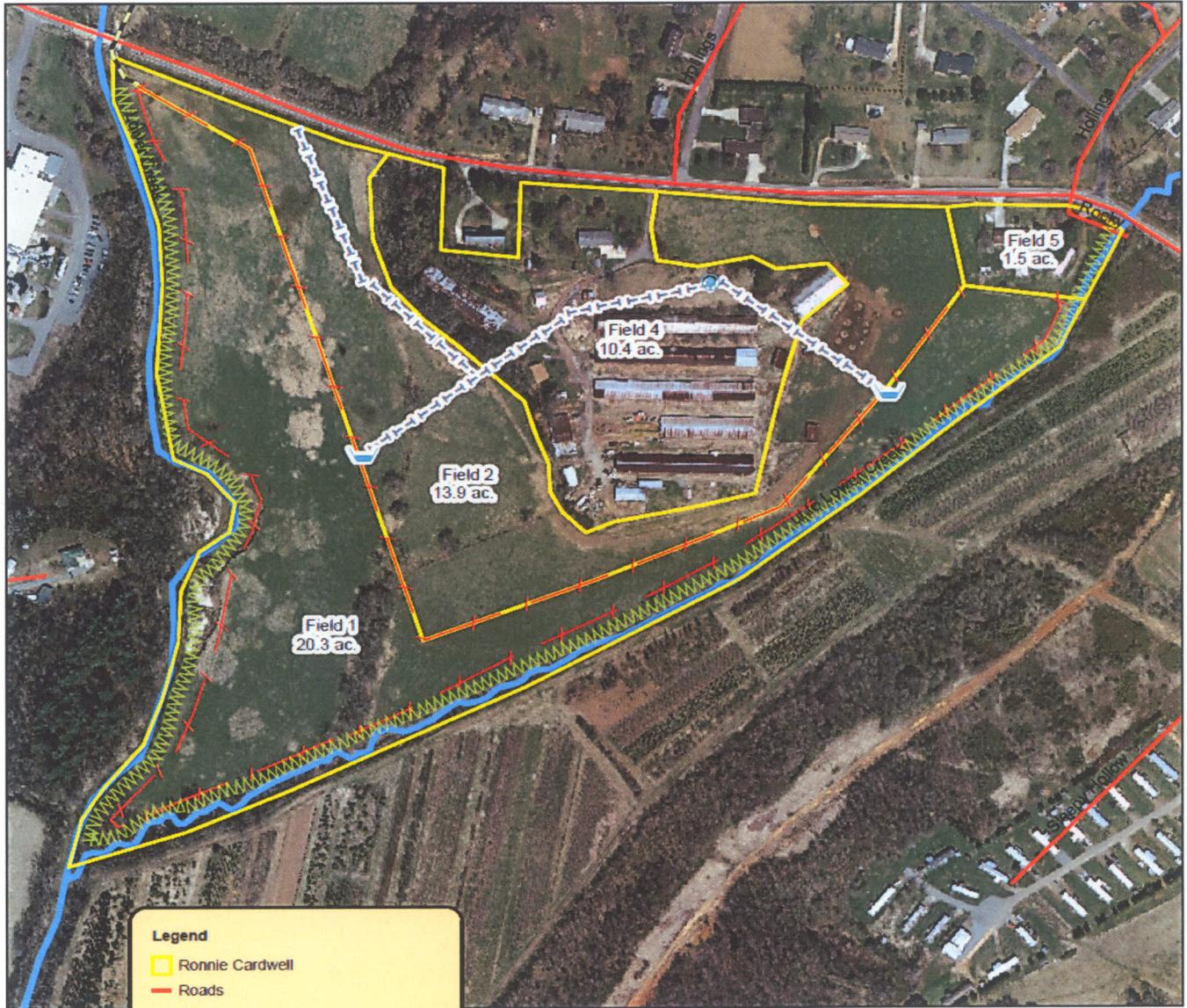
Date: 01/24/2012

Field Office: LENOIR PROGRAM DELIVERY POINT

Agency: SWCD

Assisted By: Clark, Kevin K

District: CALDWELL SOIL & WATER CONSERVATION DISTRICT



Legend

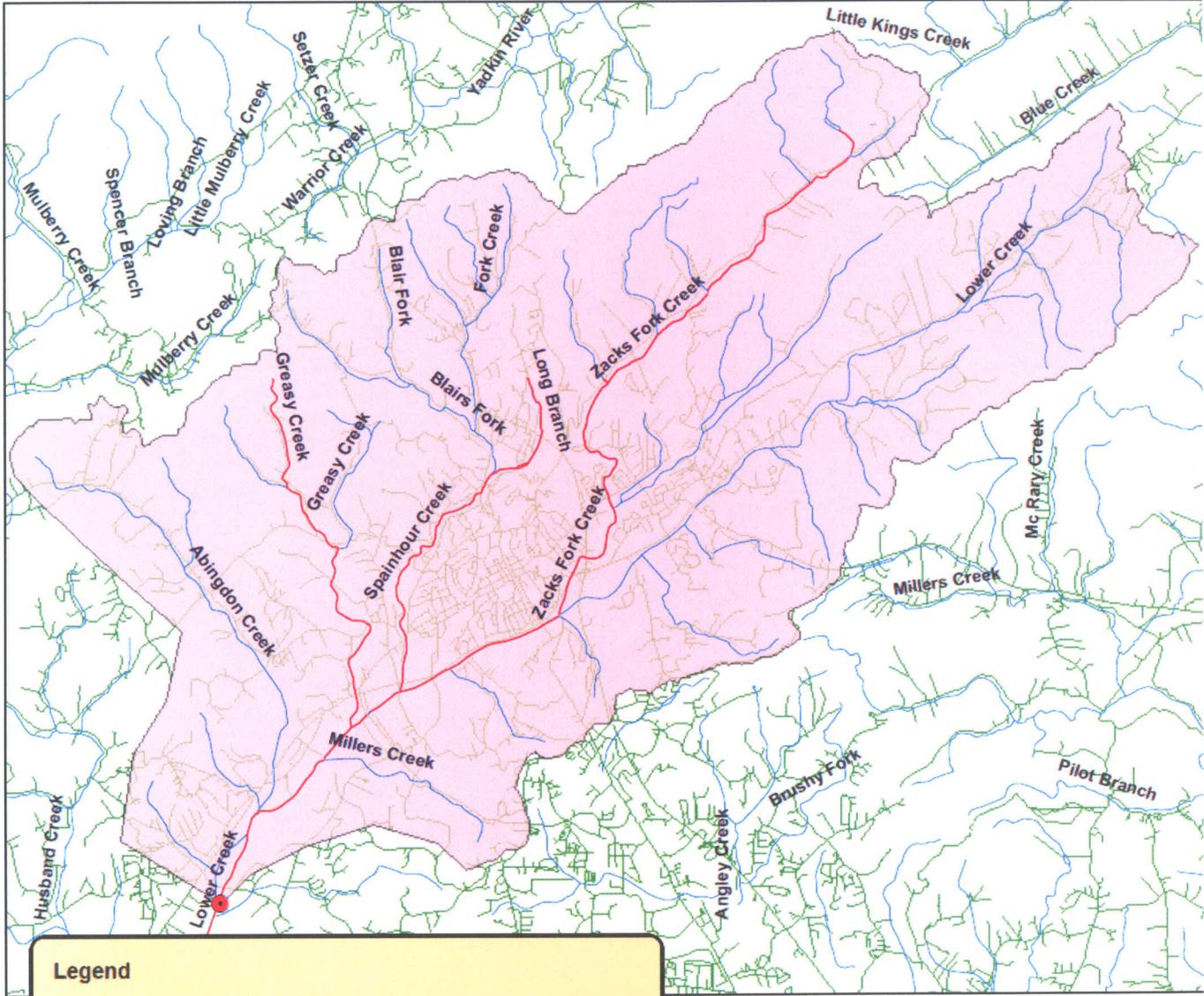
- Ronnie Cardwell
- Roads
- Streams
- Water Well
- Watering Facility
- Practices (lines)**
- Animal Trails and Walkways
- Fence
- Pipeline
- Streambank and Shoreline Protection



Rocky Road South Stream Restoration on Lower Creek

Customer(s): CALDWELL COUNTY
District: CALDWELL COUNTY
SOIL & WATER CONSERVATION
DISTRICT

Date: 12/13/2011
Field Office: LENOIR FIELD OFFICE
Agency: Caldwell Soil and Water Conservation District
Assisted By: Kevin Clark



Legend

- Rocky Road South Stream Restoration on Lower Creek
- 303(d) list Impaired Streams
- Caldwell Streams
- Rocky Road South Stream Restoration Drainage Area
- Caldwell Roads





Deteriorating slopes



2003 visit



Before supporting BMP



Supporting BMP (Stock Trail)



Supporting BMP (Fencing)



Supporting BMP (Watering Facility)

2013-402



CLEAN WATER MANAGEMENT TRUST FUND RESTORATION/STORMWATER APPLICATION FORM

Updated 12/01/2012

A complete application package must include THREE UNBOUND sets of the items listed below, suitable for photocopying. Refer to the Restoration/Stormwater Application Guidelines for details.

1. Application Checklist

This application is for:

- a restoration project
- a stormwater project
- both restoration and stormwater

Project Narrative: Follow the format given in the Restoration/Stormwater Application Guidelines.

CWMTF Restoration/Stormwater Application Form, including Project Budget on CWMTF template and, for stormwater applications, responses to Common Criteria questions

Maps: 8.5" x 11"

Letter from NC Ecosystem Enhancement Program stating the project is not needed for mitigation purposes.

List of applicant's governing board members and explanation of how they are appointed.

Authorization to submit an application and to enter into grant contract with CWMTF.

501(c)(3) organizations: certification of tax-exempt status.



Applicant Signature

Certification by Chief Elected Official/Authorized Representative

The attached statements and exhibits are hereby made part of this application and the undersigned representative of the applicant certifies that the information in this application and the attached statements and exhibits is true, correct, and complete to the best of his/her knowledge and belief.

For local government applicants only: The undersigned representative further agrees to comply with USEPA and North Carolina stormwater rules and with FEMA and State floodplain management rules, if applicable to the project.

Signature of Chief Elected Official/Authorized Representative



Typed Name: Michael D Willis
Typed Title: Chairman, Caldwell SWCD
Date: 1/29/13

CWMTF Restoration/Stormwater Application Form 12.01.12

2. Applicant Information

Organization Name: Caldwell Soil and Water Conservation District
501(c) (3) NC Association of Conservation Districts Employer ID 23-7075599,
DLN: 170530548338007
Applicant Type: Local Government Organization

Project Title: Rocky Road South Stream Restoration on lower Creek

Requested CWMTF Grant Amount :	
(Total CWMTF Request from Budget Template)	\$162,853
Total Project Cost:	
(Total Project Cost from Budget Template)	\$503,953

Grant Contract Contact Name and Title (responsible for signing grant contract) : Michael D. Willis

Contact Address: Caldwell Soil and Water Conservation District
120 Hospital Avenue, NE
Lenoir, NC 28645

Work Phone: 828-758-1111
Fax Number: 828-758-7257

Mobile Phone: 828-312-9000
Email: mtncrestllc@yahoo.com

Project Administrator Name and Title (responsible for administering the project): Kevin K Clark

Work Phone : 828-758-1111, 828-439-9727, ext. 3
Email: kevin.clark@nc.nacdnet.net

Federal Tax Number, 56-6001967
Fiscal Year End Date, June 30
DUNS Number (nonprofits)

3. Project Location

River Basin, Catawba
County, Caldwell
CWMTF Region, Mountains

Latitude (degrees, minutes, seconds) 35° 51' 50.07"
Longitude (degrees, minutes, seconds) 81° 35' 41.88"
8 digit hydrologic unit 03050101

4. Project Setting – Receiving Waters, Targeted Areas, Significance of Waters

Links to Determine Receiving Water Information, CWMTF-Targeted Areas, and Significance of Waters (questions 4.1-4.3)

- For Division of Water Quality Basinwide Plan, including stream name, index number, classification, use support, cause and source of impairment <http://portal.ncdenr.org/web/wq/ps/bpu/basin>,
- For 303(d) list <http://portal.ncdenr.org/web/wq/ps/mtu/assessment>,
- DWQ listing of stream names, index numbers, and classifications <http://portal.ncdenr.org/web/wq/ps/csu/classifications>
- Ecosystem Enhancement Program Local Watershed Plans <http://portal.ncdenr.org/web/eep/lwps>
- Source Water Assessment Program – Drinking Water Susceptibility Ratings <http://www.ncwater.org/pws/swap/pages/swap.htm> For help call the Public Water Supply Section at 919-715-2633

4.1. Receiving Waters Information

Complete the table below. (Note: 'Receiving waters' are the water body immediately downslope/downstream of the project site and additional water bodies within 5 miles downstream of the project site.)

<i>Name of Receiving Water</i>	<i>DWQ Stream Index Number</i>	<i>Stream Classification</i>	<i>Use Support Rating</i>	<i>Cause of Impairment</i>	<i>Source of Impairment</i>
Lower Creek	11-39-(6.5)	WS-IV	Impaired (Fair bioclassification; turbidity standards violation)	Excess sedimentation, excess nutrients, poor habitat	Urban stormwater, non-urban development, streambank erosion, lack of riparian buffer, Lenoir WWTP, fertilizer runoff, livestock manure
Catawba River	11-(37)	WS-IV,B; CA	Impaired	Potential standards violation (pH)	Nutrient inputs from WWTPs, non-point nutrient and sediment runoff

4.2. CWMTF-Targeted Areas

Mark any items listed below that apply to the proposed project. An explanation of each is found in the Restoration/Stormwater Application Guidelines

- Headwater Streams – 1st order streams
- Elimination of Stormwater outfalls to the ocean
- Shellfish waters (SA) or Trout waters (Tr)
- M Urban 303(d) listed stream
- Water Supply Watershed (only WS I-II)
- M Drinking Water Susceptibility Ratings – Higher or Moderate

4.3. Significance of Waters

Mark any of the following that apply directly to the receiving waters (within 5 miles downstream of the proposed project).

<p><u>Division of Water Quality stream classification</u></p> <p>M <u>303(d) list (most recent list)</u> Outstanding Resource Waters High Quality Waters (not including WS I, II or SA waters) Nutrient Sensitive Waters Water Supply I Water Supply II Water Supply III</p> <p>M <u>Water Supply IV</u> Water Supply V Unique Wetlands</p> <p>M <u>B</u> <u>Tr</u></p>	<p><u>Natural Heritage Program Rare Species and Significant Habitat</u></p> <p>Rare aquatic species (S1G1, S1G2, S1G3, S2G2, S2G3) list species:</p> <p>Rare aquatic species (S3) List species: National Significant Aquatic Habitat State Significant Aquatic Habitat Natural Heritage Significant Area</p>
<p><u>Division of Marine Fisheries Shellfish Area</u></p> <p>SA, approved for harvest by Division of Environmental Health SA, conditionally approved for harvest by Division of Environmental Health other SA areas</p>	<p><u>Fish Habitat</u></p> <p>National Marine Fisheries Service Essential Fish Habitat Division of Marine Fisheries Critical Habitat Area Wildlife Resources Commission or Division of Marine Fisheries Primary Nursery Area Wildlife Resources Commission Wild Tr</p>
<p><u>Division of Water Quality biological stream rating</u></p> <p>Excellent bioclassification Good bioclassification</p>	<p><u>Wetlands and Aquatic Vegetation</u></p> <p>Division of Coastal Management exceptional wetland Submerged Aquatic Vegetation</p>
<p><u>Source Water Assessment Program</u></p> <p>M <u>Drinking Water Assessment Area Susceptibility – Higher</u> Drinking Water Assessment Area Susceptibility – Moderate Drinking Water Assessment Area</p>	<p><u>Other</u></p> <p>M <u>Ecosystem Enhancement Program local watershed planning area</u> Riparian Corridor Plan Impaired waters but not on 303(d) list</p>

Susceptibility - Lower	
<p>4.4. Protection or Improvement of Waters with Special Uses Check any of the following designations or special uses that apply to the receiving waters of the proposed project (within 5 miles downstream of the proposed project). National Wild and Scenic Waters American Heritage River National Seashore, National or State Park, National Wildlife Refuge, Coastal Reserve or National Estuarine Research Reserve Exceptionally heavy recreational use Type of Recreation: M <u>No special uses indicated</u></p> <p>Distance from the project site to the waters with the above-checked special use(s): _____ miles Reference the source for your response:</p>	
<p>4.5. Protection of Future Public Surface Drinking Water Supply Is the proposed project within 5 miles upstream of a future, public, surface drinking water reservoir or intake? M Yes, and the reservoir or intake site has received a Record of Decision (all state and federal permitting complete) Yes, and NC Division of Water Resources concurs the reservoir or intake site is the best option for future drinking water There is no future public drinking supply reservoir or intake within 5 miles downstream of the project area.</p>	
<p>5. Project Information</p>	
<p>5.1. Contribution to an Ecological Network of Riparian Areas Would the proposed acquisition contribute to an ecological network of riparian areas? Choose from the following: Protects mature riparian ecosystems, pristine wetland or other relatively pristine riparian areas of ecological significance and provides connection to other such protected riparian areas Protects mature riparian ecosystems, pristine wetlands or other relatively pristine riparian areas of ecological significance, but does not provide connection to other such protected riparian areas. M <u>Involves neither pristine nor mature systems of ecological significance in riparian areas</u> Name any Natural Heritage Areas (designated by the NC Natural Heritage Program) or special designations if applicable:</p>	
<p>5.2. Project Need Identified in a Long-Term Management Plan 5.2.1. Explain whether and how the proposed project is strategically related to a long-term or regional management plan (such as Division of Water Quality Basinwide Water Quality Plan, Ecosystem Enhancement Program Local Watershed Plan, or Wildlife Resources Commission State Wildlife Action Plan).</p>	

Plan title: EEP - Lower Creek Watershed Management Plan
 Date Completed July 2006
 Specific page reference: Cover Page
 Plan title: DWQ - Catawba River Basin Plan, Chapter one, Catawba River Headwaters Subbasin
 Date Completed 2010
 Specific page reference: Chapter one

5.3. Measurable and Enduring Outcomes

Project is ready to go and water quality improvements or protection resulting from the proposed project:

- M Would be evident and measurable
 Could be part of an overall initiative that could provide documented improvements in the future
 Would be probable but difficult to document

Project is conceptual and
 Water quality improvements or protection may result from the proposed project, if/when implemented

Explain: NC Division of Soil and Water Conservation engineer, surveyor and SWCD Soil Conservationist has completed the site survey on January 18, 2012. The plan design can begin shortly thereafter. Landowner has agreed to proceed with the project. In fact, EEP had drawn up a plan for the restoration of the project site along with an Unnamed Tributary on the property. In 2011, EEP decided not to install the project. Hence, Caldwell SWCD's application to CWMTF.

5.4. Innovative Procedure or Technology

Would the proposed project employ innovative procedure or technology?

- M New technology or procedure
 Existing technology or procedure applied in a new or different way
- M Standard or common technology or procedure

Explain how the proposed innovative technology or procedure would improve or protect water quality: Proven Bioengineering Techniques (structural and vegetative) will be used to stabilize the streambank and stream channel. Soil erosion from failing streambanks will be negligible after restoration.

5.5. Contribution to Networks of Riparian Greenways Trails

How would the proposed project contribute to creating networks of riparian greenways? Choose from the following:

- M Does not contribute to creation of riparian greenway trail
 Creation of a new riparian greenway trail or extension or improvement of an existing greenway trail would be part of this project. Explain:
 A riparian greenway trail already exists at the project site and would be improved or extended by the proposed project. Explain:

Implementation of the proposed project will enable construction of a greenway trail in the future Explain:

Comments or clarifications, if necessary:

5.6. Education of the Public

Would educating the public be an integral part of the proposed project? Choose from the following and briefly explain actions.

- Part of an organized educational effort
- Passive interpretation trail
- M Possible educational actions to follow
- M Educational actions would be implemented outside of this project.
- Explain:
- No educational component

What aspects of the proposed project would be associated with educating the public? After completion of the project the Caldwell SWCD staff will provide a presentation to local government boards and committees (Caldwell County Commissioners and the Town Council of Gamewell and the Lower Creek Advisory Team) at a regularly scheduled meeting.

The Caldwell County Commissioners presentation will be broadcasted live on local cable television. The broadcast will rerun for a period of time subsequent to the meeting.

5.7. Links to Other Water Quality or Conservation Projects in the Watershed

Identify and describe other conservation or water quality projects completed or occurring in the watershed within 5 miles of the proposed project site and describe how they might benefit or complement the proposed project. Give the specific location for each project and the distance from the project proposed in this application.

- Lower Creek and Zack's Fork, 5.0 miles upstream, Lenoir Golf Stream Restoration, 35 54' 27.5", 81 31' 45.18"
- Ut to Lower Creek, 5.0 miles upstream, Caldwell Memorial Hospital, Stream Restoration, 35 54' 30.48", 81 31' 58.87"
- Ut to Lower Creek, 4.7 miles upstream, Tommy Greer, Stream Restoration, 35 53' 16.97", 81 32' 16.96"
- Ut to Lower Creek, 4.7 miles upstream, City of Lenoir, Water Harvesting System, 35 54' 40.55", 81 32' 36.46"
- Ut to Lower Creek, 3.1 miles upstream, City of Lenoir, Water Harvesting System, 35 54' 7.08", 81 33' 15.70"
- Lower Creek, 2.4 miles upstream, Caldwell County Stormwater Wetland, 35 53' 26.76", 81 34' 18.35"
- Ut to Abingdon Creek (Tributary of Lower Creek), 1.9 miles upstream, West Caldwell High School, Critical Area Planting, 35 53' 12.94", 81 35' 24.19"
- Lower Creek, 0.74 miles upstream, Town of Gamewell, Stream Restoration, 35 52' 23.25", 81 35' 22.13"
- Lower Creek, 0.55 miles downstream, Jeff Gragg, Stream Restoration, Streambank and Shoreline Protection, Critical Area Planting, Agrichemical Mixing Facility and Access road, 35 51' 24.47", 81 35' 52.97"
- Ut to Lower Creek, 2.62 miles downstream, David Waechter, Rain Garden 35 52' 12.31", 81 33' 46.24"
- Ut to Lower Creek, 3.4 miles downstream, Homer Miller, Watering Facility and Fencing 35 49' 43.81", 81 35' 55.40"

16 BMPs; 1 under construction, 1 planned(Construction February 2012), 1 being designed(Construction September 2013), 12 completed (2009-Present)
 All planned and installed BMPs are beneficial to the Lower Creek watershed and water quality. The stormwater BMPs retain and reduce stormwater volumes to the streams and help prevent streambank erosion. They also serve to capture pollutants to the stream. The stream restoration projects repair failing streambanks which reduces the sediment delivery to Lower Creek and its tributaries.

Livestock exclusion and critical area planting reduces erosion and nutrients that may enter the stream.

5.8. Local Measures to Protect Water Quality

5.8.1. Ordinances

Identify and describe local ordinances the community has implemented or will implement to control and treat stormwater or protect wetland or riparian areas. (e.g. stormwater management; stream buffer, wetland, or floodplain protection; soil erosion and sediment control program, etc). Describe what effects these ordinances might have on the proposed project, or vice versa.

5.8.2. Stormwater Utility

Identify and describe any existing or planned stormwater utility in the community where the project would be located.

6. Project Details

6.1. Characteristics of Catchment Area(s)

Catchment Area is defined as the area of land that contributes stormwater runoff to the project site

6.1.1. The acreage of the catchment area is 36,543 acres.
 (Include this area on one of the required maps).

6.1.2. What percentage of the catchment area is impervious?
9% = 3,289 acres

6.1.3. What are current land uses in the catchment area?

Land Use	% land cover in catchment area	Number of acres in catchment area
Forest	77	28,138
Agricultural	14	5,116
High Density Residential Development	5	1,827
Low Density Residential Development	3	1,096
Commercial or Industrial	1	366
Other – describe:		

6.1.4. Describe how land uses in the catchment area are expected to change in the next 20 years and the expected rate of change.
 The current trend toward land use is the steady reduction in Forest and Agricultural acreage.

6.2. Project Need and Vision

6.2.1. Project Need (Existing stream conditions or stormwater runoff characteristics)

a. Describe the location, extent and probable causes of instabilities or impairment.

The location of the project is located South of the Rocky Road bridge crossing Lower Creek. The West side of the project site is wooded. The East side of the project site is pasture. The project extends approximately 2,172' along Lower Creek. The probable causes for instabilities are an incised stream channel, lack of woody vegetation on the east bank and increased stormwater flow from impervious surfaces located upstream in Lenoir.

b. Describe observations and any monitoring conducted to identify any actual or potential cause(s) of impairment.

Visible onsite observations show vertical banks and clumps of soil deposited at streamside. Aerial photography 2004, 2008 and 2010 show the progression of the eroded banks moving laterally into the existing pasture.

6.2.2. Assuming the proposed project's outcomes would be highly successful, describe conditions on the project site and downstream that would reveal that success (i.e., What evidence of success could be measured or observed?)

The evidence for success will be quite evident through observation at the site as the streambanks will be stabilized with a combination of vegetative and structural measures. The sediment load downstream of the site will be reduced by **1157 tons** of soil/year as calculated by the USDA - NRCS GULLY EROSION COMPUTATION.

6.2.3. Describe alternatives to the proposed project you considered and explain why you chose the proposed project.

In 2003 when the site was first discovered, the conservation district contacted the Ecosystem Enhancement Program (EEP) staff to look at the site as a mitigation site. EEP took on the project. Progress was extremely slow with respect to putting a project on the ground. Finally in September 2011, EEP withdrew their intentions for installing the project. At the request of Ronnie Cardwell, the landowner, he asked Caldwell SWCD staff if other options were available to fund this project.

We decided to propose this site as a potential CWMTF project to address a water quality problem on Lower Creek and complete the work that has been proposed back in 2003.

6.2.4. Provide name(s) and qualifications of professionals whose evaluations contributed to this project.

Jeff Young, Division of Soil and Water Conservation Engineer
Kevin Clark, Caldwell/Burke SWCD Soil Conservationist
William Faulkner, USDA-NRCS District Conservationist

6.2.5. List any aspects of the project that are necessary to meet regulatory mandates or permit conditions.

6.3. Project Objectives

6.3.1. What type of project are you proposing? Mark all that apply.

See Restoration/Stormwater Application Guidelines for definitions of restoration types

- | | | |
|-------------------------|---------------------------|---------------------------|
| M | <u>Stream restoration</u> | Wetland restoration |
| | Stream enhancement | Wetland enhancement |
| | Stream stabilization | Wetland creation |
| | Stormwater BMP | M <u>Agricultural bmp</u> |
| Type of stormwater BMP: | | Type of ag BMP: Fencing |
| Other – describe: | | |

6.3.2. Identify goals for the proposed project. Select any that apply.

Restoration Projects

- M Improve or enhance aquatic habitat
- M Reduce streambank erosion
- M Improved biological health of stream
- Restore floodplain connection and function
- Other – describe:

Stormwater Projects

- Reduce peak rate of runoff into a receiving stream
- Reduce volume of runoff into a receiving stream
- Conserve potable water
- Increase infiltration of stormwater
- Remove pollutants Name targeted pollutants:
- Improve biological health of stream
- Eliminate existing stormwater outfalls
- Other - describe:

6.4. Project Deliverables

6.4.1. List deliverables/outputs to be completed for each task named below. Items identified here also should be written into the Scope of Work in the Project Narrative.

Task: Design/construction documents/construction bids

- Site Survey
- Conservation plan
- Engineered Design plans
- Bid document
- Construction contract document

Task: Permit preparation

- DWQ 401 Water Quality Certification
- USACES Section 404 permit
- USDA/NRCS – Cultural Resources review

Task: Easement acquisition/preparation/recordation

- Easements established by Ecosystem Enhancement Program – no action

Task: Construction

Restoration	2,172	
Enhancement level 1		
Enhancement level 2		
Stabilization describe technique:		
Other: explain	give unit:	
Additional linear feet of stream protected only by an easement (no restoration)		
PROJECT TOTALS	2,172	

d. Rosgen Classification of Natural Rivers Stream Types

Rosgen Classification Stream Type(s) before restoration project (by stream reach, as appropriate)	F4
Rosgen Classification Stream Type(s) after restoration project (by stream reach, as appropriate)	C4

e. Describe how the following stream features will be modified (by stream reach, as appropriate):

Dimension	Construct bankfull bench to increase entrenchment ratio.
Pattern	Create meanders to increase reach length and aquatic habitat.
Profile	Increase reach length for flatter water surface slope.

6.4.2.2. Stormwater Projects

a. Describe each stormwater feature (bmp). *Include type of feature, tributary area acres treated, size, design storm event, volume, etc.*

b. Would all proposed stormwater features meet DWQ minimum design standards?
If not, briefly explain:

6.5. Design and Permitting

6.5.1. Design

M would be started after the CWMTF grant has been awarded
is being prepared, is approximately 5% complete, and is expected

to be complete (date) 01/15/2014

has been completed and is ready for solicitation of construction bids
has been completed and construction bids have been obtained

6.5.2. Permits

would be started after the WMTF grant has been granted

M are in preparation, are approximately 1% complete, and are expected to be complete (date) 11/20/2012

have been completed and are rea

y to

e submitted to permitting agenci

s

have been completed

nd permits h

ve been

bt

ined

6.5.3. Describe any unresolved constraints or issues (such as structures, rights-of-way, treating upland erosion, retrofitting culverts, zoning, etc.).

6.6 Grant Withdrawal if not entered into construction contract within one year of grant award date

Grant contracts will have the following clause.

Pursuant to NCGS 113A-254(f), this Grant award shall be withdrawn if the Grant Recipient fails to enter into a construction contract for the Project within one year after the Award Date, unless the CWMTF Board of Trustees finds that Grant Recipient has good cause for the failure. If the Trustees find good cause for Grant Recipient's failure, the Trustees must set a date by which Grant Recipient must take action or forfeit the grant.

Regarding this clause, if your project includes construction funds are you as Grant Recipient prepared to commit to this clause and to enter into a construction contract within one year from the date of award decision by the Board of Trustees?

M Yes, we commit to entering into a construction contract within one year of the award date.

No, we cannot commit to entering into a construction contract within one year of the award date.

7. Water Quality Benefits

7.1. Pollutant and Runoff Reduction

7.1.1. Restoration Projects

a. Estimated annual sediment reduction: 1158 tons/yr

b. Show how the annual sediment reduction was calculated:

USDA - NRCS **GULLY EROSION COMPUTATION** and visual measurements calculated between 2004 aerial photography and 2010 aerial photography

c. Other pollutant reduction: describe and provide calculations or other basis for determining reduction.

7.1.2. Stormwater Projects

a. Complete the table below for the total project (sum of all stormwater features). Fill in the appropriate target pollutant(s) for the feature(s) you are proposing

Target Pollutant	Percentage reduction	Loading into bmp (lb/yr)	Loading out of bmp (lb/yr)	Pollutant removal (lb/yr)
Total nitrogen	%			
Total phosphorous	%			
Suspended solids	%			
Others – list:	%			

b. What is the basis for percentage reduction and amount of pollutant removal (e.g. estimates based on bmp manual, estimates based on monitoring)?

c. What is the volume of the first 1 inch of rainfall in the tributary area that would be expected to reach the project site (or each proposed stormwater feature)?

d. Runoff reduction: Describe reductions in the volume and/or peak rate of runoff and resulting benefits to waters downstream of the project site. Provide calculations or other quantitative basis for these reductions.

8. Long-term Agreements

Long-term Agreements – Restoration Projects

CWMTF requires vegetated riparian buffers, typically at least 50 feet wide, be established along restored streams and, when appropriate, around stormwater features. In addition, CWMTF requires that the footprint area of stormwater BMPs, buffers around BMPs, and stream riparian buffers be protected by permanent conservation agreements or other legal instrument of protection acceptable to CWMTF.

Conservation agreements are not required for projects on property owned by the State of North Carolina.

For some stormwater BMPs, in lieu of a conservation easement, CWMTF will accept a local government's commitment to maintain the BMP for at least 10 years. See 8.1.3, Stormwater projects.

Conservation agreements on projects receiving CWMTF funding must be similar in form and content to the document templates at <http://www.cwmtf.net/#restostorm-adm.htm>

- For projects with scope of work including only design and permitting, no funds will be released until CWMTF has received letters of intent from all landowners stating that all agree with the project and are willing to record permanent conservation agreements on their property.
- For projects with CWMTF funds for construction, CWMTF funds for construction costs will be released only after permanent conservation agreements have been recorded.

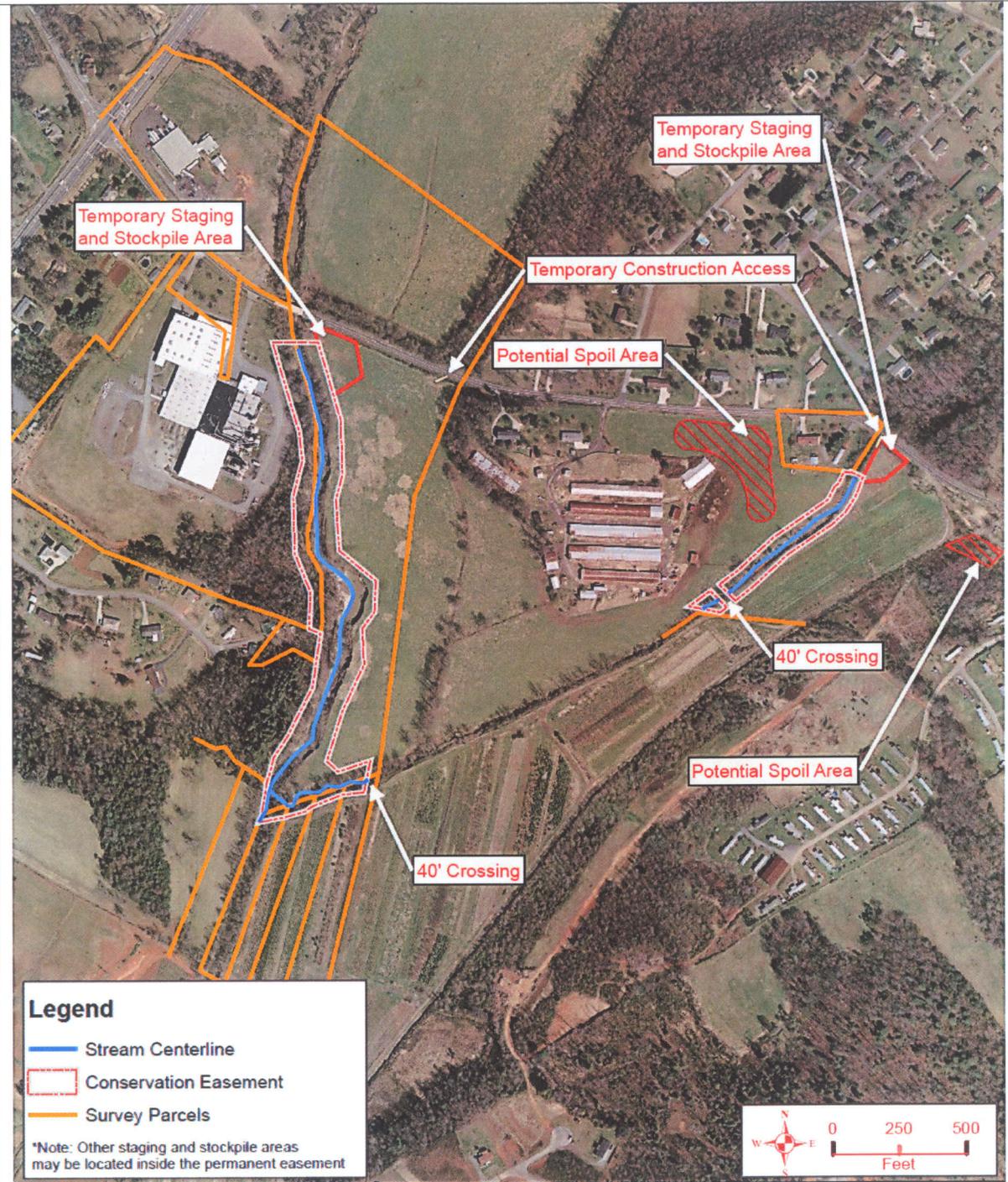
8.1.1 Who will be the holder of conservation agreements? (The holder is responsible for enforcing conditions of conservation agreements.) NCDAs-Division of Soil and Water or Caldwell Soil and Water Conservation District

8.1.2. Restoration projects complete the following table.

Schedule of Property Interest to be Acquired for Riparian Buffers							
No.	Property Owner	PIN	Stream Right or Left	Stream Frontage (lf)	Easement Width (ft)	Easement Area (acres)	Status of Cons. Agreement (per options below)
1	Ronnie Cardwell	2737193156	Left	2,170	50	4.24	1
2							
3							
						Total Easement Area	4.24

Status of Conservation Agreement Options:

- (1) Landowner has signed a conservation agreement.
- (2) Landowner has provided a letter of intent to sign a conservation agreement.
- (3) Landowner has verbally agreed to sign a conservation agreement.
- (4) Landowner has not been contacted or has not agreed to sign a conservation agreement.
- (5) Other: Explain _____



Title Lower Creek Access and Staging Areas			
Prepared For: 	Project	Lower Creek and UT to Zack's Fork Caldwell County, North Carolina	
	Date	Project Number	Figure
	7/11/08	018327000	1

P:\018327000 Lower Creek\Misc. Figures\Access and Staging 6-20-2008.doc

Prepared by Chris Tankenberg



8.2. Project Maintenance

For projects awarded with construction in the scope of work, the Grant Recipient will be contractually responsible for maintaining the project's function for 10 years. Name the organization that will inspect the project site and conduct maintenance and describe how the maintenance will be addressed:

Caldwell Soil and Water Conservation District will inspect the project annually for the first 10 years following implementation.

STREAMBANK AND SHORELINE PROTECTION

OPERATION AND MAINTENANCE PLAN

January 13

This plan will provide specific instructions for operating and maintaining the system to insure that it functions properly.

Scheduled maintenance:

For 0-5 years following installation, inspect the entire project for damage to the structures and/or vegetation following storm events which:

- Produce significant runoff or
- Raise the normal water elevation of the stream

Otherwise, inspect the project for damage annually.

From 5-10 years, the vegetation should become well established. Annual inspection of the project will be conducted.

For vegetative damage, guidelines for establishment and repair of tree and shrub seedlings, livestakes, and herbaceous vegetation will be followed. The vegetative repair shall be made during the next suitable planting date for the specific species of plants.

In the event structures are damaged, the Soil and Water Conservation District Office will contact the division engineer for an appointment to evaluate the damage.

. (It is important to address these damaged areas hastily as a way to reduce further damage).

9.1.2. Previous CWMTF Funding Related to the Proposed Project

If any aspect of the proposed project previously received CWMTF funding, provide:

- Previous CWMTF grant contract number:
- CWMTF funds in previous CWMTF grant:
- Matching funds associated with previous CWMTF grant:

Funds previously received from CWMTF or previously receiving credit as matching funds on a CWMTF-funded project may not be included in the project budget proposed below.

PROPOSED RESTORATION and STORMWATER PROJECT BUDGET

Item	Restoration		Stormwater		Total Project Amount
	CWMTF funds requested	Matching resources	CWMTF funds requested	Matching resources	
A-1 Survey (Pre-Application)	0	5,000	NA	NA	5,000
A. Design	0	30,000	NA	NA	30,000
B. Permitting	600	600	NA	NA	600
C. Value of easements to be donated \$14,656/9 acres x 4.24 acres = \$6,904	0	6,904	NA	NA	6,904
D. Easement acquisition \$27,632/9 acres x 4.24 acres = 13,017	0	13,017	NA	NA	13,017
E. Easement preparation, recordation and legal services \$12,530/9 acres x 4.24 acres = \$5,903	0	5,903	NA	NA	5,903
F. Construction 2,170 l. ft	0	0	NA	NA	0
F-1. Hydroseeding	12,000	12,000	NA	NA	24,000
F-2 Livestakes	20,000	20,000	NA	NA	40,000
F-3 Erosion Control Matting	25,000	25,000	NA	NA	50,000
F-4 Rock (Boulders)	32,500	32,500	NA	NA	65,000
F-5 Rock (Rip Rap)	10,000	10,000	NA	NA	20,000
F-6 Debris Removal	10,000	10,000	NA	NA	20,000
F-7 Earthwork	50,753	80,247	NA	NA	131,000
F-8 Fencing implementation = 4,272 l.ft	0	10,253	NA	NA	10,253
G. Construction Administration and Observation	0	20,000	NA	NA	20,000
H. Construction Contingency – 10%	0	0	NA	NA	0
I. Project Administration	2,000	0	NA	NA	2,000
J. Pre application Construction, supporting practices. Animal Trails and Walkways, Fence, Watering Facilities, Well	0	53,641	NA	NA	53,641
K. Pre application Construction Administration and Observation	0	6,035	NA	NA	6,035
Totals	162,853	341,100	NA	NA	503,953
Totals by Restoration or Stormwater					

Explanations and notes:

9.1.4. Project Budget Summary

Total CWMTF funds requested:	\$162,853
Total matching funds to be contributed:	\$341,100
Total project budget:	\$503,953
Percent matching funds (total matching funds/total project budget):	67.7%

9.2. Matching Funds Supporting Information

9.2.1. Complete the table below. All matching funds in the proposed project budget must be identified in this table.

<i>Type Of Matching Funds</i>	<i>Amount</i>	<i>Source</i>	<i>Applied to Project Task or Activity</i>	<i>Status and Availability</i>
Cash				
Non- CWMTF grant funds				
Value of easements to be donated	25,824	NC EEP	Easement acquisition/preparation/recordation	Completed
In-Kind labor/services	48,332	NCDA & CS Division of Soil and Water	Survey/Design/construction	Survey completed, other work scheduled
	7,268	Caldwell SWCD	Survey/Permit preparation/cons plan/construction bids	
	0	Caldwell County Government	Administration	
Other in-kind – equipment, materials				
other funds- describe Stream Restoration and Fencing construction	\$200,000	USDA-NRCS-EQIP	Construction	Scheduled
Other funds or resources; describe: (Pre application Construction, supporting practices.)	53,641	NC EEP	Construction	Completed
	\$6,035	Caldwell SWCD	Construction Oversight	
Totals	\$341,100			

9.2.2. Identify any project expenditures to be paid with matching funds that will be incurred before this application is considered for grant award date by the CWMTF Board of Trustees (expected to be October 2013): \$90,500 has gone toward this project to this point in time.

9.2.3. Identify other state or federal grant programs available to fund this project: USDA-NRCS, EQIP

9.2.4. Identify other funding sources pursued for this project: Ecosystem Enhancement Program (EEP), DWQ, Section 319 Water Quality grant program



January 24, 2012

NC Clean Water Management Trust Fund
1651 Mail Service Center
Raleigh, NC 27699-1651

Re: Lower Creek, Caldwell County

Dear Clean Water Management Trust Fund:

The NC Ecosystem Enhancement Program has been asked by the Caldwell Soil & Water Conservation District to verify that the proposed stream restoration site located on Lower Creek immediately south of the Rocky Road Bridge in Caldwell County cannot be constructed as a compensatory mitigation project by the Ecosystem Enhancement Program.

EEP has spent funds on this property to secure the conservation easement. The landowners at this site have received \$25,824 for acquisition of the conservation easements at this site.

EEP supports the project application submitted by Soil and Water Conservation District. The project is within the Lower Creek watershed planning area.

If further information is needed, please contact me at 919-715-1263 or Julie Cahill at 828-230-5172, or julie.cahill@ncdenr.gov.

Sincerely,

A handwritten signature in cursive script that reads "Stephanie Horton".

Stephanie Horton
Land Protection Supervisor

Restoring... Enhancing... Protecting Our State
North Carolina Ecosystem Enhancement Program, 1652 Mail Service Center, Raleigh, NC 27699-1652 / 919-715-0476 / www.nceep.net



**STATE OF NORTH CAROLINA
CLEAN WATER MANAGEMENT TRUST FUND
GRANT CONTRACT
(RESTORATION OF DEGRADED LANDS)**



CWMTF PROJECT NUMBER: 2013-416

GRANTOR: North Carolina Clean Water Management Trust Fund ("Fund" or "CWMTF"), an independent agency of the State of North Carolina ("State") acting through its Board of Trustees solely in its official capacity pursuant to Article 18, Chapter 113A, of the North Carolina General Statutes ("NCGS")

CONTRACT ADMINISTRATOR: Larry Horton, P.E.
Clean Water Management Trust Fund
1651 Mail Service Center
Raleigh, NC 27699-1651
Phone: 919.707.9128; Fax: 919.715.0397
Email: larry.horton@ncdenr.gov

GRANT RECIPIENT: Toe River Valley Watch, a North Carolina Non-Profit Corporation, ("Grant Recipient")

CONTRACT ADMINISTRATOR: Starli McDowell, President
Toe River Valley Watch
Post Office Box 252
Penland, North Carolina 28765-0252
Phone: 828.385.2688
Email: starsledge@aol.com

FEDERAL I.D. NUMBER: 20-5950350

DUNS NUMBER: 80-015-2956

FISCAL YEAR END DATE: December 31

GRANT AWARD DATE: February 10, 2014 (the "Award Date")

CONTRACT EFFECTIVE DATE: 15 October 2014 (the "Effective Date")

CONSTRUCTION CONTRACT DATE: February 10, 2015

CONTRACT EXPIRATION DATE: March 31, 2016 (the "Expiration Date")

REIMBURSEMENT DATE: April 14, 2016

GRANT AMOUNT: up to \$375,000 (the "Grant")

THIS GRANT CONTRACT (the "Grant Contract") is made and entered into, as of the Effective Date by and between the Fund and the Grant Recipient, both sometimes hereinafter referred to individually as a "Party" or collectively as the "Parties".

WITNESSETH:

WHEREAS, the Fund is authorized by NCGS Chapter 113A, Article 18 to, among other actions and activities, restore previously degraded lands to reestablish their ability to protect water quality and acquire conservation easements or other interests in real property for protecting and conserving surface waters and drinking water supplies.

WHEREAS, the Grant Recipient is a qualified applicant as that term is defined in NCGS Chapter 113A, Article 254(a).

WHEREAS, the Grant Recipient submitted to the Fund an application requesting financial assistance to engage in a project for restoring degraded lands in order to protect the quality of surface waters.

WHEREAS, at its meeting on the Award Date, the Fund's Board of Trustees approved a project based on the Grant Recipient's application, and the Fund is willing to provide financial assistance (the "Grant") to the Grant Recipient pursuant to the terms and conditions set forth in this Grant Contract.

WHEREAS, the Grant Recipient agrees to conduct the project approved by the Fund's Board of Trustees for the purposes and according to the scope of work, conditions, and schedule in Exhibit A (the "Project") and pursuant to the project budget in Exhibit B of this Grant Contract.

WHEREAS, the Parties desire to enter into this Grant Contract and intend to be bound by its terms.

NOW, THEREFORE, for and in consideration of the Grant, the mutual promises each to the other made, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties mutually agree as follows:

1. **Grant Documents.** The documents described below are hereinafter collectively referred to as the "Grant Documents." In the case of conflict between any of these documents, each shall have priority over all others in the order listed below. Upon execution and delivery of this Grant Contract, it and the other Grant Documents and items required hereunder will constitute a valid and binding agreement between the Parties, enforceable in accordance with the terms thereof. The Grant Contract constitutes the entire agreement between the Parties, superseding all prior oral and written statements or agreements. Only changes deemed non-material in type at the discretion of the Fund's Executive Director may be made to the Grant Contract without the consent of the Fund's Board of Trustees.

2. The Grant Documents consist of:
a. Cover page

- b. Grant Contract
- c. Exhibit A – Project Description, Water Quality Benefits, Scope of Work, Special Contract Conditions, and Schedule
- d. Exhibit B – Project Budget
- e. Exhibit C – CWMTF Pre-Disbursement Checklist
- f. Exhibit C.1 – Statement of No Overdue Tax Debts
- g. Exhibit C.2 – Assurances for Non-Federally Funded Contracts
- h. Exhibit D – CWMTF Progress Report Form and CWMTF Grant Contract Final Report Form
- i. Exhibit E – CWMTF Invoice Form
- j. Exhibit F – Uniform Administration of State Grants
- k. Exhibit G – Additional Definitions
- l. Exhibit H – General Terms and Conditions
- m. Exhibit I – Conservation Easements

Upon execution and delivery of the Grant Contract, and once the Department of Environment and Natural Resources has notified the Fund that funds for the Grant have been encumbered, and the Grant Recipient has received its counterpart original of the Grant Contract, fully executed and with all dates inserted where indicated on the cover sheet of the Grant Contract, then the Grant Contract will constitute a valid and binding agreement between the Parties, enforceable with the terms thereof.

3. **Purpose.** The purpose of the Grant is for restoring degraded lands in order to protect the quality of surface waters, more particularly described on Exhibit A (the "Project"). The Grant may be for Project design, permitting, construction, construction observation, construction contingency, and/or the Grant Recipient's administrative costs. Grant funds may not be used for the purchase of improvements or debris on any property, or for the removal of improvements or debris on any property, or for any other purpose not set forth herein. Further, Grant funds may not be used for any eminent domain litigation or any action or expenditure related to eminent domain, unless approved by the Fund's Board of Trustees in writing prior to the action. The Board of Trustees shall review requests to use Grant funds for eminent domain action on a case-by-case basis. The Grant Recipient shall provide such requests in writing.

4. **Fund's Duties.** Subject to the appropriation, allocation, and availability to CWMTF of funds for the Project, CWMTF hereby agrees to pay the Grant funds to the Grant Recipient in accordance with the payment procedures set forth herein.

5. **Grant Recipient's Duties.** The Grant Recipient shall carry out the Project pursuant to the terms of this Contract.

6. **Contract Period.** The Fund's commitment to disburse Grant funds under this Grant Contract shall cease on the Reimbursement Date. It is the responsibility of the Grant Recipient to ensure that the Project is completed by the Expiration Date and that all costs to be reimbursed have been submitted to the Fund by the Reimbursement Date. After the Expiration Date, any Grant monies remaining under this Grant contract no longer will be available to the Grant Recipient except to pay proper invoices for budgeted costs incurred by the Expiration Date. The burden is on the Grant Recipient to request an extension of the Grant Contract if the Grant

Recipient anticipates that the Project will not be completed by the Expiration Date. The request for an extension must be made in a writing addressed to the Fund, explaining why an extension is needed and proposing a new expiration date for the Grant Contract. This written request must reach the Fund's office at least 60 days before the Expiration Date. The Fund may or may not approve the extension, based on Project performance and other factors. The Fund is not responsible for notifying the Grant Recipient of an approaching Expiration Date.

7. Permanent Protections on Properties of the Project Site.

a. Projects for Which Property Protections are Required. Real property on which CWMTF funds are to be used for construction must be protected permanently by legal instruments conforming to NCGS Chapter 121, Article 4, and NCGS Chapter 113A, Article 18. The Grant Recipient shall so restrict, or cause to be restricted, uses of and activities on such real property by way of one or more permanent conservation agreements or by other instruments of property interest approved in writing by the Fund. Such instruments of property interest must encumber real property essential to the Project, including necessary easements and rights of way. Real property essential to the Project, including necessary easements and rights of way, hereinafter is collectively referred to as the "Project Site," being the properties given in Schedule of Properties for Legal Protection of Riparian Buffers in Exhibit A.

b. Requirements for Instruments of Property Interest. Property interests acquired for the Project shall provide or conform to the following:

(i) Property interests shall assure undisturbed use and possession of the properties of the Project Site for the purpose of construction and operation of the Project and include other such restrictions as the Fund deems necessary and satisfactory, in its sole discretion.

(ii) Property interests shall be permanent.

(iii) Property interests shall be approved as to form and content by the Fund in writing.

c. Requirements for Holding of Property Interest. Property interests acquired for the Project shall be held by a party satisfactory to the Fund, such party being identified as holder (as defined in NCGS Chapter 121, Article 4) in Exhibit A. If a holder of property interests acquired for this Project is not named in Exhibit A, or if the party named as holder in Exhibit A does not accept the role and responsibility of holder, the Grant Recipient shall name a party to serve as holder, subject to approval in writing by the Fund.

d. Recordation of Instruments of Property Interest. The Grant Recipient shall provide to the Fund a copy of instruments creating property interest obtained and recorded in connection with the Project Site. (The Fund will disburse construction funds only after having received from the Grant Recipient a copy of each recorded instrument and associated documents set forth in Exhibit I.)

8. Pre-Disbursement Requirements. Prior to the disbursement of Grant funds under this Grant Contract, the Grant Recipient shall deliver to the Fund all documentation described on Exhibits C, C.1, and C.2.

9. Disbursement of Grant Funds.

a. Proportionate Spending of Matching Funds. Grant monies are awarded based on a

commitment of matching funds to the project. The Fund's final, cumulative portion of the total project cost will be no more than the percentage of funds originally committed to in the Grant Contract as given in Exhibit B. The Grant Recipient must demonstrate expenditure of matching funds as payments by the Fund are requested.

b. Requests for Payment. The Fund will disburse Grant funds following receipt by the Fund's Contract Administrator of the Grant Recipient's requests for payment. Each request for payment shall include a progress report, using the Progress Report form in Exhibit D, describing work accomplished on the Project and progress toward completing the Project Scope of Work, and a completed and signed Payment Request form, using the template Payment Request form in Exhibit E. Payment requests shall conform to the following:

(i) Exclusion of sales tax. Payment requests shall identify all amounts of sales tax for which the Grant Recipient and/or its vendors have or will obtain payment from the State Department of Revenue. The Fund will not reimburse the Grant Recipient for such amounts.

(ii) Supporting documentation. Payment requests shall be accompanied by appropriate itemized documentation supporting all expenses claimed and clearly identifying each expenditure for which payment is requested. Supporting documentation must be organized in a manner that clearly relates expenditures in the supporting documentation to the line items on the Payment Request form. Any request for payment that does not clearly identify each expenditure or does not relate each expenditure to the line items on the payment request form will not be processed and will be returned to the Grant Recipient for correction and resubmittal.

c. Alternate Disbursement of Grant Funds. The Fund may, upon request by the Grant Recipient, disburse Grant funds prior to the Grant Recipient's actual payment to its vendors if such expenditures are documented by vendors' third-party invoices. In order for the Fund to disburse Grant funds to the Grant Recipient based on unpaid third-party invoices, the Grant Recipient must: (a) indicate to the Fund in writing that it has reviewed and approved such unpaid invoices, (b) certify to the Fund in writing that it will make payment on all such unpaid invoices within three banking days of receipt of funds corresponding to the unpaid invoices, and (c) confirm in writing to the Fund that it has made such payments within three banking days of receipt of funds corresponding to the unpaid invoices.

d. Limited Grant Funds Disbursement in January, June, July, and December. Funds will not be disbursed during the first week of January, the last three weeks of June, the first week of July, and the last two weeks of December.

e. Certification by Licensed Professional. At the option of the Fund, payments may be made only on the certificate and seal of an appropriately qualified licensed professional (e.g., licensed Professional Engineer) that the work for which the payment is requested has been completed in accordance with approved plans and specifications, to which certificate shall be attached an estimate by the construction contractor setting forth items to be paid out of the proceeds of each such payment. The Fund, at its option, may further require a certificate from such appropriately qualified licensed professional that the portion of the Project completed as of the date of the request for payment has been completed according to schedule and otherwise as approved by the Fund and according to applicable standards and requirements. However, the Fund may, at its discretion, make payments without requiring such certificates or construction

contractor's estimate, in which event the Grant Recipient shall furnish the Fund a list of and the amounts of items to be paid out of the payment, or such other evidence as the Fund may require.

f. Payment Based on Progress. The Grant Recipient agrees to proceed with diligence to complete the Project according to the schedule set out in Exhibit A and shall show appropriate progress prior to each payment. Payment may be withheld or delayed if Grant Recipient fails to make progress on the Project satisfactory to the Fund. Amounts withheld shall be reimbursed with subsequent payments in the event that Grant Recipient is able to demonstrate an ability to resume satisfactory progress toward completion of the Project.

g. Proof of Payment. The Grant Recipient agrees to pay, as the work progresses, all bills for expenses incurred on the Project and agrees to submit to the Fund all such receipts, affidavits, canceled checks, or other evidences of payment as may be requested from time to time and, when and if requested by the Fund, to furnish adequate proof of payment of all indebtedness incurred on the Project.

h. The Fund Retaining Portion of Funds until Project Completion. The Fund will withhold payment from the Grant Recipient in the amount of \$25,000 of the Grant until the Grant Recipient has satisfactorily submitted its grant contract final report.

i. No Excess Costs. The Fund agrees to pay or reimburse the Grant Recipient only for costs actually incurred by the Grant Recipient that do not exceed the funds budgeted for the Project on Exhibit B.

j. Period for Incurring Expenditures. The Fund will reimburse the Grant Recipient for allowable Project expenditures that are incurred by the Grant Recipient or its vendors only during the period between the Award Date and the Expiration Date of the Grant Contract. The Fund will not reimburse the Grant Recipient for Project expenditures that are not incurred during this period.

k. Costs of Project Administration. The Fund agrees to reimburse the Grant Recipient for administrative costs consisting only of costs of labor for administrative work conducted exclusively on this Project. The Grant Recipient's requests for such payment shall be made under the Project Administration line item of Exhibit B and shall conform to the following:

(i) Costs allowable under the Project Administration line item shall be only costs of labor needed to comply with the general conditions of the Grant Contract (e.g., progress reports, payment requests, preparing the grant contract final report, revisions to the Grant Contract). Allowable Project Administration labor costs may include any of the following: (a) pay to the Grant Recipient's payroll employees, plus the Grant Recipient's cost of paying benefits on such pay (usually employees' pay times an audited or auditable benefits multiplier); (b) pay to contract employees of the Grant Recipient (e.g., temporary office support), payable at the Grant Recipient's actual cost, without application of a benefits multiplier; and/or (c) cost of professional services labor contracted by the Grant Recipient (e.g., engineering firm or consultant), payable at the Grant Recipient's actual cost for that labor.

(ii) Costs of any other work described in the Project Scope of Work in Exhibit A are not allowable under the Project Administration line item.

(iii) Costs allowable under the Project Administration line item shall be only costs of labor needed to comply with the general conditions of the Grant Contract (e.g., progress reports, payment requests, preparing the grant contract final report, revisions to the Grant Contract). Allowable Project Administration labor costs may include any of the following: (a) pay to the Grant Recipient's payroll employees, plus the Grant Recipient's cost of paying benefits on such pay (usually employees' pay times an audited or auditable benefits multiplier); (b) pay to contract employees of the Grant Recipient (e.g., temporary office support), payable at the Grant Recipient's actual cost, without application of a benefits multiplier; and/or (c) cost of professional services labor contracted by the Grant Recipient (e.g., engineering firm or consultant), payable at the Grant Recipient's actual cost for that labor.

(iv) Costs of any other work described in the Project Scope of Work in Exhibit A are not allowable under the Project Administration line item.

10. Grant Withdrawal for Failure to Enter into a Construction Contract. Pursuant to NCGS §113A-254(f), if the Project includes construction, this Grant award shall be withdrawn if the Grant Recipient fails to enter into a construction contract for the Project within one year after the Award Date, unless the Fund's Board of Trustees finds that Grant Recipient has good cause for the failure. If the Trustees find good cause for Grant Recipient's failure, the Trustees must set a date by which Grant Recipient must take action or forfeit the Grant.

11. Refunds, Reversion of Unexpended Funds, and Reduction of the Grant based on Construction Cost less than Budgeted Construction Cost.

a. Refunds. The Grant Recipient shall repay to the Fund any compensation it has received that exceeds the payment to which it is entitled herein, including any interest earned on funds reimbursed pursuant to the Grant Contract.

b. Reversion of Unexpended Funds. Any unexpended Grant monies shall revert to the Fund upon termination of the Grant Contract.

c. Reduction of the Grant based on Construction Cost less than Budgeted Construction Cost. The Fund may reduce the Grant amount if the Grant Recipient expects actual construction costs to be less than budgeted construction costs, as follows:

(i) The Grant Recipient shall provide to the Fund construction contract pricing information consisting minimally of a statement of the scope of the construction work, agreed-upon constructor or vendor pricing for the construction work, and a total anticipated construction cost based on the pricing.

(ii) The Grant Recipient shall deliver the construction contract pricing information to the Fund's Contract Administrator within 30 days of executing a construction contract for the Project.

(iii) The Fund may, at its discretion after comparing the total anticipated construction cost with the Grant Contract project budget, choose to reduce the Grant. If the Fund chooses to reduce the Grant, the Fund's Contract Administrator will prepare an amendment to the Grant Contract for this purpose, and the Fund will approve requests for reimbursement of the Grant Recipient's construction costs only after the amendment has been signed by both the Grant

Recipient and the Fund.

12. Reporting Requirements.

a. Project Progress Reports. The Grant Recipient shall submit a written detailed narrative progress report describing the work accomplished on the Project and progress toward meeting the Project objectives to the Fund's Contract Administrator of the Fund, every three months beginning three months from the Effective Date in the format set forth on Exhibit D. Progress reports shall be made on the form set forth on Exhibit D.

b. Grant Contract Final Report. The Grant Recipient shall submit to the Fund's Contract Administrator a grant contract final report providing the information items listed on the contract final report form given in Exhibit D and according to the schedule given in Exhibit A. If the grant contract final report is not acceptable to the fund, the Fund shall return it to the Grant Recipient for revision. Final payment will not be made until the grant contract final report is acceptable to the Fund.

c. State-mandated Reporting Requirements for Nonprofit Corporations. State-mandated reporting requirements for nonprofit corporations are set forth on Exhibit F.

13. Notice; Contract Administrators. All notices, requests or other communications permitted or required to be made under this Grant Contract or the other Grant Documents shall be given to the respective Contract Administrator. Notice shall be in writing, signed by the party giving such notice. Notice shall be deemed given three business days next following the date when deposited in the mail.

14. Signature Warranty. Each individual signing below warrants that he or she is duly authorized to sign this Contract for the respective party, and to bind said party to the terms and conditions of this Grant Contract.

(The remainder of this page is intentionally left blank)

IN WITNESS WHEREOF, the Grant Recipient and the Fund have executed this Grant Contract in two originals as of the Effective Date. One original shall be retained by each Party. If there is any controversy among the documents, the document on file in the Fund's office shall control.

GRANT RECIPIENT:

By: Toe River Valley Watch
Name: Stallie McDowell
Title: President

FUND:

By: Troy Kickler (SEAL)
Name: Troy Kickler, Ph.D
Title: Chairman, Board of Trustees

EXHIBIT A
CWMTF Project No. 2013-416

<p>Stream of the Project Site: Grassy Creek Water bodies downstream: North Toe River River basin: French Broad County: Mitchell Amount requested from CWMTF: \$377,500 CWMTF approved grant amount: up to \$375,000 Total matching contributions: \$307,157 Total project budget: \$682,157 % match (total matching contributions/total project budget): 45% Grant award date: February 10, 2014</p>

Project Site:

The Project Site is approximately 2000 linear feet (l.f.) of Grassy Creek in the town of Spruce Pine, NC in Mitchell County. The section that will be restored is behind a commercial shopping area.

Project Summary:

This project will provide design plans, specifications, and bid documents; obtain applicable Federal and State permits, and record conservation easements for restoring the stream of the Project Site.

Site Conditions and Water Quality Objectives:

The Grant Recipient has developed information indicating that the stream at the Project Site is laterally unstable; has bank erosion; is straightened and channelized; and lacks floodplain access and instream habitat. The primary goal of the project is to restore of 2,000 l.f. of channelized stream; establish a 50 ft. permanent conservation easement on both sides of stream; easement area will also be used for a future greenway. Successful implementation of this project will increase frequency of flow access to floodplains, reduce bank erosion and sediment loss, reduce nutrient transport, increase density of native bank vegetation, and restore aquatic habitat.

Scope of Work:

The Grant Recipient shall conduct and complete the activities given below.

No.	Activity	Funding Source	
		CWMTF Funds	Matching Funds
1	Prepare an engineering design for restoring the stream of the Project Site to include detailed plans, specifications, and bid documents	X	
2	Prepare permit application documents and obtain applicable Federal and State permits for the construction of the engineering design	X	
3	Negotiate, prepare, and record conservation agreements for the properties of the Project Site	X	
4	Construct the stream restoration per the engineering design, including entering into a construction contract, accomplishing the construction, administering the construction contract, and observing and documenting conformance of the construction to the construction contract documents and approved changes	X	
5	Administer the project	X	

Special Contract Conditions:

1. The Grant Recipient shall provide or otherwise ensure that the matching funds identified in Exhibit B are provided to the project.
2. Stream restoration, enhancement, and stabilization designs and their implementation must provide for permanently vegetated riparian buffers and permanent legal protection of the riparian buffers in accordance with the following:
 - a. Riparian buffer widths, areas, and vegetation: Except as otherwise provided in these Special Contract Conditions, riparian buffers must be vegetated with protected existing vegetation and/or new planted vegetation established to become permanent over the entire buffer area in accordance with the following:
 - i. Widths and areas of riparian buffers: Estimated widths and areas of vegetated riparian buffers are given in the Schedule of Properties for Legal Protection of Riparian Buffers.

Schedule of Properties for Legal Protection of Riparian Buffers								
No.	Property Owner	PIN	Stream Right			Stream Left		
			Approx. Stream Frontage (LF)	Approx. Protected Buffer Width (feet)	Approx. Protected Buffer Area (acres)	Approx. Stream Frontage (LF)	Approx. Protected Buffer Width (feet)	Approx. Protected Buffer Area (acres)
1	Great Meadows, Inc.	0799-03-12-9765	0	0	0	1150	50	1.3
2	Great Meadows, Inc.	0799-03-23-3624	2350	50	6.6	0	0	0
3	Great Meadows, Inc.	0799-03-13-9703	0	0	0	925	50	1.1
Totals			2350		6.6	2075		2.4
Average protected buffer widths				50			50	

- ii. Woody vegetation along stream banks: Along restored streambanks and protected existing streambanks, native woody vegetation must be protected or established at a density such that vegetation will reach a survival rate of at least 320 trees per acre. Native woody vegetation must be protected or established from the top of each protected or restored streambank outward to widths of at least 20 feet perpendicular to the streambank.
 - b. Permanent legal protection of riparian buffers: Real properties on which vegetated riparian buffers are to be provided must be protected permanently by legal instruments conforming to NCGS Chapter 121, Article 4, and NCGS Chapter 113A, Article 18 (see Exhibit I and paragraph 7 of this Grant Contract). Real properties of the Project Site and corresponding approximate land areas to be permanently protected are given in the Schedule of Properties for Legal Protection of Riparian Buffers.
3. The Grant Recipient shall permanently restrict uses on each property identified in the Schedule of Properties for Legal Protection of Riparian Buffers. Permanent property restrictions needed to implement the Project shall be in the form of recorded permanent conservation easements that provide for the State of North Carolina to have third-party rights of enforcement of the easements' conditions. The Grant Recipient shall conduct, or arrange for others to conduct, the following pursuant to these properties:

- a. The Blue Ridge Conservancy shall be the holder of conservation easements acquired for the Project and is prepared to monitor conditions on the land addressed in the conservation easements at least annually, in perpetuity.
 - b. Submit to the Fund a letter of intent from each property owner indicating each owner's intent to enter into a permanent conservation easement to protect portions of properties needed to implement this Project. Such letters shall describe the property and, to the extent practical, the portion of the property to be protected, shall state that the owner intends to enter into a permanent conservation easement to protect land that is part of the Project Site, and shall be signed by the property owner. The Grant Recipient shall submit the letters of intent to the Fund. The Fund will approve the Grant Recipient's requests for payment of any costs only after receiving such letters.
 - c. Prepare and execute a deed of conservation easement for each property and record each executed deed with the Mitchell County Register of Deeds.
 - d. Provide a copy of each recorded deed of conservation easement to the Fund. The Fund will approve the Grant Recipient's requests for payment of any costs for construction only after receiving all recorded deeds of conservation easement.
4. The Grant Recipient shall secure applicable Federal and State permits before the start of construction and submit copies of the permits to the Fund. The Fund shall approve requests for payment of the Grant Recipient's construction costs only after receiving copies of applicable Federal and State permits.
 5. In accordance with Water Quality Certification No. 3495, before construction begins, the Grant Recipient shall submit a Pre-Construction Notification (PCN) form and three (3) copies of the Project plans and specifications to the North Carolina Division of Water Quality (DWQ) 401 Certification Program for review. The Grant Recipient shall follow the latest guidelines on DWQ's website (<http://h2o.enr.state.nc.us/newetlands/index.html>) and contained in the Internal Technical Guide for Stream Work in North Carolina (DWQ and DLR, April 2001 or latest version (<http://h2o.enr.state.nc.us/newetlands/strmgide.html>)) for the types of information to submit to DWQ for review. The Grant Recipient shall name the Fund as the "agent" on the PCN form and shall send a copy of the PCN form to the Fund at the same time the form is sent to DWQ.
 6. In conducting this Project, the Grant Recipient shall employ principles for restoring streams established by the DWQ 401 Certification Program. The Grant Recipient shall work with staff of the DWQ 401 Certification Program to provide a Project design that, to the extent practicable, re-establishes the structure, function, and self-sustaining behavior of the Project reach of stream to those that existed before the stream reach was disturbed. The Fund will release funds for reimbursing the Grant Recipient for construction only after receiving a letter from the DWQ 401 Certification Program stating that either: (a) the Project design is capable of restoring the stream reach, or (b) if, in the opinion of the DWQ 401 Certification Program restoration of the full stream reach is not practicable, the Project design is capable of enhancing portions of the reach that cannot be restored. If DWQ does not provide such a letter within 30 days from receiving the PCN and Project design (plans and specifications) from the Grant Recipient, then the Fund will deem the design to meet the requirements of the DWQ 401 Water Quality Certification Program. Definitions used by the DWQ 401 Certification Program are given in Exhibit G.

Project Schedule:

1. **Construction Contract Date: February 10, 2015** (one year after the Contract Award Date). Enter into a construction contract by this date for the work identified as construction in Exhibit A. Failure to enter into a construction contract by this date will result in withdrawal of the Grant, unless the Fund's Board of Trustees has found the Grant Recipient had good cause for such failure and the Board of Trustees has set a date by which the Grant Recipient must take action.
2. **Contract Expiration Date: March 31, 2016**. Complete the Project Scope of Work and submit the Grant Contract Final Report (Grant Contract paragraph 12b and as otherwise specified in Exhibit A) by this date. The Fund will not reimburse the Grant Recipient for Project costs incurred after this date.
3. **Reimbursement Date: April 14, 2016**. The Fund must receive the Final Request for Payment for the Project by this date. The Fund will not accept or process for payment any request for payment received after this date. The Fund will not reimburse the Grant Recipient for costs incurred after the Contract Expiration Date.

EXHIBIT B
CWMTF Project No. 2013-416
Project Budget

Item	CWMTF Grant Funds⁽¹⁾	Matching Funds⁽²⁾	Total Item Budget
1. Design and permitting	\$60,000	\$0	\$60,000
2. Easement preparation and recordation	\$6,000	\$0	\$6,000
3. Construction administration/observation	\$30,000	\$0	\$30,000
4. Construction	\$259,000	\$0	\$259,000
5. Project administration	\$20,000	\$0	\$20,000
6. Value of easements to be donated	\$0	\$307,157 ⁽³⁾	\$307,157
Total Project Budget	\$375,000	\$307,157	\$682,157
% of Total Project Budget	55%	45%	100%

Notes:

(1) To obtain payment, the Grant Recipient must submit itemized documentation substantiating direct costs incurred in the implementing the project.

(2) Matching funds are: \$307,157 as value of an easement donated by Great Meadows, Inc.

(3) The value of a conservation easement (or other legal instrument acceptable to the Fund) donated to the project by a property owner may be claimed as matching funds contributed to the project only after the Grant Recipient has provided to the Fund all of the following information for that donated easement: (a) calculated area of the easement, (b) copy of the easement document as recorded by the county register of deeds, and (c) basis for the claimed value of the easement, which may be in the form of appraisal summaries, if recent appraisals have been prepared, or current property tax valuation assessed by the Mitchell County Tax Assessor's Office showing total value of land and/or improvements, if any, with indicated year of the actual assessment.

EXHIBIT C
CWMTF Project No. 2013-416
CWMTF Pre-Disbursement Checklist
Documents to be Submitted Before CWMTF Will Disburse Funds

REQUIREMENT	DESCRIPTION/WHAT TO SUBMIT
Submit before first request for payment	
1	Authorization to Obligate Written authorization from the governing board or other appropriate authority stating that it agrees to the obligations of Grant Recipient set out in this Grant Contract. (*See note below.)
1a	Articles of Incorporation and Bylaws Copy of Articles of Incorporation and Bylaws with amendments (to verify that the Grant Recipient is a non-profit corporation whose primary purpose is the conservation, preservation, and restoration of North Carolina's environmental and natural resources).
1b	Conflict of Interest Policy Notarized copy of conflict of interest policy.
1c	Tax-exempt Status Copy of IRS letter confirming tax-exempt status.
1d	No Overdue Tax Debts Signed form: State Grant Certification — Sworn Statement of No Overdue Tax Debts (Exhibit C.1).
1e	Assurances for Non-Federally Funded Contracts Signed form: Assurances for Non-Federally Funded Contracts (Exhibit C.2).
1f	Incumbency Certificate Certificate in the form of or similar to http://www.cwmtf.net/sampleincumbency.doc .
1g	Certificate of Existence Copy of a recent Certificate of Existence issued by the Office of the North Carolina Secretary of State.
2	Matching Funds Proof of availability of matching funds included in the project budget. (**See note below.)
3	Easements and/or Declarations of Covenants Letters of intent from property owners. <i>[Letters of intent are required from owners of all properties of the Project Site, except letters are not required: - For properties owned by the Grant Recipient and properties owned by the State of North Carolina, or - If a copy of the recorded instrument (typically a conservation agreement) that creates the property interest already has been provided to and accepted by the Fund.]</i> Letter from the holder of the easements stating that it accepts this role and its responsibilities. <i>[A letter from the holder is not required if a copy of the recorded instrument (typically a conservation agreement) that creates the property interest already has been provided to and accepted by the Fund.]</i>
4	Documents in Exhibit A Documents as identified in Exhibit A "Special Contract Conditions" (if any) as required prior to the release of CWMTF funds.
Submit before first request for construction payment	
5	Easements and/or Declarations of Covenants Copies recorded easements and/or declarations of covenants for the properties in Schedule of Properties for Legal Protection of Riparian Buffers in Exhibit A. Each easement and each declaration of covenants is subject to review and acceptance by CWMTF.
6	Construction Provide a copy of each applicable Federal or State permit issued for construction, or

	Permits	written documentation from the appropriate State agency that construction of the Project does not require a Federal or State permit.
7	Construction Contract Pricing Information	Within 30 days of executing a construction contract for the Project, submit construction contract pricing information consisting minimally of a statement of the scope of the construction work, agreed-upon constructor or vendor pricing for the construction work, and a total anticipated construction cost based on the pricing. (Refer to paragraph 11 of the Grant Contract.)
8	Documents in Exhibit A	Documents as identified in Exhibit A "Special Contract Conditions" (if any) as required prior to the release of CWMTF funds.
Submit before or accompanying request for final payment		
9	Grant Contract Final Report	Report per Grant Contract paragraph 12b.
10	Easements and/or Declarations of Covenants	Copies recorded easements and/or declarations of covenants for the properties in Schedule of Properties for Legal Protection of Riparian Buffers in Exhibit A. Each easement and each declaration of covenants is subject to review and acceptance by CWMTF.
11	Documents in Exhibit A	Documents as identified in Exhibit A "Special Contract Conditions" (if any) as required prior to the release of CWMTF funds.

* Examples of proof of authorization to obligate include:

- Resolution of the governing board to obligate.
- Certified copy of board meeting minutes documenting giving of authority to obligate.

**Examples of proof of availability of matching funds include:

- Grants from other sources:
 - Copy of grant agreement.
 - Copy of grant award letter.
- Local agency matching funds:
 - Resolution of the governing board.
 - Budget showing allocation of matching funds to the Project, accompanied by a certified copy of board meeting minutes approving the budget or by a certified copy of board meeting minutes authorizing use of local matching funds for the Project.
 - Certified copy of board meeting minutes attesting to the use and amount of local funds for match.
 - Letters from other sources of matching funds attesting to contribution of the funds.
- Value of conservation easements to be donated:
 - Current properties' fair market tax valuations assessed by the county tax assessor's office, prorated to apply only to the areas of the permanent conservation easements to be recorded for this project, or
 - Appraisals, prepared and signed by a North Carolina-licensed appraiser, of the diminution of properties' fair market values as a result of being encumbered by permanent conservation easements required for this project.

EXHIBIT C.1
STATE GRANT CERTIFICATION – NO OVERDUE TAX DEBTS

Instructions: Grant Recipient must complete this certification for all State funds received. Grant Recipient must enter appropriate information in the *[italicized areas]* below. This completed form will be kept on file by CWMTF and be available for review by the North Carolina Office of the State Auditor.

September 19, 2014

Address to: CWMTF Executive Director and DENR Controller

Certification:

We certify that the Toe River Valley Watch does not have any overdue tax debts, as defined by N.C.G.S. 105-243.1, at the federal, State, or local level. We further understand that any person who makes a false statement in violation of N.C.G.S. 143-6.2(b2) is guilty of a criminal offense punishable as provided by N.C.G.S. 143-34(b).

Sworn Statement:

Starli P. McDowell and Tressa Hartsell being duly sworn, say that we are the Board Chair and Board Secretary, respectively, of Toe River Valley Watch of Penland in the State of North Carolina; and that the foregoing certification is true, accurate and complete to the best of our knowledge and was made and subscribed by us. We also acknowledge and understand that any misuse of State funds will be reported to the appropriate authorities for further action.

Starli McDowell
Board Chair

Tressa Hartsell - secretary
Second Authorizing Official

Sworn to and subscribed before me this day by Rebecca Serafini, I have personal knowledge of ^{Tressa Hartsell} Starli McDowell's identity/I have seen satisfactory evidence of ^{Tressa Hartsell} Starli McDowell's identity by a current state or federal identification with ^{NC} Driver's License photograph, in the form of a NC driver's license (or other). Witness my hand and official stamp or seal this 22 day of September, 2014

Rebecca Serafini, Notary Public
Print Name: Rebecca Serafini

My Commission Expires: 9/15/2018
REBECCA SERAFINI
Notary Public
Yancey County
North Carolina
My Commission Expires Sep 15, 2018

(If Grant Recipient has questions about this form, please contact the North Carolina Office of the State Auditor: Angela Gunn at (919) 807-7556 or Harriet Abraham at (919) 807-7673.)

EXHIBIT C.2
ASSURANCES FOR NON-FEDERALLY FUNDED CONTRACTS

The Grant Recipient certifies that with regard to:

1. **DEBARMENT AND SUSPENSION** - To the best of its knowledge and belief that it and its principals:
 - (a) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State, or local government agency;
 - (b) have not within a 3-year period preceding this Grant Contract been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) have not within a 3-year period preceding this Grant Contract had one or more public transactions (Federal, State, or local) terminated for cause or default.

2. **LOBBYING** - To the best of his or her knowledge and belief, that:
 - (a) No Federal, State or local government appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal, State or local government agency; a member of Congress, North Carolina's General Assembly or local government body; an officer or employee of Congress, North Carolina's General Assembly or local government body, or an employee of a member of Congress, North Carolina's General Assembly or local government body, in connection with the awarding of any Federal, State or local government contract, the making of any Federal, State or local government grant, the making of any Federal, State or local government loan, the entering into of any Federal, State or local government cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal, State or local government contract, grant, loan, or cooperative agreement.
 - (b) If any funds other than Federal, State or local government appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency; a member of Congress, North Carolina's General Assembly or local government body; an officer or employee of Congress, North Carolina's General Assembly or local government body; or an employee of a member of Congress, North Carolina's General Assembly or local government body in connection with the Federal, State or local government contract, grant, loan, or cooperative agreement, the undersigned shall complete

and submit Standard Form-LLL, "Disclosure Form to Report Lobbying" in accordance with its instructions.

3. **DRUG-FREE WORK PLACE REQUIREMENTS** - It will comply by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the Grant Recipient's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing a drug-free awareness program to inform employees about -
 - (1) The dangers of drug abuse in the workplace;
 - (2) The Grant Recipient's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a) above;
- (d) Notifying the employee in the statement required by paragraph (a), above, that, as a condition of employment under the grant, the employee will -
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction;
- (e) Notifying the Fund within ten days after receiving notice under subparagraph (d)(2), above, from an employee or otherwise receiving actual notice of such conviction;
- (f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d)(2), above with respect to any employee who is so convicted -
 - (1) Taking appropriate personnel action against such an employee, up to and including termination; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f), above.

AND

4. Will comply with the provisions of the Equal Employment Practices Act set out in Article 49A of Chapter 143 of the North Carolina General Statutes.
5. Will comply, as applicable, with the provisions of the Wage and Hour Act, Occupational Safety and Health Act of North Carolina, Controlled Substance Examination Regulation, Retaliatory Employment Discrimination, Safety and Health Programs and Committees, Workplace Violence Prevention, and other applicable provisions of Chapter 95 of the North Carolina General Statutes regarding labor standards.
6. Will comply with all applicable requirements of all other state laws, executive orders, regulations and policies governing the Fund.

As the duly authorized representative of the Grant Recipient, I hereby certify that the Grant Recipient will comply with the above certifications (Items 1 through 6):

1. Grant Recipient Name & Address:

Toe River Valley Watch
P.O. Box 252
Ponland NC 28765

2. Typed Name & Title of Authorized Representative:

Starli P. McDowell
President Toe River Valley Watch

3. Signature of Authorized Representative:

Starli P. McDowell

4. Date:

9-10-14

EXHIBIT D

**CWMTF PROGRESS REPORT FORM AND
CWMTF GRANT CONTRACT FINAL REPORT FORM**

See following pages.



North Carolina Clean Water Management Trust Fund

Project Progress Report Form

A progress report must be submitted every three months from the contract effective date and with each payment request.

CWMTF project no.: **2013-416** Contract expiration date: **March 31, 2016**
 Project name/description: **Grassy Creek Restoration**

Grant Recipient: Toe River Valley Watch Primary contact:	Submit progress report to: Beth McGee CWMTF 1651 Mail Service Center Raleigh, NC 27699-1651 Beth.McGee@ncdenr.gov
--	--

Progress report no. _____ Date prepared: _____
 Reporting period: from _____ to _____

Summarize activities, progress, and changes in status since the most recent progress report (include problems encountered or anticipated and solutions for them):

Status of project deliverables and outputs:

Deliverable or output item	Progress since previous progress report and status at end of this reporting period	Expected completion date	Date completed
Property-owner letters of intent*			
Permits*			
Design plans, specifications and bid documents			
Recorded conservation agreements*			
Enter into a construction contract			
Stream restoration construction			
Construction contract pricing information*			
Grant contract final report*			

* Indicates items to be submitted to CWMTF, per the grant contract.

Signature

Date



North Carolina Clean Water Management Trust Fund

Grant Contract Final Report Form (restoration project)

This report must be submitted by the date given under Schedule in Exhibit A in order for CWMTF to release final payment.

CWMTF project no.: 2013-416
 Contract expiration date: **March 31, 2016**
 Project name/description: Grassy Creek Restoration

Date prepared:

Grant Recipient: Toe River Valley Watch Primary contact:	Submit progress report to: Beth McGee CWMTF 1651 Mail Service Center Raleigh, NC 27699-1651 Beth.McGee@ncdenr.gov
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Status of project deliverables and outputs:

Deliverable or output item	Status at project's completion	Date completed
Property-owner letters of intent*		
Permits*		
Design plans, specifications and bid documents		
Recorded conservation agreements*		
Stream restoration construction		

* Indicates items to be submitted to CWMTF, per the grant contract.

a. Project summary and evaluation:

Project's original objectives, any changes, and explanation for changes:

Project's original scope of work, any changes, and explanation for changes:

Any changes to the project budget and explanation for changes:

Work accomplished on the project:

Lessons learned during the project/would do differently next time:

b. Describe and discuss water quality benefits achieved or to be achieved because of the project:

c. Provide an estimate of reduction in the rate of streambank erosion because of the project (attach calculations and identify sources of input):

d. Provide a map showing the Project Site and identifying stream sections as having been restored, enhanced, or stabilized as defined in Exhibit A (identify and attach a map no larger than 11"x17"):

e. Categories and costs of stream restoration (complete the following table):

Category per DWQ 401 Certification Program (see Exhibit G)	Total Length in the Project (LF)	Unit Cost of Project Design and Permitting (\$/LF)	Unit Cost of Project Construction (\$/LF)
Restoration			
Enhancement			
Stabilization			
Total length			
f. Provide a geo-referenced shapefile (includes a .prj file) of the easement area boundary. Where multiple deeds of easement are recorded, include a separate polygon for each easement area. For accuracy, the shapefile should be derived from a survey of the easement area. If the easement area is not surveyed, the easement area boundary may be derived from mapping software (e.g., digitized in ArcMap).			
g. Provide project reports, plans, photographs, or other documents that verify the project's completion (attach or reference items already provided to CWMTF):			
h. Describe participation in the project by local partners or stakeholders (funding, in-kind contributions, and/or other):			
i. Provide an Engineer's Certification of Completion (attach if applicable):			

Signature _____

Date _____

EXHIBIT E

CWMTF INVOICE FORM

See following page

Exhibit E: CWMTF Cost Report and Payment Request

Complete Parts 1, 2, 3, and 4 and send, along with backup, to: Clean Water Management Trust Fund 1651 Mall Service Center Raleigh NC 27699-1651 Direct questions to the CWMTF Project Administrator, Lany Horton, at lany.horton@ncdcr.gov or (919) 707-9128.	Grant Recipient:	Toe River Valley Watch	
	Project Name:	Grassy Creek Restoration Design and Construction	
	CWMTF No. 2013-416	Expiration Date:	3/31/16
	Request no.	Request date:	

CWMTF FUNDS		budget: \$375,000		remaining: \$375,000.00	
Item	a	b	c	d	
	CWMTF funds budget	Payments previously approved	Payment requested	Payments approved +	Payment requested
CONTRACTED PROFESSIONAL SERVICES					
Design and permitting	\$60,000				\$0.00
Easement preparation and recordation, including legal fees	\$6,000				\$0.00
Construction administration/observation and as-built plans	\$30,000				\$0.00
CONTRACTED CONSTRUCTION					
Construction and plantings	\$269,000				\$0.00
PROJECT ADMINISTRATION	\$20,000				\$0.00
TOTAL CWMTF-FUNDED ITEMS	\$375,000	\$0.00	\$0.00		\$0.00
as % of Total Project Funds**	65.0%	#DIV/0!	#DIV/0!		#DIV/0!
				\$0.00	Total payment requested

MATCHING FUNDS		budget: \$307,167		remaining: \$307,167.00	
Item	e	f	g	h	
	Matching funds budget	Spending previously approved	Spending requested for approval	Spending approved +	Spending requested
VALUE OF EASEMENTS TO BE DONATED	\$307,167				\$0.00
TOTAL MATCH-FUNDED ITEMS	\$307,167	\$0.00	\$0.00		\$0.00
as % of Total Project Funds**	45.0%	#DIV/0!	#DIV/0!		#DIV/0!
**TOTAL PROJECT FUNDS (CWMTF + MATCH)		\$682,167	\$0.00	\$0.00	\$0.00

Initial indicating that a completed CWMTF Progress Report Form and backup substantiating spent amounts are attached.
 Initial indicating that applicable pre-disbursement documents (see Exhibit C) have been submitted.

I certify that, to the best of my knowledge and belief, the amounts in this payment request for which payment by CWMTF is requested were incurred according to the terms of the Grant Contract and that these amounts have not previously been requested for payment.

I further certify that (check one):

This invoice includes one or more expenditures incurred by a vendor(s) of the Grant Recipient for which the Grant Recipient has not yet paid its vendors, in which case the Grant Recipient agrees to: (1) pay its vendors for such expenditures within three banking days after receiving corresponding payment from CWMTF, and (2) confirm in writing to the Fund that all such previously unpaid vendor invoices have been paid; **OR**
 This invoice includes no expenditures incurred by a vendor of the Grant Recipient that have not yet been paid by the Grant Recipient and therefore is entirely for reimbursement by the Fund for payments already made by the Grant Recipient to its vendors.

Signature: _____

Submitted by: _____ Title: _____

email address: _____ Telephone number: _____

- Notes:**
- (1) To obtain payment, the Grant Recipient must submit itemized documentation substantiating costs incurred in implementing the project.
 - (2) The value of a conservation easement (or other legal instrument acceptable to the Fund) donated to the project by a property owner may be claimed as matching funds contributed to the project only after the Grant Recipient has provided to the Fund all of the following information for that donated easement: (a) calculated area of the easement, (b) copy of the easement document as recorded by the county register of deeds, and (c) basis for the claimed value of the easement, which may be in the form of appraisal summaries, if recent appraisals have been prepared, or current property tax valuation assessed by the county tax assessor's office showing total value of land and/or improvements, if any, with indicated year of the actual assessment.
 - (3) The CWMTF Grant Amount portion of funds in the Construction Contingency line item may be made available to other budget line items only after the Grant Recipient has demonstrated to the Fund that it has expended 100 percent of local matching funds and at least 90 percent of all other matching funds, including matching grant funds.

EXHIBIT F
UNIFORM ADMINISTRATION OF STATE GRANTS

**Required Reporting and Grant Fund Oversight for
Disbursement of State Funds to Non-State Entities**

North Carolina General Statutes and the North Carolina Administrative Code place certain reporting requirements on non-State entities that receive State funds via appropriations to private purpose trust funds. All such required reports shall be filed as indicated below on the forms required by the OSBM and the Office of the State Auditor ("OSA"). The specific reporting requirements obligations of State Agencies are as follows:

A. NCGS Chapter 143C, Article 6, Part 3

1. NCGS § 143C-6-22. Use of State funds by non-State entities.

(a) **Disbursement and Use of State Funds.** – Every non-State entity that receives, uses, or expends any State funds shall use or expend the funds only for the purposes for which they were appropriated by the General Assembly. State funds include federal funds that flow through the State Treasury.

(b) **Compliance by Non-State Entities.** – If the Director of the Budget finds that a non-State entity has spent or encumbered State funds for an unauthorized purpose, or fails to submit or falsifies the information required by G.S. 143C-6-23 or any other provision of law, the Director shall take appropriate administrative action to ensure that no further irregularities or violations of law occur and shall report to the Attorney General any facts that pertain to an apparent violation of a criminal law or an apparent instance of malfeasance, misfeasance, or nonfeasance in connection with the use of State funds. Appropriate administrative action may include suspending or withholding the disbursement of State funds and recovering State funds previously disbursed.

(c) **Civil Actions.** – Civil actions to recover State funds or to obtain other mandatory orders in the name of the State on relation of the Attorney General, or in the name of the Office of State Budget and Management, shall be filed in the General Court of Justice in Wake County. (2006-203, s. 3.)

2. NCGS § 143C-6-23. State grant funds: administration; oversight and reporting requirements:

(a) **Definitions.** – The following definitions apply in this Section A:

(1) "Grant" and "grant funds" means State funds disbursed as a grant by a State agency; however, the terms do not include any payment made by the Medicaid program, the State Health Plan for Teachers and State Employees, or other similar medical programs.

(2) "Grantee" means a non-State entity that receives State funds as a grant from a State

agency but does not include any non-State entity subject to the audit and other reporting requirements of the Local Government Commission.

(3) "Subgrantee" means a non-State entity that receives State funds as a grant from a grantee or from another subgrantee but does not include any non-State entity subject to the audit and other reporting requirements of the Local Government Commission.

(a) **Conflict of Interest Policy.** – Every grantee shall file with the State agency disbursing funds to the grantee a copy of that grantee's policy addressing conflicts of interest that may arise involving the grantee's management employees and the members of its board of directors or other governing body. The policy shall address situations in which any of these individuals may directly or indirectly benefit, except as the grantee's employees or members of its board or other governing body, from the grantee's disbursing of State funds, and shall include actions to be taken by the grantee or the individual, or both, to avoid conflicts of interest and the appearance of impropriety. The policy shall be filed before the disbursing State agency may disburse the grant funds.

(b) **No Overdue Tax Debts.** – Every grantee shall file with the State agency or department disbursing funds to the grantee a written statement completed by that grantee's board of directors or other governing body stating that the grantee does not have any overdue tax debts, as defined by G.S. 105-243.1, at the federal, State, or local level. The written statement shall be made under oath and shall be filed before the disbursing State agency or department may disburse the grant funds. A person who makes a false statement in violation of this subsection is guilty of a criminal offense punishable as provided by G.S. 143C-10-1.

(c) Omitted.

(d) Omitted.

(e) **Suspension and Recovery of Funds to Grant Recipients for Noncompliance.** – The Office of State Budget and Management, after consultation with the administering State agency, shall have the power to suspend disbursement of grant funds to grantees or subgrantees, to prevent further use of grant funds already disbursed, and to recover grant funds already disbursed for noncompliance with rules adopted pursuant to subsection (d) of this section. If the grant funds are a pass-through of funds granted by an agency of the United States, then the Office of State Budget and Management must consult with the granting agency of the United States and the State agency that is the recipient of the pass-through funds prior to taking the actions authorized by this subsection.

(f) **Audit Oversight.** – The State Auditor has audit oversight, with respect to grant funds received by the grantee or subgrantee, pursuant to Article 5A of Chapter 147 of the General Statutes, of every grantee or subgrantee that receives, uses, or expends grant funds. A grantee or subgrantee must, upon request, furnish to the State Auditor for audit all books, records, and other information necessary for the State Auditor to account fully for the use and expenditure of grant funds received by the grantee or subgrantee. The grantee or subgrantee must furnish any additional financial or budgetary information requested by the State Auditor, including audit

work papers in the possession of any auditor of a grantee or subgrantee directly related to the use and expenditure of grant funds.

(g) **Report on Grant Recipients That Failed to Comply.** – By May 1 of each year, the Office of State Budget and Management shall report to the Joint Legislative Commission on Governmental Operations and the Fiscal Research Division on all grantees or subgrantees that failed to comply with this section with respect to grant funds received in the prior fiscal year.

(h) **State Agencies to Submit Grant List to Auditor.** – By October 1 of each year, each State agency shall submit a list to the State Auditor, in the format prescribed by the State Auditor, of every grantee to which the agency disbursed grant funds in the prior fiscal year. The list shall include the amount disbursed to each grantee and other information as required by the State Auditor to comply with the requirements of this section. (2006-203, s. 3; 2007-323, s. 28.22A(o); 2007-345, s. 12.)

B. 09 NCAC 03M-Uniform Administration of State Grants

Notwithstanding the provisions of G.S. 150B-2 (8a) b, the rules set forth in 09 NCAC 03M are subject to the provisions of Chapter 150B of the General Statutes.

1. 09 NCAC 03M .0102 Definitions

Unless indicated otherwise from the context, the following terms shall have as their meanings in this Section B the definitions set forth below. All definitions are from 09 North Carolina Administrative Code ("NCAC") 03M.0102 unless otherwise noted. Any change to the rule or statute adopted by the authority that is the source of the definition shall be automatically incorporated herein.

(a) "Agency" shall mean and include every public office, public officer or official (State or local, elected or appointed), institution, board, commission, bureau, council, department, authority or other unit of government of the State or of any county, unit, special district or other political subdivision of government.

(b) "Audit" means an examination of records or financial accounts to verify their accuracy.

(c) "Certification of Compliance" means a report provided by the grantor agency to the Office of the State Auditor that states that the grantee has met the reporting requirements established by this Subchapter and included a statement of certification by the grantor agency and copies of the submitted grantee reporting package.

(d) "Compliance Supplement" refers to the North Carolina State Compliance Supplement, maintained by the State and Local Government Finance Division within the North Carolina Department of State Treasurer that has been developed in cooperation with agencies to assist the local auditor in identifying program compliance requirements and audit procedures for testing those requirements.

(e) "Contract" means a legal instrument that is used to reflect a relationship between the agency, grantee, and subgrantee.

(f) "Fiscal Year" means the annual operating year of the non-State entity.

(g) "Financial Assistance" means assistance that non-State entities receive or administer in the form of grants, loans, loan guarantees, property (including donated surplus property), cooperative agreements, interest subsidies, insurance, food commodities, direct appropriations, and other assistance. Financial assistance does not include amounts received as reimbursement for services rendered to individuals for Medicare and Medicaid patient services.

(h) "Financial Statement" means a report providing financial statistics relative to a given part of an organization's operations or status.

(i) "Grant" means financial assistance provided by an agency, grantee, or subgrantee to carry out activities whereby the grantor anticipates no programmatic involvement with the grantee or subgrantee during the performance of the grant.

(j) "Grantee" has the meaning in G.S. 143C-6-23(a)(2).

(k) "Grantor" means an entity that provides resources, generally financial, to another entity in order to achieve a specified goal or objective.

(l) "Non-State Entity" has the meaning in G.S. 143C-1-1(d)(18).

(m) "Public Authority" has the meaning in G.S. 159-7(10).

(n) "Single Audit" means an audit that includes an examination of an organization's financial statements, internal controls, and compliance with the requirements of Federal or State awards.

(o) "Special Appropriation" means a legislative act authorizing the expenditure of a designated amount of public funds for a specific purpose.

(p) "State Funds" means any funds appropriated by the North Carolina General Assembly or collected by the State of North Carolina. State funds include federal financial assistance received by the State and transferred or disbursed to non-State entities. Both Federal and State funds maintain their identity as they are subgranted to other organizations.

(q) "Subgrantee" has the meaning in G.S. 143C-6-23(a)(3).

(r) "Unit of Local Government" has the meaning in G.S. 159-7(15).

2. 09 NCAC 03M .0201 Allowable Uses of State Funds

Expenditures of State funds by any grantee shall be in accordance with the Cost Principles outlined in the Office of Management and Budget (OMB) Circular A-87. If the grant funding

includes federal sources, the grantee shall ensure adherence to the cost principles established by the Federal Office of Management and Budget.

3. 09 NCAC 03M .0202 Grantee Responsibilities

A grantee that receives State funds shall ensure that those funds are utilized for the purpose of the grant and shall expend those funds in compliance with reporting requirements established by this Subchapter. Grantees shall:

- (a) Provide the information required by the grantor agency in order to comply with the procedures for disbursement of grant funds.
- (b) Maintain reports and accounting records that support the allowable expenditure of State funds. All reports and records shall be made available for inspection by both the awarding agency and the Office of the State Auditor for oversight, monitoring, and evaluation purposes.
- (c) Ensure that subgrantees comply with all reporting requirements of the grantee.

4. 09 NCAC 03M .0203 Subgrantee Responsibilities

A subgrantee that receives State funds must ensure that those funds are spent for the purpose of the grant and shall expend those funds in compliance with reporting requirements established by this Subchapter. Subgrantees shall:

- (a) Provide the information required by the grantor agency in order to comply with the procedures for disbursement of grant funds.
- (b) Maintain reports and accounting records that support the allowable expenditure of State funds. All reports and records shall be available for inspection by both the awarding agency and the Office of the State Auditor for oversight, monitoring, and evaluation purposes.
- (c) Ensure that any subgrantees comply with all reporting requirement of the grantee.

5. 09 NCAC 03M .0205 Reporting Thresholds and Formats for Grantees and Subgrantees

(a) For the purposes of this Subchapter, there are three reporting thresholds established for grantees and subgrantees receiving State funds. The reporting thresholds are:

(1) Less than \$25,000 – A grantee that receives, uses, or expends State funds in an amount less than twenty-five thousand dollars (\$25,000) within its fiscal year must comply with the reporting requirements established by this Subchapter including:

- (A) A certification completed by the grantee Board and management stating that the State funds were received, used, or expended for the purposes for which they were granted; and
- (B) An accounting of the State funds received, used, or expended.

All reporting requirements shall be filed with the funding agency within six months after the end of the grantee's fiscal year in which the State funds were received.

(2) \$25,000 up to \$500,000 - A grantee that receives, uses, or expends State funds in an amount of at least twenty-five thousand (\$25,000) and up to five hundred thousand dollars (\$500,000) within its fiscal year must comply with the reporting requirements established by this Subchapter including:

(A) A certification completed by the grantee Board and management stating that the State funds were received, used, or expended for the purposes for which they were granted;

(B) An accounting of the State funds received, used, or expended; and

(C) A description of activities and accomplishments undertaken by the grantee with the State funds.

All reporting requirements shall be filed with the funding agency within six months after the end of the grantee's fiscal year in which the State funds were received.

(3) Greater than \$500,000 - A grantee that receives, uses, or expends State funds and in the amount greater than five hundred thousand dollars (\$500,000) within its fiscal year must comply with the reporting requirements established by this Subchapter including:

(A) A certification completed by the grantee Board and management stating that the State funds were received, used, or expended for the purposes for which they were granted;

(B) An audit prepared and completed by a licensed Certified Public Accountant for the grantee consistent with the reporting requirement of this Subchapter; and

(C) A description of activities and accomplishments undertaken by the grantee with the State funds.

All reporting requirements shall be filed with both the funding agency and the Office of the State Auditor within nine months after the end of the grantee's fiscal year in which the State funds were received.

(b) Unless prohibited by law, the costs of audits made in accordance with the provisions of this rule are allowable charges to State and Federal awards. The charges may be considered a direct cost or an allocated indirect cost, as determined in accordance with cost principles outlined in the Office of Budget and Management (OMB) Circular A-87. The cost of any audit not conducted in accordance with this rule is unallowable and shall not be charged to State or Federal grants.

(c) The audit requirements set forth herein do not replace a request for submission of audit reports by grantor agencies in connection with requests for direct appropriation of state aid by the General Assembly.

(d) Notwithstanding the provisions of these rules, a grantee may satisfy the reporting requirements of Part (a) (3)(B) of this rule by submitting a copy of the report required under the federal law with respect to the same funds.

(e) All grantees and subgrantees shall use the forms of the Office of State Budget and Management and of the Office of the State Auditor in making reports to the awarding agencies and the Office of the State Auditor.

C. Reporting Format

All reporting requirements as described above in Section B. 09 NCAC 03M-Uniform Administration of State Grants: Reporting Thresholds and Formats for Grant Recipients and Sub Grant Recipients must be submitted online via the NC Grants reporting system administered by the Office of State Budget and Management.

D. Project Audits

Grant Recipient agrees that the Fund and the OSA have the right to audit the books and records of the Grant Recipient pertaining to this Grant Contract both prior to Closing and for five (5) years after the completion or termination of this Grant Contract, or until all audit exceptions, if any, have been resolved, whichever is longer. The Grant Recipient shall retain complete accounting records, including original invoices, payrolls, agreements, working papers, or other documents clearly showing the nature of all costs incurred under this Grant Contract, for that same period of time. All such records shall be accessible to the Fund, DENR, OSBM and OSA.

EXHIBIT G

ADDITIONAL DEFINITIONS

Unless indicated otherwise from context, the following terms shall have as their meanings in this Grant Contract the definitions set forth below.

1. "Grant Contract" means a legal instrument that is used to reflect a relationship between the Grantor the Grant Recipient and is used interchangeably herein with the term "Contract".
2. "Construction contract" means a legally binding agreement between the Grant Recipient and another party for implementing construction work described in the project scope of work given in Exhibit A.
3. "Enter into a construction contract" means signature of a construction contract by both the Grant Recipient and another party for the construction work described in the project scope of work given in Exhibit A.
4. "Grant" means State funds disbursed by the Clean Water Management Trust Fund to a Grant Recipient to conduct activities described in this Grant Contract.
5. "Grant Recipient" shall mean one of the entities identified as a party to this Contract. Likewise, "Grantee" shall mean a party to a deed or other instrument of conveyance that is vested with a real property interest by said instrument.
6. "Grantor," as used in this Grant Contract, means the Fund in its capacity as provider Grant funds for the Grant Recipient's use in conducting the Project.
7. "Stream enhancement" means the process of implementing certain stream rehabilitation practices in order to improve water quality and/or ecological function. These practices typically are conducted on the stream bank or in the flood prone area. An enhancement procedure may include fencing cattle out of a stream and re-establishing vegetation in order to provide streambank stability. These types of practices should be conducted only on a stream reach that is not experiencing severe aggradation or erosion. Enhancement also may include placing in-stream habitat structures, provided that the in-stream structures do not affect the overall dimension, pattern, or profile of a stream that is in dynamic equilibrium.
8. "Stream restoration" means the process of converting an unstable, altered, or degraded stream corridor including adjacent riparian zone and flood prone areas, to its natural or referenced, stable conditions considering recent and future watershed conditions. This process also includes restoring the geomorphic dimension, pattern, and profile and biological and chemical integrity, including transport of water and sediment produced by the stream's watershed in order to achieve dynamic equilibrium.
9. "Stream stabilization" means the in-place stabilization of a severely eroding streambank. Stabilization techniques that include "soft" methods or natural materials (such as root wads, rock vanes, and vegetated crib walls) may be considered as part of a restoration design. However, stream stabilization techniques that rely heavily on "hard" engineering, such as concrete-lined channels, rip rap, or gabions to stabilize streambanks will not be considered to be stream restoration or stream enhancement.

EXHIBIT H

GENERAL TERMS AND CONDITIONS

A. Affirmative Covenants

1. Compliance with Laws. Grant Recipient agrees to perform and maintain the Project in compliance with all federal, state and local laws and regulations, including, without limitation, environmental, zoning and other land use laws and regulations. The Grant Recipient agrees to take reasonable steps to advise Project participants that they shall comply in the same manner.
2. Insurance. The Grant Recipient agrees to keep structures or improvements of any sort constituting the Project fully insured at all times during construction and to keep fully insured all building materials at any time located on the Project. Grant Recipient will ensure that all contractors furnish adequate payment and performance bonds.
3. No Mitigation. Grant Recipient shall not use a property(ies) of the Project Site or any portion thereof to satisfy compensation mitigation requirements under 33 U.S.C. § 1344 or N.C.G.S. 143-214.11.
4. No Pollution Credits. If the Project enables the Grant Recipient to reduce the discharge of phosphorus, nitrogen, or any other nutrient or pollutant below, or further below, applicable regulatory limits ("Pollution Credits"), Grant Recipient shall not sell, trade or give to another person or entity that percentage of any resulting credits achieved by the Project corresponding to the percentage of the Project costs provided by the Fund.
5. Right of Entry and Inspections. The Grant Recipient shall permit representatives of the Fund to visit the property(ies) of the Project Site and to review the activities of the Grant Recipient pursuant to the Grant, including books and records in any way related to the Grant or the Project.
6. Retention, Operation, Maintenance and Use.
 - (a) Grant Recipient agrees to complete the Project as approved by the Fund. The descriptions, purpose, schedules, scope of work and budgets set out in Exhibits A and B, and accompanying or related plans, specifications, estimates, procedures and maps submitted to the Fund by the Grant Recipient are the foundation of this Grant Contract. Only changes deemed non-material in type at the discretion of the Executive Director may be made without the consent of the Fund's Board of Trustees.
 - (b) For a period of ten (10) years after Project completion, Grant Recipient agrees to maintain and manage, at maximum functional utility, the end product of the Project. The Grant Recipient shall inspect the Project on a routine basis, with additional inspections following major storm events and shall make all necessary repairs to return the infrastructure to its full function within 2 weeks or as soon as possible thereafter.
 - (c) Property acquired, developed or improved with grant assistance from the Fund shall be retained and used for the purposes identified in Exhibit A, and Grant Recipient hereby

agrees to file or record such restrictions as may be required to assure such continued use and such restrictions shall be in form and substance satisfactory to the Fund.

(d) If at some future date, the Fund and the Grant Recipient agree that the Project should no longer continue on a property(ies) of the Project Site, then Grant Recipient will abandon the Project and allow such property to return to its natural state.

7. Material Modifications. Any proposed material modification of the Project shall be subject to approval by the Fund.

8. Conservation Easement or Other Land Use Restrictions. Grant Recipient shall obtain permanent Conservation Easements or other perpetual land use restrictions for this Project satisfactory to the Fund in its sole discretion.

9. Signs for Visibility. Grant Recipient shall post signs on publicly visible areas of properties that have public access and/or where private property owners are amenable to signage. The Fund will provide the signs or, if the Grant Recipient prefers, the Fund will provide artwork and specifications for signs fabricated and posted by the Grant Recipient. Signs must acknowledge the Fund as a source of funding for the Project.

10. Boundary Marking of Riparian Buffer Easement Areas. Grant Recipient shall mark the outside limits of riparian buffer conservation easement areas in a manner that is clearly visible and identifiable as the limit of the easement area.

11. Publicity. To the extent possible, the Grant Recipient will use its best efforts to appropriately publicize the Project's water quality benefits to the general public, local government and state representatives, including the role of the Fund in the funding and development of the Project.

12. Conflicts of Interest. Grant Recipient shall at all times comply with its conflict of interest policy.

13. Additional Requirements. Grant Recipient shall comply with all legal requirements applicable to the use of the Grant.

14. Tax Exempt Status. The Grant Recipient shall maintain tax-exempt status under Section 501(c)(3) of the Internal Revenue Code of 1986, as amended (or any successor section thereof) and the regulations promulgated there under (the "Code") and shall notify the Fund upon any change in its status under the Code prior to all Grant funds being disbursed to Grant Recipient.

15. If the Fund so requests, the Grant Recipient shall provide data to the North Carolina Rural Economic Development Center's Water Resources Inventory and Data Management Project and/or to the North Carolina Geographic Information Coordinating Council's NC One Map Project.

B. Representations and Warranties

In order to induce the Fund to enter into this Grant Contract and to make the Grant as herein provided, the Grant Recipient after reasonable inquiry makes the following representations, warranties and covenants, which shall remain in effect after the execution and delivery of this Grant Contract and any other documents required hereunder, any inspection or examinations at any time made by or on behalf of the Fund, and the completion of the Project by the Grant Recipient:

1. No Actions. There are no actions, suits, or proceedings pending, or to the knowledge of the Grant Recipient, threatened, against or affecting the Grant Recipient before any court, arbitrator, or governmental or administrative body or agency which might affect the Grant Recipient's ability to observe and perform its obligations under this Grant Contract.
2. Validity of Grant Documents. Upon execution and delivery of items required hereunder, this Grant Contract and the other grant documents and items required hereunder will be valid and binding agreements, enforceable in accordance with the terms thereof.
3. No Untrue Statements. Neither this Grant Contract nor any information, certificate, statement, or other document furnished by Grant Recipient in connection with the Grant, contains any untrue statement of a material fact or omits disclosure of a material fact which affects a property(ies) of the Project Site, the Conservation Easement or the ability of the Grant Recipient to perform this Grant Contract.
4. Additional Requirements. Grant Recipient shall comply with all legal requirements applicable to the use of the Grant funds.
5. Books and Records. The Grant Recipient agrees to maintain and make available to the Fund at all reasonable times all documents, books, and records of all expenditures for costs applicable to this Grant Contract, and to submit properly certified billings for such costs on forms prescribed by the Fund and supported by detailed data sheets which will facilitate the audit of the Grant Recipient's records.

C. Termination by Mutual Consent

The Parties may terminate this Contract by mutual written consent with 60 days prior written notice to the Contract Administrators, or as otherwise provided by law.

D. Termination for Cause; Events of Default

The happening of any of the following, after the expiration of any applicable cure period without the cure thereof, shall constitute an event of default ("Event(s) of Default") by the Grant Recipient of its obligations to the Fund, and shall entitle the Fund to exercise all rights and remedies under this Grant Contract and as otherwise available at law or equity:

1. Property Unsuitable. A determination by the Fund, prior to the disbursement of the Grant funds, that a property(ies) of the Project Site is unsuitable for the purposes of the Grant Contract.

2. Unsuitable Use. A property(ies) of the Project Site is used in a manner materially inconsistent with the purposes of this Grant Contract or the Project.
3. Default in Performance. The default by the Grant Recipient in the observance or performance of any of the terms, conditions or covenants of this Grant Contract; provided, however, that no such default shall occur until the Grant Recipient has been given written notice of the default and 30 days to cure have elapsed.
4. Misrepresentation. If any representation or warranty made by the Grant Recipient in connection with the Grant or any information, certificate, statement or report heretofore or hereafter made shall be untrue or misleading in any material respect at the time made.
5. Eligibility of Grant Recipient. If Grant Recipient ceases to be qualified to receive Grant funds or is dissolved or otherwise ceases to exist.
6. Abandonment of the Project. If Grant Recipient abandons or otherwise ceases to continue to make reasonable progress towards completion of the Project.

E. Fund's Rights and Remedies

If an Event of Default shall occur, the Fund shall have the following rights and remedies, all of which are exercisable at the Fund's sole discretion, and are cumulative, concurrent and independent rights:

1. Project Termination. If an Event of Default occurs, the Fund may, at its discretion suspend and/or terminate all obligations of the Fund hereunder. If, in the judgment of the Fund, such failure was due to no fault of the Grant Recipient, amounts required to resolve at minimum costs any irrevocable obligations properly incurred by Grant Recipient shall, in the discretion of the Fund, be eligible for assistance under this Grant Contract.
2. Additional Remedies. If an Event of Default occurs, the Fund shall have the power and authority, consistent with its statutory authority: (a) to prevent any impairment of the Project by any acts which may be unlawful or in violation of this Grant Contract or any other item or document required hereunder, (b) to obtain title to or otherwise preserve or protect its interest in the Project and any property acquired with Grant funds, (c) to compel specific performance of any of Grant Recipient's obligations under this Grant Contract, (d) to obtain return of all Grant Funds, including equipment if applicable and/or (e) to seek damages from any appropriate person or entity. The Fund, or its designee, may also, at the Fund's sole discretion, continue to complete the Project, or any portion thereof deemed appropriate by the Fund, and the Grant Recipient shall cooperate in the completion of the Project. The Fund shall be under no obligation to complete the Project.
3. Nonwaiver. No delay, forbearance, waiver, or omission of the Fund to exercise any right, power or remedy accruing upon any Event of Default shall exhaust or impair any such right, power or remedy or shall be construed to waive any such Event of Default or to constitute acquiescence therein. Every right, power and remedy given to the Fund may be exercised from

time to time and as often as may be deemed expedient by the Fund.

F. Miscellaneous

1. Modification. This Grant Contract may be rescinded, modified or amended only by written agreement executed by all parties hereto.
2. Benefit. This Grant Contract is made and entered into for the sole protection and benefit of the Fund, the State and the Grant Recipient, and their respective successors and assigns, subject always to the provisions of paragraph F.8 of this Exhibit H. Except for the State, there shall be no third party beneficiaries to this Grant Contract.
3. Further Assurance. In connection with and after the disbursement of Grant funds under this Grant Contract, upon the reasonable request of the Fund, the Grant Recipient shall execute, acknowledge and deliver or cause to be delivered all such further documents and assurances, and comply with any other requests as may be reasonably required by the Fund or otherwise appropriate to carry out and effectuate the Grant as contemplated by this Grant Contract and the purposes of the Conservation Easement.
4. Compliance by Others. The Grant Recipient shall be responsible for compliance with the terms of this Grant Contract by any sub-grant recipient, including but not limited to, a political subdivision, public agency, or qualified non-profit organization to which funds or obligations are transferred, delegated or assigned pursuant to this Grant Contract. Delegation by the Grant Recipient to a sub-grant recipient of any duty or obligation hereunder does not relieve the Grant Recipient of any duty or obligation created hereunder. Failure by such sub-grant recipient to comply with the terms of this Grant Contract shall be deemed failure by the Grant Recipient to comply with the terms of this Grant Contract. Any such delegation of duties or obligations shall be in writing, signed by the Grant Recipient and sub-grant recipient, and shall contain an affirmative covenant by the sub-grant recipient that it shall abide by the rules set forth in Title 09, Subchapter 03M of the North Carolina Administrative Code.
5. Independent Status of the Parties. The Parties are independent entities and neither this Grant Contract nor any provision of it or any of the Grant Documents shall be deemed to create a partnership or joint venture between the Parties. Further, neither the Grant Contract nor any of the Grant Documents shall in any way be interpreted or construed as making the Grant Recipient, its agents or employees, agents or representatives of the Fund. The Grant Recipient is and shall be an independent contractor in the performance of this Contract and as such shall be wholly responsible for the work to be performed and for the supervision of its employees. In no event shall the Fund be liable for debts or claims accruing or arising against the Grant Recipient. The Grant Recipient represents that it has, or shall secure at its own expense, all personnel required in the performance of this Contract. Such employees shall not be employees of, nor have any individual contractual relationship with, the Fund.
6. Indemnity. The Grant Recipient agrees, to the fullest extent permitted by law, to release, defend, protect, indemnify and hold harmless the State, the Fund, its Trustees, employees and agents against claims, losses, liabilities, damages, and costs, including reasonable attorney fees, which result from or arise out of: (a) damages or injuries to persons or property caused by the

negligent acts or omissions of Grant Recipient, its employees, or agents in use or management of the Project; or (b) use or presence of any hazardous substance, waste or other regulated material in, under or on a property(ies) of the Project Site. The obligations under this paragraph are independent of all other rights or obligations set forth herein. This indemnity shall survive the disbursement of the Grant funds, as well as any termination of this Grant Contract.

7. No Discrimination. The Grant Recipient shall assure that no person will be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity covered by this Grant Contract solely on the grounds of race, color, age, religion, sex or national origin.

8. Binding Effect, Contract Assignable. The terms hereof shall be binding upon and inure to the benefit of the successors, assigns, and personal representatives of the parties hereto; provided, however, that the Grant Recipient may not assign this Grant Contract or any of its rights, interests, duties or obligations hereunder or any Grant proceeds or other moneys to be advanced hereunder in whole or in part without the prior written consent of the Fund, which may be withheld for any reason and that any such assignment (whether voluntary or by operation of law) without said consent shall be void.

9. Governing Law, Construction and Jurisdiction. This Grant Contract and the other Grant documents and all matters relating thereto shall be governed by and construed and interpreted in accordance with the laws of the State of North Carolina, notwithstanding the principles of conflicts of law. The headings and section numbers contained herein are for reference purposes only. The terms of this Grant Contract shall be construed according to their plain meaning, and not strictly construed for or against either party hereto. The Grant Recipient hereby submits to the jurisdiction of the state and Federal courts located in North Carolina and agree that the Fund may, at its option, enforce its rights under the Grant Documents in such courts. The parties hereto intend this document to be an instrument executed under seal. The Fund and any party that is an individual, partnership or limited liability company hereby adopts the word "SEAL" following his/her signature and the name of the Fund or partnership or limited liability company as his/her/its legal seal.

10. Savings Clause. Invalidation of any one or more of the provisions of this Grant Contract, or portion thereof, shall in no way affect any of the other provisions hereof and portions thereof which shall remain in full force and effect.

11. Additional Remedies. Except as otherwise specifically set forth herein, the rights and remedies provided hereunder shall be in addition to, and not in lieu of, all other rights and remedies available in connection with this Grant Contract.

12. Survival. Where any representations, warranties, covenants, indemnities or other provisions contained in this Grant Contract by its context or otherwise, evidences the intent of the parties that such provisions should survive the termination of this Grant Contract or any Closing, the provisions shall survive any termination or Closing. Without limiting the generality of the foregoing, the parties specifically acknowledge and agree that the provisions of Exhibit H, Exhibit I, and the conditions shown on Exhibit A shall survive any termination of this Grant Contract as well as any Closing.

13. Incorporation of Exhibits. All exhibits attached to this Contract are fully incorporated as if set forth herein.

14. Entire Agreement. This Grant Contract constitutes the entire agreement between the parties hereto with respect to the subject matter hereof. All recitals, exhibits, schedules and other attachments hereto are incorporated herein by reference.

15. Headings. The headings of the various sections of this Grant Contract have been inserted for convenience only and shall not modify, define, limit or expand the express provisions of this Grant Contract.

16. Time of the Essence. Time is of the essence in the performance of this Grant Contract.

EXHIBIT I

CONSERVATION EASEMENTS

1. As used in this exhibit, "Conservation Easement" refers to the more general term "Conservation Agreement" as defined in NCGS Chapter 121, Article 4.
2. Conservation Easements obtained and recorded in connection with this Project shall be patterned after the Fund's template Deed of Conservation Easement for Restoration Purposes ("Restoration Easement").
3. Conservation Easements obtained and recorded in connection with this Project shall be held by a party satisfactory to the Fund.
4. Before disbursement of any construction funds under this Grant Contract, the Fund must review and approve the Conservation Easements, and said Conservation Easements must be recorded in the official land records of the appropriate county.
5. The acquisition of the Conservation Easements may herein also be referred to as the "Closing."
6. "Donated Conservation Easements" are Conservation Easements for which neither the Fund nor the Grant Recipient has expended or will expend any funds to obtain property interest.
7. Conservation easements for stream restoration riparian buffers may not be purchased using Grant funds. Conservation easements for stream restoration riparian buffers must be donated easements, be purchased with matching funds, and/or be purchased with funds not included in the project budget in Exhibit B.
8. The following requirements apply to all Conservation Easements obtained and recorded in connection with this Project:
 - (a) Conservation Easements shall have good and marketable title.
 - (b) The terms of Conservation Easements shall provide a third party right of enforcement to the State of North Carolina, such that in the event the easement holder satisfactory to the Fund fails to enforce any of the terms of Conservation Easements, the State shall have the independent right to enforce the terms of Conservation Easements through any and all authorities available under state law;
 - (c) Donated Conservation Easements shall be conveyed as an absolute gift to the easement holder satisfactory to the Fund subject to an executory interest in the State such that in the event that the easement holder satisfactory to the Fund attempts to terminate, transfer or otherwise divest itself of any rights, title or interests in a Conservation Easement without the prior written consent of the State, then all rights, title or interest in the Conservation Easement shall automatically vest in the State;
 - (d) Conservation Easements shall provide that, in the event the easement holder satisfactory to the Fund transfers or assigns the Conservation Easement to a third party, the organization receiving the interest will be a qualified organization as that term is defined in

Section 170(h)(3) of the Internal Revenue Code, which is organized or operated primarily for one of the conservation purposes specified in Section 170 (h)(4)(A) of the Internal Revenue Code, and that the transferee or assignee will further covenant and agree that the terms of the transfer or assignment will require it to continue to carry out in perpetuity the conservation purposes that the contribution was originally intended to advance. Specifically, Conservation Easements shall provide that, in the event the easement holder satisfactory to the Fund transfers the Conservation Easement, the easement holder satisfactory to the Fund shall covenant and agree to continue to monitor and observe the Conservation Easement in perpetuity with the State for such purposes as are described in the Conservation Easement and this Grant Contract and to report to the State and the Fund any observed violations thereof. The easement holder satisfactory to the Fund may be released from the obligation to monitor the Conservation Easement only with prior written approval of the State and the Fund; and

- (e) Any specific terms and conditions set forth on Exhibit A.

CONTRACT # 130805

GA13044

**STATE OF NORTH CAROLINA
CLEAN WATER MANAGEMENT TRUST FUND
GRANT CONTRACT
(RESTORATION OF DEGRADED LANDS)**

CWMTF PROJECT NUMBER: 2012-437

GRANTOR: North Carolina Clean Water Management Trust Fund ("Fund" or "CWMTF"), an independent agency of the State of North Carolina ("State") acting through its Board of Trustees solely in its official capacity pursuant to Article 18, Chapter 113A, of the North Carolina General Statutes ("NCGS")

CONTRACT ADMINISTRATOR: Beth McGee
Clean Water Management Trust Fund
1651 Mail Service Center
Raleigh, NC 27699-1651
phone: (919)707-9124
email: Beth.McGee@ncdenr.gov



GRANT RECIPIENT: County of Mecklenburg, a North Carolina Municipal Corporation ("Grant Recipient")

CONTRACT ADMINISTRATOR: David Woodie, Project Manager
Mecklenburg County Storm Water Services
700 North Tryon Street
Charlotte, NC 28202
phone: (704)336-3873
email: david.woodie@mecklenburgcountync.gov

FEDERAL I.D. NUMBER: 56-000319

FISCAL YEAR END DATE: June 30

GRANT AWARD DATE: October 15, 2012 (the "Award Date")

CONTRACT EFFECTIVE DATE: 3 July 2013 (the "Effective Date")

CONSTRUCTION CONTRACT DATE: October 15, 2013

CONTRACT EXPIRATION DATE: January 31, 2015 (the "Expiration Date")

REIMBURSEMENT DATE: February 14, 2015

GRANT AMOUNT: up to \$400,000 (the "Grant")

THIS GRANT CONTRACT (the "Grant Contract") is made and entered into, as of the Effective Date by and between the Fund and the Grant Recipient, both sometimes hereinafter referred to individually as a "Party" or collectively as the "Parties".

WITNESSETH:

WHEREAS, the Fund is authorized by NCGS Chapter 113A, Article 18 to, among other actions and activities, restore previously degraded lands to reestablish their ability to protect water quality, and acquire conservation easements or other interests in real property for protecting and conserving surface waters and drinking water supplies.

WHEREAS, the Grant Recipient is a qualified applicant as that term is defined in NCGS Chapter 113A, Article 254(a).

WHEREAS, the Grant Recipient submitted to the Fund an application requesting financial assistance to engage in a project for restoring degraded lands in order to protect the quality of surface waters.

WHEREAS, at its meeting on the Award Date, the Fund's Board of Trustees approved a project based on the Grant Recipient's application, and the Fund is willing to provide financial assistance (the "Grant") to the Grant Recipient pursuant to the terms and conditions set forth in this Grant Contract.

WHEREAS, the Grant Recipient agrees to conduct the project approved by the Fund's Board of Trustees for the purposes and according to the scope of work, conditions, and schedule in Exhibit A (the "Project") and pursuant to the project budget in Exhibit B of this Grant Contract.

WHEREAS, the Parties desire to enter into this Grant Contract and intend to be bound by its terms.

NOW, THEREFORE, for and in consideration of the Grant, the mutual promises each to the other made, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties mutually agree as follows:

1. **Grant Documents.** The documents described below are hereinafter collectively referred to as the "Grant Documents." In the case of conflict between any of these documents, each shall have priority over all others in the order listed below. Upon execution and delivery of this Grant Contract, it and the other Grant Documents and items required hereunder will constitute a valid and binding agreement between the Parties, enforceable in accordance with the terms thereof. The Grant Contract constitutes the entire agreement between the Parties, superseding all prior oral and written statements or agreements. Only changes deemed non-material in type at the discretion of the Fund's Executive Director may be made to the Grant Contract without the consent of the Fund's Board of Trustees.

2. The Grant Documents consist of:
 - a. Cover page
 - b. Grant Contract
 - c. Exhibit A – Project Description, Water Quality Benefits, Scope of Work, Special Contract Conditions, and Schedule
 - d. Exhibit B – Project Budget
 - e. Exhibit C – CWMTF Pre-Disbursement Checklist
 - f. Exhibit D – CWMTF Progress Report Form and CWMTF Grant Contract Final Report Form
 - g. Exhibit E – CWMTF Invoice Form
 - h. Exhibit F – *does not apply*
 - i. Exhibit G – Additional Definitions
 - j. Exhibit H – General Terms and Conditions
 - k. Exhibit I – Conservation Easements

Upon execution and delivery of the Grant Contract, and once the Department of Environment and Natural Resources has notified the Fund that funds for the Grant have been encumbered, and the Grant Recipient has received its counterpart original of the Grant Contract, fully executed and with all dates inserted where indicated on the cover sheet of the Grant Contract, then the Grant Contract will constitute a valid and binding agreement between the Parties, enforceable with the terms thereof.

3. **Purpose.** The purpose of the Grant is for restoring degraded lands in order to protect the quality of surface waters, more particularly described on Exhibit A (the “Project”). The Grant may be for Project design, permitting, construction, construction observation, construction contingency, and/or the Grant Recipient’s administrative costs. Grant funds may not be used for the purchase of improvements or debris on any property, or for the removal of improvements or debris on any property, or for any other purpose not set forth herein. Further, Grant funds may not be used for any eminent domain litigation or any action or expenditure related to eminent domain, unless approved by the Fund’s Board of Trustees in writing prior to the action. The Board of Trustees shall review requests to use Grant funds for eminent domain action on a case-by-case basis. The Grant Recipient shall provide such requests in writing.

4. **Fund’s Duties.** Subject to the appropriation, allocation, and availability to CWMTF of funds for the Project, CWMTF hereby agrees to pay the Grant funds to the Grant Recipient in accordance with the payment procedures set forth herein.

5. **Grant Recipient’s Duties.** The Grant Recipient shall carry out the Project pursuant to the terms of this Contract.

6. **Contract Period.** The Fund’s commitment to disburse Grant funds under this Grant Contract shall cease on the Reimbursement Date. It is the responsibility of the Grant Recipient to ensure that the Project is completed by the Expiration Date and that all costs to be reimbursed have been submitted to the Fund by the Reimbursement Date. After the Expiration Date, any Grant monies remaining under this Grant contract no longer will be available to the Grant Recipient except to pay proper invoices for budgeted costs incurred by the Expiration Date. The burden is on the Grant Recipient to request an extension of the Grant Contract if the Grant

7. **Permanent Protections on Properties of the Project Site.**

a. Projects for Which Property Protections are Required. Real property on which CWMTF funds are to be used for construction must be protected permanently by legal instruments conforming to NCGS Chapter 121, Article 4, and NCGS Chapter 113A, Article 18. The Grant Recipient shall so restrict, or cause to be restricted, uses of and activities on such real property by way of one or more permanent conservation agreements or by other instruments of property interest approved in writing by the Fund. Such instruments of property interest must encumber real property essential to the Project, including necessary easements and rights of way. Real property essential to the Project, including necessary easements and rights of way, hereinafter is collectively referred to as the "Project Site," being the properties given in Schedule of Properties for Legal Protection of Riparian Buffers in Exhibit A.

b. Requirements for Instruments of Property Interest. Property interests acquired for the Project shall provide or conform to the following:

(i) Property interests shall assure undisturbed use and possession of the properties of the Project Site for the purpose of construction and operation of the Project and include other such restrictions as the Fund deems necessary and satisfactory, in its sole discretion.

(ii) Property interests shall be permanent.

(iii) Property interests shall be approved as to form and content by the Fund in writing.

c. Requirements for Holding of Property Interest. Property interests acquired for the Project shall be held by a party satisfactory to the Fund, such party being identified as holder (as defined in NCGS Chapter 121, Article 4) in Exhibit A. If a holder of property interests acquired for this Project is not named in Exhibit A, or if the party named as holder in Exhibit A does not accept the role and responsibility of holder, the Grant Recipient shall name a party to serve as holder, subject to approval in writing by the Fund.

d. Recordation of Instruments of Property Interest. The Grant Recipient shall provide to the Fund a copy of instruments creating property interest obtained and recorded in connection with the Project Site. (The Fund will disburse construction funds only after having received from the Grant Recipient a copy of each recorded instrument and associated documents set forth in Exhibit I.)

8. **Pre-Disbursement Requirements.** Prior to the disbursement of Grant funds under this Grant Contract, the Grant Recipient shall deliver to the Fund all documentation described on Exhibits C.

9. **Disbursement of Grant Funds.**

a. Proportionate Spending of Matching Funds. Grant monies are awarded based on a

commitment of matching funds to the project. The Fund's final, cumulative portion of the total project cost will be no more than the percentage of funds originally committed to in the Grant Contract as given in Exhibit B. The Grant Recipient must demonstrate expenditure of matching funds as payments by the Fund are requested.

b. Requests for Payment. The Fund will disburse Grant funds following receipt by the Fund's Contract Administrator of the Grant Recipient's requests for payment. Each request for payment shall include a progress report, using the Progress Report form in Exhibit D, describing work accomplished on the Project and progress toward completing the Project Scope of Work, and a completed and signed Payment Request form, using the template Payment Request form in Exhibit E. Payment requests shall conform to the following:

(i) Exclusion of sales tax. Payment requests shall identify all amounts of sales tax for which the Grant Recipient and/or its vendors have or will obtain payment from the State Department of Revenue. The Fund will not reimburse the Grant Recipient for such amounts.

(ii) Supporting documentation. Payment requests shall be accompanied by appropriate itemized documentation supporting all expenses claimed and clearly identifying each expenditure for which payment is requested. Supporting documentation must be organized in a manner that clearly relates expenditures in the supporting documentation to the line items on the Payment Request form. Any request for payment that does not clearly identify each expenditure or does not relate each expenditure to the line items on the payment request form will not be processed and will be returned to the Grant Recipient for correction and resubmittal.

c. Alternate Disbursement of Grant Funds. The Fund may, upon request by the Grant Recipient, disburse Grant funds prior to the Grant Recipient's actual payment to its vendors if such expenditures are documented by vendors' third-party invoices. In order for the Fund to disburse Grant funds to the Grant Recipient based on unpaid third-party invoices, the Grant Recipient must: (a) indicate to the Fund in writing that it has reviewed and approved such unpaid invoices, (b) certify to the Fund in writing that it will make payment on all such unpaid invoices within three banking days of receipt of funds corresponding to the unpaid invoices, and (c) confirm in writing to the Fund that it has made such payments within three banking days of receipt of funds corresponding to the unpaid invoices.

d. Limited Grant Funds Disbursement in January, June, July, and December. Funds will not be disbursed during the first week of January, the last three weeks of June, the first week of July, and the last two weeks of December.

e. Certification by Licensed Professional. At the option of the Fund, payments may be made only on the certificate and seal of an appropriately qualified licensed professional (e.g., licensed Professional Engineer) that the work for which the payment is requested has been completed in accordance with approved plans and specifications, to which certificate shall be attached an estimate by the construction contractor setting forth items to be paid out of the proceeds of each such payment. The Fund, at its option, may further require a certificate from such appropriately qualified licensed professional that the portion of the Project completed as of the date of the request for payment has been completed according to schedule and otherwise as approved by the Fund and according to applicable standards and requirements. However, the Fund may, at its discretion, make payments without requiring such certificates or construction

contractor's estimate, in which event the Grant Recipient shall furnish the Fund a list of and the amounts of items to be paid out of the payment, or such other evidence as the Fund may require.

f. Payment Based on Progress. The Grant Recipient agrees to proceed with diligence to complete the Project according to the schedule set out in Exhibit A and shall show appropriate progress prior to each payment. Payment may be withheld or delayed if Grant Recipient fails to make progress on the Project satisfactory to the Fund. Amounts withheld shall be reimbursed with subsequent payments in the event that Grant Recipient is able to demonstrate an ability to resume satisfactory progress toward completion of the Project.

g. Proof of Payment. The Grant Recipient agrees to pay, as the work progresses, all bills for expenses incurred on the Project and agrees to submit to the Fund all such receipts, affidavits, canceled checks, or other evidences of payment as may be requested from time to time and, when and if requested by the Fund, to furnish adequate proof of payment of all indebtedness incurred on the Project.

h. The Fund Retaining Portion of Funds until Project Completion. The Fund will withhold payment from the Grant Recipient in the amount of \$25,000 of the Grant until the Grant Recipient has satisfactorily submitted its grant contract final report.

i. No Excess Costs. The Fund agrees to pay or reimburse the Grant Recipient only for costs actually incurred by the Grant Recipient that do not exceed the funds budgeted for the Project on Exhibit B.

j. Period for Incurring Expenditures. The Fund will reimburse the Grant Recipient for allowable Project expenditures that are incurred by the Grant Recipient or its vendors only during the period between the Award Date and the Expiration Date of the Grant Contract. The Fund will not reimburse the Grant Recipient for Project expenditures that are not incurred during this period.

k. Costs of Project Administration. The Fund agrees to reimburse the Grant Recipient for administrative costs consisting only of costs of labor for administrative work conducted exclusively on this Project. The Grant Recipient's requests for such payment shall be made under the Project Administration line item of Exhibit B and shall conform to the following:

(i) Costs allowable under the Project Administration line item shall be only costs of labor needed to comply with the general conditions of the Grant Contract (e.g., progress reports, payment requests, preparing the grant contract final report, revisions to the Grant Contract). Allowable Project Administration labor costs may include any of the following: (a) pay to the Grant Recipient's payroll employees, plus the Grant Recipient's cost of paying benefits on such pay (usually employees' pay times an audited or auditable benefits multiplier); (b) pay to contract employees of the Grant Recipient (e.g., temporary office support), payable at the Grant Recipient's actual cost, without application of a benefits multiplier; and/or (c) cost of professional services labor contracted by the Grant Recipient (e.g., engineering firm or consultant), payable at the Grant Recipient's actual cost for that labor.

(ii) Costs of any other work described in the Project Scope of Work in Exhibit A are not allowable under the Project Administration line item.

(iii) Costs allowable under the Project Administration line item shall be only costs of labor needed to comply with the general conditions of the Grant Contract (e.g., progress reports, payment requests, preparing the grant contract final report, revisions to the Grant Contract). Allowable Project Administration labor costs may include any of the following: (a) pay to the Grant Recipient's payroll employees, plus the Grant Recipient's cost of paying benefits on such pay (usually employees' pay times an audited or auditable benefits multiplier); (b) pay to contract employees of the Grant Recipient (e.g., temporary office support), payable at the Grant Recipient's actual cost, without application of a benefits multiplier; and/or (c) cost of professional services labor contracted by the Grant Recipient (e.g., engineering firm or consultant), payable at the Grant Recipient's actual cost for that labor.

(iv) Costs of any other work described in the Project Scope of Work in Exhibit A are not allowable under the Project Administration line item.

10. Grant Withdrawal for Failure to Enter into a Construction Contract. Pursuant to NCGS §113A-254(f), if the Project includes construction, this Grant award shall be withdrawn if the Grant Recipient fails to enter into a construction contract for the Project within one year after the Award Date, unless the Fund's Board of Trustees finds that Grant Recipient has good cause for the failure. If the Trustees find good cause for Grant Recipient's failure, the Trustees must set a date by which Grant Recipient must take action or forfeit the Grant.

11. Refunds, Reversion of Unexpended Funds, and Reduction of the Grant based on Construction Cost less than Budgeted Construction Cost.

a. Refunds. The Grant Recipient shall repay to the Fund any compensation it has received that exceeds the payment to which it is entitled herein, including any interest earned on funds reimbursed pursuant to the Grant Contract.

b. Reversion of Unexpended Funds. Any unexpended Grant monies shall revert to the Fund upon termination of the Grant Contract.

c. Reduction of the Grant based on Construction Cost less than Budgeted Construction Cost. The Fund may reduce the Grant amount if the Grant Recipient expects actual construction costs to be less than budgeted construction costs, as follows:

(i) The Grant Recipient shall provide to the Fund construction contract pricing information consisting minimally of a statement of the scope of the construction work, agreed-upon constructor or vendor pricing for the construction work, and a total anticipated construction cost based on the pricing.

(ii) The Grant Recipient shall deliver the construction contract pricing information to the Fund's Contract Administrator within 30 days of executing a construction contract for the Project.

(iii) The Fund may, at its discretion after comparing the total anticipated construction cost with the Grant Contract project budget, choose to reduce the Grant. If the Fund chooses to reduce the Grant, the Fund's Contract Administrator will prepare an amendment to the Grant Contract for this purpose, and the Fund will approve requests for reimbursement of the

Grant Recipient's construction costs only after the amendment has been signed by both the Grant Recipient and the Fund.

12. Reporting Requirements.

a. Project Progress Reports. The Grant Recipient shall submit a written detailed narrative progress report describing the work accomplished on the Project and progress toward meeting the Project objectives to the Fund's Contract Administrator of the Fund, every three months beginning three months from the Effective Date in the format set forth on Exhibit D. Progress reports shall be made on the form set forth on Exhibit D.

b. Grant Contract Final Report. The Grant Recipient shall submit to the Fund's Contract Administrator a grant contract final report providing the information items listed on the contract final report form given in Exhibit D and according to the schedule given in Exhibit A. If the grant contract final report is not acceptable to the fund, the Fund shall return it to the Grant Recipient for revision. Final payment will not be made until the grant contract final report is acceptable to the Fund.

c. Other Required Reporting. In addition to the reporting requirements contained herein, NCGS §143-6.2 and 09 North Carolina Administrative Code 03M may place certain reporting requirements on local governments or other political subdivisions of the State of North Carolina, or a combination of such entities, which receive State funds through the disbursement of special appropriations. All such required reports shall be filed in the format required by the Office of the State Auditor, and shall be forwarded as follows:

(i) One copy to: North Carolina Office of the State Auditor, 20601 Mail Service Center, Raleigh, NC 27699-0601

(ii) One copy to: DENR/Office of the Controller, 1606 Mail Service Center, Raleigh, NC 27699-1606

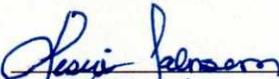
(iii) One copy to: Administrative Officer, North Carolina Clean Water Management Trust Fund, 1651 Mail Service Center, Raleigh, NC 27699-1651

13. Notice; Contract Administrators. All notices, requests or other communications permitted or required to be made under this Grant Contract or the other Grant Documents shall be given to the respective Contract Administrator. Notice shall be in writing, signed by the party giving such notice. Notice shall be deemed given three business days next following the date when deposited in the mail.

14. Signature Warranty. Each individual signing below warrants that he or she is duly authorized to sign this Contract for the respective party, and to bind said party to the terms and conditions of this Grant Contract.

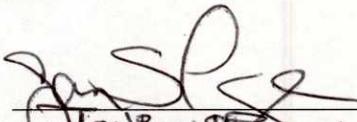
IN WITNESS WHEREOF, the Grant Recipient and the Fund have executed this Grant Contract in two originals as of the Effective Date. One original shall be retained by each Party. If there is any controversy among the documents, the document on file in the Fund's office shall control.

GRANT RECIPIENT:

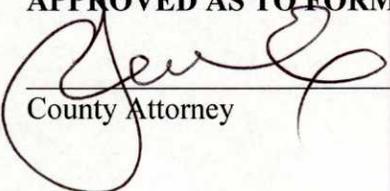
By: 
Name: Leslie Johnson
Title: Interim Assistant County Manager

[SEAL]

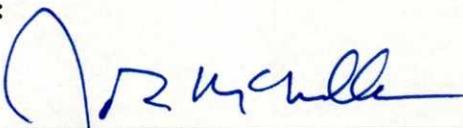
ATTEST:

By: 
Name: Jan Skye
Title: Clerk to the Board

APPROVED AS TO FORM:


County Attorney

FUND:

By:  (SEAL)
Name: John B. McMillan
Title: Chairman, Board of Trustees

In WITNESS WHEREOF, the parties have duly executed this Contract as of the date first above written.

CONTRACTOR:

ATTEST:

Contractor Signature

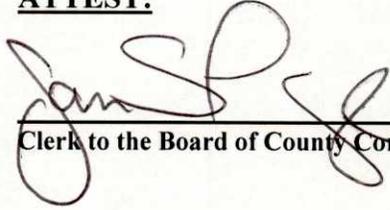
(N/A for Sole Proprietor)

MECKLENBURG COUNTY:

ATTEST:



County Manager/Assistant County Manager
Interim

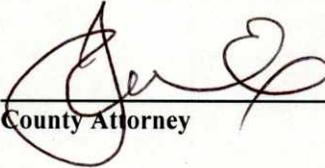


Clerk to the Board of County Commissioners

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

APPROVED AS TO FORM:

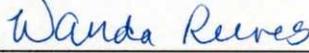
Finance Director



County Attorney

No Pre-Audit Required.

APPROVED AS TO INSURANCE REQUIREMENTS:



~~Finance Director~~ *Interim Director, Financial Services*

Director, Charlotte-Mecklenburg Division of Insurance Risk Management

EXHIBIT A
CWMTF Project No. 2012-437

<p>Stream of the Project Site: McDowell Creek Water bodies downstream: Torrence Creek River basin: Catawba County: Mecklenburg Amount requested from CWMTF: \$400,000 (revised from \$852,200 originally) CWMTF approved grant amount: up to \$400,000 Total matching contributions: \$1,800,000 Total project budget: \$2,200,000 % match (total matching contributions/total project budget): 82% Grant award date: October 15, 2012</p>

Project Site:

The Project Site is the main stem of McDowell Creek from its confluence with Torrence Creek to approximately 11,620 linear feet upstream.

Project Summary:

This project will provide design plans, specifications, and bid documents, obtain applicable Federal and State permits, and record conservation agreements for restoring the stream of the Project Site.

Site Conditions and Water Quality Objectives:

The Grant Recipient has developed information indicating that the stream at the Project Site has been straightened and carries high flows and sediment loads that downcut the stream bed, steepen and increase streambanks, and widen the stream channel. Successful implementation of this project will reduce sediment and pollutant transport to Mountain Island Lake.

Scope of Work:

The Grant Recipient shall conduct and complete the activities given below.

No.	Activity	Funding Source	
		CWMTF Funds	Matching Funds
1	Prepare an engineering design for restoring the stream of the Project Site, to include detailed plans, specifications, and bid documents		X
2	Prepare permit application documents and obtain applicable Federal and State permits for the construction of the engineering design		X
3	Negotiate, prepare, and record conservation agreements for the properties of the Project Site		X
4	Construct the stream restoration per the engineering design, including entering into a construction contract, accomplishing the construction, administering the construction contract, and observing and documenting conformance of the construction to the construction contract documents and approved changes	X	X
5	Administer the project		X

Special Contract Conditions:

1. The Grant Recipient shall provide or otherwise ensure that the matching funds identified in Exhibit B are provided to the project.
2. Stream restoration, enhancement, and stabilization designs and their implementation must provide for permanently vegetated riparian buffers and permanent legal protection of the riparian buffers in accordance with the following:
 - a. Riparian buffer widths, areas, and vegetation: Except as otherwise provided in these Special Contract Conditions, riparian buffers must be vegetated with protected existing vegetation and/or new planted vegetation established to become permanent over the entire buffer area in accordance with the following:
 - i. Widths and areas of riparian buffers: Estimated widths and areas of vegetated riparian buffers are given in the Schedule of Properties for Legal Protection of Riparian Buffers.

Schedule of Properties for Legal Protection of Riparian Buffers								
No	Property Owner	PIN	Stream Right			Stream Left		
			Approx. Stream Frontage (LF)	Approx. Protected Buffer Width (feet)	Approx. Protected Buffer Area (acres)	Approx. Stream Frontage (LF)	Approx. Protected Buffer Width (feet)	Approx. Protected Buffer Area (acres)
1	Birkdale Golf Course	943198	160	50	0.18	—	—	—
2a	James McCallister	943201	190	50	0.22	—	—	—
2b	John Glenn	943202	140	50	0.16	—	—	—
2c	David Johnson	943203	132	50	0.15	—	—	—
2d	Traci Hart	943204	94	50	0.11	—	—	—
2e	Douglas Kamm Estate	943205	99	50	0.11	—	—	—
2f	Douglas Marrelli	943206	95	50	0.11	—	—	—
2g	Eric Stachowski	943207	92	50	0.11	—	—	—
2h	Bruce Caughran	943208	192	50	0.22	—	—	—
3	McAulay Farms	907660	—	—	—	1,220	50	1.40
4	City of Charlotte	935101	1,840	50	2.11	—	—	—
5	County of Mecklenburg	926198	—	—	—	1,600	50	1.84
6		926299	—	—	—	540	50	0.62
7		923398	—	—	—	750	50	0.86
8		926298	—	—	—	252	50	0.29
9	Cookson Limited Partnership	904103 904105	2,560	50	2.94	—	—	—
10	County of Mecklenburg	918399	—	—	—	840	50	0.96
11		918396	—	—	—	210	50	0.24
12		926199	—	—	—	100	50	0.11
13		918166	—	—	—	1,175	50	1.35
14	William Brown	904106	920	50	1.06	—	—	—
15	County of Mecklenburg	918456	—	—	—	1,000	50	1.15
16	HL & SH Brown Partnership	905116	90	50	0.10	—	—	—
17	William Brown	905115	320	50	0.37	—	—	—
18		905114	340	50	0.39	—	—	—

19		905113	350	50	0.40	—	—	—
20	County of Mecklenburg	906119	—	—	—	1,950	50	2.24
21	William Brown	905112	370	50	0.42	—	—	—
22	Jo Ann Morrow	905111	400	50	0.46	—	—	—
23	William Brown	905110	520	50	0.60	—	—	—
24	Helen Pender	905109	620	50	0.71	—	—	—
25	Douglas Faulkner	905104	160	50	0.18	—	—	—
26	NC DOT (see note* below)	—	—	—	—	—	—	—
27	County of Mecklenburg	1509104	—	—	—	1,000	50	1.15
28	Grovene Russell	1509115	500	50	0.57	—	—	—
29	Jon Porter	1509114	190	50	0.22	—	—	—
30		1509113	200	50	0.23	—	—	—
31	Katie Grier	1508103	—	—	—	860	50	0.99
32	Nancy Sinderman	1509112	190	50	0.22	—	—	—
33	Robert Sherard	1509111	230	50	0.26	—	—	—
34	Paul Bocker	1509105	370	50	0.42	—	—	—
35	County of Mecklenburg	1509107	120	50	0.14	—	—	—
Totals			11,484		13.17	11,497		13.20
Average protected buffer widths				50			50	

*Note: Property No. 26 is owned by the State of North Carolina (Department of Transportation). Legal protection of the riparian buffer on this property is not a requirement of the Grant Contract.

- ii. **Woody vegetation along stream banks:** Along restored streambanks and protected existing streambanks, native woody vegetation must be protected or established at a density such that vegetation will reach a survival rate of at least 320 trees per acre. Native woody vegetation must be protected or established from the top of each protected or restored streambank outward to widths of at least 20 feet perpendicular to the streambank.
 - b. **Permanent legal protection of riparian buffers:** Real properties on which vegetated riparian buffers are to be provided must be protected permanently by legal instruments. Real properties of the Project Site and corresponding approximate land areas to be permanently protected are given in the Schedule of Properties for Legal Protection of Riparian Buffers.
3. The Grant Recipient shall permanently restrict uses on each property identified in the Schedule of Properties for Legal Protection of Riparian Buffers, as follows:
- a. **Properties owned by the County of Mecklenburg or the City of Charlotte:** Permanent property restrictions needed to implement the Project shall be in the form of recorded declarations of covenants of land-use restrictions conforming to NCGS Chapter 121, Article 4, and NCGS Chapter 113A, Article 18 (see Exhibit I and paragraph 7 of this Grant Contract) that provide for the State of North Carolina to have rights of enforcement of the declaration's conditions. The Grant Recipient shall conduct, or arrange for others to conduct, the following pursuant to these properties:
 - i. Submit to the Fund a letter of intent from the City of Charlotte indicating its intent to enter into permanent land-use restrictions on City of Charlotte-owned properties identified in the Schedule of Properties for Legal Protection of Riparian Buffers to protect portions of properties needed to implement this Project. This letter shall

- describe the properties and, to the extent practical, portions of the properties to be protected, shall state that the City of Charlotte intends to enter into permanent land-use restriction to protect land that is part of the Project Site, and shall be signed by the City of Charlotte. The Fund will approve the Grant Recipient's requests for payment of any costs only after receiving such a letter.
- ii. Prepare and execute a declaration of covenants of land-use restrictions for each property and record each executed declaration with the Mecklenburg County Register of Deeds.
 - iii. Provide a copy of each recorded declaration to the Fund. The Fund will approve the Grant Recipient's requests for payment of any costs for construction only after receiving all recorded declarations.
- b. Private properties (properties not owned by the County of Mecklenburg, the City of Charlotte, or the State of North Carolina): Permanent property restrictions needed to implement the Project shall be in the form of recorded permanent easements. The Grant Recipient may use the Mecklenburg County Storm Water Easement form of easement for this purpose. The following conditions apply to the process of recording easements for these properties:
- i. The Grant Recipient shall be the grantee of easements acquired for the Project and is prepared to monitor conditions on the land addressed in the conservation easements at least annually, in perpetuity.
 - ii. Submit to the Fund a letter of intent from each property owner indicating each owner's intent to enter into a permanent easement to protect portions of properties needed to implement this Project. Such letters shall describe the property and, to the extent practical, the portion of the property to be protected, shall state that the owner intends to enter into a permanent easement to protect land that is part of the Project Site, and shall be signed by the property owner. The Grant Recipient shall submit the letters of intent to the Fund. The Fund will approve the Grant Recipient's requests for payment of any costs only after receiving such letters.
 - i. Prepare and execute a deed of easement for each property and record each executed deed with the Mecklenburg County Register of Deeds.
 - ii. Provide a copy of each recorded deed of easement to the Fund. The Fund will approve the Grant Recipient's requests for payment of any costs for construction only after receiving all recorded deeds of easement.
 - iii. No Grant funds made available to the Project by the Fund may be used to pay for construction (including stream restoration and stormwater drainage work) on these properties.
4. The Grant Recipient shall secure applicable Federal and State permits before the start of construction and submit copies of the permits to the Fund. The Fund shall approve requests for payment of the Grant Recipient's construction costs only after receiving copies of applicable Federal and State permits.
 5. In accordance with Water Quality Certification No. 3495, before construction begins, the Grant Recipient shall submit a Pre-Construction Notification (PCN) form and three (3) copies of the Project plans and specifications to the North Carolina Division of Water Quality (DWQ) 401 Certification Program for review. The Grant Recipient shall follow the latest guidelines on DWQ's website (<http://h2o.enr.state.nc.us/ncwetlands/index.html>) and

contained in the Internal Technical Guide for Stream Work in North Carolina (DWQ and DLR, April 2001 or latest version (<http://h2o.enr.state.nc.us/ncwetlands/strmgide.html>) for the types of information to submit to DWQ for review. The Grant Recipient shall name the Fund as the “agent” on the PCN form and shall send a copy of the PCN form to the Fund at the same time the form is sent to DWQ.

6. In conducting this Project, the Grant Recipient shall employ principles for restoring streams established by the DWQ 401 Certification Program. The Grant Recipient shall work with staff of the DWQ 401 Certification Program to provide a Project design that, to the extent practicable, re-establishes the structure, function, and self-sustaining behavior of the Project reach of stream to those that existed before the stream reach was disturbed. The Fund will release funds for reimbursing the Grant Recipient for construction only after receiving a letter from the DWQ 401 Certification Program stating that either: (a) the Project design is capable of restoring the stream reach, or (b) if, in the opinion of the DWQ 401 Certification Program restoration of the full stream reach is not practicable, the Project design is capable of enhancing portions of the reach that cannot be restored. If DWQ does not provide such a letter within 30 days from receiving the PCN and Project design (plans and specifications) from the Grant Recipient, then the Fund will deem the design to meet the requirements of the DWQ 401 Water Quality Certification Program. Definitions used by the DWQ 401 Certification Program are given in Exhibit G.

Project Schedule:

1. **Construction Contract Date: October 15, 2013 (one year after the Contract Award Date).** Enter into a construction contract by this date for the work identified as construction in Exhibit A. Failure to enter into a construction contract by this date will result in withdrawal of the Grant, unless the Fund’s Board of Trustees has found the Grant Recipient had good cause for such failure and the Board of Trustees has set a date by which the Grant Recipient must take action.
2. **Contract Expiration Date: January 31, 2015.** Complete the Project Scope of Work and submit the Grant Contract Final Report (Grant Contract paragraph 12b and as otherwise specified in Exhibit A) by this date. The Fund will not reimburse the Grant Recipient for Project costs incurred after this date.
3. **Reimbursement Date: February 14, 2015.** The Fund must receive the Final Request for Payment for the Project by this date. The Fund will not accept or process for payment any request for payment received after this date. The Fund will not reimburse the Grant Recipient for costs incurred after the Contract Expiration Date.

EXHIBIT B
CWMTF Project No. 2012-437
Project Budget

Item	CWMTF Grant Funds⁽¹⁾	Matching Funds⁽²⁾	Total Item Budget
1. Design and permitting	\$0	\$315,000	\$315,000
2. Construction administration/observation	\$0	\$90,000	\$90,000
3. Construction	\$400,000	\$1,364,000	\$1,680,000
4. Easement preparation and recordation	\$0	\$10,000	\$10,000
5. Project administration	\$0	\$21,000	\$21,000
Total Project Budget	\$400,000	\$1,800,000	\$2,200,000
% of Total Project Budget	18%	82%	100%

Notes:

(1) To obtain payment, the Grant Recipient must submit itemized documentation substantiating direct costs incurred in the implementing the project.

(2) Matching funds are: \$1,800,000 as cash from Charlotte Mecklenburg Storm Water Services Capital Reserve.

EXHIBIT C
CWMTF Project No. 2012-437
CWMTF Pre-Disbursement Checklist
Documents to be Submitted Before CWMTF Will Disburse Funds

REQUIREMENT		DESCRIPTION/WHAT TO SUBMIT
Submit before first request for payment		
1	Authorization to Obligate	Written authorization from the governing board or other appropriate authority stating that it agrees to the obligations of Grant Recipient set out in this Grant Contract. (*See note below.)
2	Matching Funds	Proof of availability of matching funds included in the project budget. (**See note below.)
3	Easements and/or Declarations of Covenants	Letters of intent from owners of properties in Schedule of Properties for Legal Protection of Riparian Buffers in Exhibit A that are not owned by the County of Mecklenburg or the State of North Carolina.
4	Documents in Exhibit A	Documents as identified in Exhibit A "Special Contract Conditions" (if any) as required prior to the release of CWMTF funds.
Submit before first request for construction payment		
5	Easements and/or Declarations of Covenants	Copies recorded easements and/or declarations of covenants for properties in Schedule of Properties for Legal Protection of Riparian Buffers in Exhibit A. Each easement and each declaration of covenants is subject to review and acceptance by CWMTF.
6	Construction Permits	Provide a copy of each applicable Federal or State permit issued for construction, or written documentation from the appropriate State agency that construction of the Project does not require a Federal or State permit.
7	Construction Contract Pricing Information	Within 30 days of executing a construction contract for the Project, submit construction contract pricing information consisting minimally of a statement of the scope of the construction work, agreed-upon constructor or vendor pricing for the construction work, and a total anticipated construction cost based on the pricing. (Refer to paragraph 11 of the Grant Contract.)
8	Documents in Exhibit A	Documents as identified in Exhibit A "Special Contract Conditions" (if any) as required prior to the release of CWMTF funds.
Submit before or accompanying request for final payment		
9	Grant Contract Final Report	Report per Grant Contract paragraph 12b.
10	Documents in Exhibit A	Documents as identified in Exhibit A "Special Contract Conditions" (if any) as required prior to the release of CWMTF funds.

* Examples of proof of authorization to obligate include:

- Resolution of the governing board to obligate.
- Certified copy of board meeting minutes documenting giving of authority to obligate.

**Examples of proof of availability of matching funds include:

- Grants from other sources:
 - Copy of grant agreement.
 - Copy of grant award letter.
- Local agency matching funds:
 - Resolution of the governing board.
 - Budget showing allocation of matching funds to the Project, accompanied by a certified copy of board meeting minutes approving the budget or by a certified copy of board meeting minutes authorizing use of local matching funds for the Project.
 - Certified copy of board meeting minutes attesting to the use and amount of local funds for

- match.
- Letters from other sources of matching funds attesting to contribution of the funds.
- Value of conservation easements to be donated:
 - Current properties' fair market tax valuations assessed by the county tax assessor's office, prorated to apply only to the areas of the permanent conservation easements to be recorded for this project, or
 - Appraisals, prepared and signed by a North Carolina-licensed appraiser, of the diminution of properties' fair market values as a result of being encumbered by permanent conservation easements required for this project.

EXHIBIT D

**CWMTF PROGRESS REPORT FORM AND
CWMTF GRANT CONTRACT FINAL REPORT FORM**

See following pages.



North Carolina Clean Water Management Trust Fund

Project Progress Report Form

A progress report must be submitted every three months from the contract effective date and with each payment request.

CWMTF project no.: **2012-437** Contract expiration date:
 Project name/description: **Main Stem McDowell Creek Restoration (design and construction)**

Grant Recipient: Primary contact:	<u>Submit progress report to:</u> Beth McGee CWMTF 1651 Mail Service Center Raleigh, NC 27699-1651 Beth.McGee@ncdenr.gov
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Progress report no. _____ Date prepared: _____
 Reporting period: from _____ to _____

Summarize activities, progress, and changes in status since the most recent progress report (include problems encountered or anticipated and solutions for them):

Status of project deliverables and outputs:

Deliverable or output item	Progress since previous progress report and status at end of this reporting period	Expected completion date	Date completed
Property-owner letters of intent*			
Permits*			
Design plans, specifications and bid documents			
Recorded conservation agreements*			
Enter into a construction contract			
Stream restoration construction			
Construction contract pricing information*			
Grant contract final report*			

* Indicates items to be submitted to CWMTF, per the grant contract.

 Signature

 Date



North Carolina Clean Water Management Trust Fund

Grant Contract Final Report Form (restoration project)

This report must be submitted by the date given under Schedule in Exhibit A in order for CWMTF to release final payment.

CWMTF project no.: **2012-437**
 Contract expiration date: _____ Date prepared: _____
 Project name/description: **Main Stem McDowell Creek Restoration (design and construction)**

Grant Recipient: Primary contact:	<u>Submit progress report to:</u> Beth McGee CWMTF 1651 Mail Service Center Raleigh, NC 27699-1651 Beth.McGee@ncdenr.gov
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Status of project deliverables and outputs:

Deliverable or output item	Status at project's completion	Date completed
Property-owner letters of intent*		
Permits*		
Design plans, specifications and bid documents		
Recorded conservation agreements*		
Stream restoration construction		

* Indicates items to be submitted to CWMTF, per the grant contract.

a. Project summary and evaluation:

Project's original objectives, any changes, and explanation for changes:

Project's original scope of work, any changes, and explanation for changes:

Any changes to the project budget and explanation for changes:

Work accomplished on the project:

Lessons learned during the project/would do differently next time:

b. Describe and discuss water quality benefits achieved or to be achieved because of the project:

c. Provide an estimate of reduction in the rate of streambank erosion because of the project (attach calculations and identify sources of input):

d. Provide a map showing the Project Site and identifying stream sections as having been restored, enhanced, or stabilized as defined in Exhibit A (identify and attach a map no larger than 11"x17"):

e. Categories and costs of stream restoration (complete the following table):

Category per DWQ 401 Certification Program (see Exhibit A)	Total Length in the Project (LF)	Unit Cost of Project Design and Permitting (\$/LF)	Unit Cost of Project Construction (\$/LF)
Restoration			
Enhancement			
Stabilization			
Total length			
f. Provide a geo-referenced shapefile (includes a .prj file) of the easement area boundary. Where multiple deeds of easement are recorded, include a separate polygon for each easement area. For accuracy, the shapefile should be derived from a survey of the easement area. If the easement area is not surveyed, the easement area boundary may be derived from mapping software (e.g., digitized in ArcMap).			
g. Provide project reports, plans, photographs, or other documents that verify the project's completion (attach or reference items already provided to CWMTF):			
h. Describe participation in the project by local partners or stakeholders (funding, in-kind contributions, and/or other):			
i. Provide an Engineer's Certification of Completion (attach if applicable):			

Signature

Date

EXHIBIT E

CWMTF INVOICE FORM

Exhibit E: CWMTF Cost Report and Payment Request

Complete Parts 1, 2, 3, and 4 and send, along with backup, to: Clean Water Management Trust Fund 1651 Mail Service Center Raleigh NC 27699-1651 Direct questions to the CWMTF Project Administrator, Beth McGee, at Beth.McGee@ncdenr.gov or (919)707-9124.	Grant Recipient	County of Mecklenburg	
	Project Name	Main Stem McDowell Creek Restoration (design and construction)	
	CWMTF No. 2012-437	Expiration Date:	January 31, 2015
	Request no.	Request date:	

CWMTF FUNDS		budget: \$400,000		remaining: \$400,000.00	
Item	a	b	c	d	
	CWMTF funds budget	Payments previously approved	Payment requested	Payments approved + Payment requested	
Construction*	\$400,000			\$0.00	
Less sales tax reimbursement by NC DOR				\$0.00	
TOTAL CWMTF-FUNDED ITEMS	\$400,000	\$0.00	\$0.00	\$0.00	
as % of Total Project Funds**	18.2%	#DIV/0!	#DIV/0!	#DIV/0!	
			\$0.00	← Total payment requested	

* Italics indicate the item is co-funded (with both CWMTF funds and matching funds).

MATCHING FUNDS		budget: \$1,800,000		remaining: \$1,800,000.00	
Item	e	f	g	h	
	Matching funds budget	Spending previously approved	Spending requested for approval	Spending approved + Spending requested	
Design and permitting	\$315,000			\$0.00	
Construction administration/observation	\$80,000			\$0.00	
Easement preparation and recordation	\$10,000			\$0.00	
Project administration	\$21,000			\$0.00	
Construction	\$1,364,000			\$0.00	
Less sales tax reimbursement by NC DOR				\$0.00	
TOTAL MATCH-FUNDED ITEMS	\$1,800,000	\$0.00	\$0.00	\$0.00	
as % of Total Project Funds**	81.8%	#DIV/0!	#DIV/0!	#DIV/0!	

**TOTAL PROJECT FUNDS (CWMTF + MATCH)	\$2,200,000	\$0.00	\$0.00	\$0.00
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Initial indicating that a completed CWMTF Progress Report Form and backup substantiating spent amounts are attached.

Initial indicating that applicable pre-disbursement documents (see Exhibit C) have been submitted.

I certify that, to the best of my knowledge and belief, the amounts in this payment request for which payment by CWMTF is requested were incurred according to the terms of the Grant Contract and that these amounts have not previously been requested for payment.

I further certify that (check one):

This invoice includes one or more expenditures incurred by a vendor(s) of the Grant Recipient for which the Grant Recipient has not yet paid its vendors, in which case the Grant Recipient agrees to: (1) pay its vendors for such expenditures within three banking days after receiving corresponding payment from CWMTF, and (2) confirm in writing to the Fund that all such previously unpaid vendor invoices have been paid; **or**

This invoice includes no expenditures incurred by a vendor of the Grant Recipient that have not yet been paid by the Grant Recipient and therefore is entirely for reimbursement by the Fund for payments already made by the Grant Recipient to its vendors.

Signature: _____

Submitted by: _____ Title: _____

email address: _____ Telephone number: _____

Notes:
 (1) To obtain payment, the Grant Recipient must submit itemized documentation substantiating costs incurred in implementing the project.

EXHIBIT F

Does not apply to this grant contract.

EXHIBIT G

ADDITIONAL DEFINITIONS

Unless indicated otherwise from context, the following terms shall have as their meanings in this Grant Contract the definitions set forth below.

1. "Grant Contract" means a legal instrument that is used to reflect a relationship between the Grantor the Grant Recipient and is used interchangeably herein with the term "Contract".
2. "Construction contract" means a legally binding agreement between the Grant Recipient and another party for implementing construction work described in the project scope of work given in Exhibit A.
3. "Enter into a construction contract" means signature of a construction contract by both the Grant Recipient and another party for the construction work described in the project scope of work given in Exhibit A.
4. "Grant" means State funds disbursed by the Clean Water Management Trust Fund to a Grant Recipient to conduct activities described in this Grant Contract.
5. "Grant Recipient" shall mean one of the entities identified as a party to this Contract. Likewise, "Grantee" shall mean a party to a deed or other instrument of conveyance that is vested with a real property interest by said instrument.
6. "Grantor," as used in this Grant Contract, means the Fund in its capacity as provider Grant funds for the Grant Recipient's use in conducting the Project.
7. "Stream enhancement" means the process of implementing certain stream rehabilitation practices in order to improve water quality and/or ecological function. These practices typically are conducted on the stream bank or in the flood prone area. An enhancement procedure may include fencing cattle out of a stream and re-establishing vegetation in order to provide streambank stability. These types of practices should be conducted only on a stream reach that is not experiencing severe aggradation or erosion. Enhancement also may include placing in-stream habitat structures, provided that the in-stream structures do not affect the overall dimension, pattern, or profile of a stream that is in dynamic equilibrium.
8. "Stream restoration" means the process of converting an unstable, altered, or degraded stream corridor including adjacent riparian zone and flood prone areas, to its natural or referenced, stable conditions considering recent and future watershed conditions. This process also includes restoring the geomorphic dimension, pattern, and profile and biological and chemical integrity, including transport of water and sediment produced by the stream's watershed in order to achieve dynamic equilibrium.
9. "Stream stabilization" means the in-place stabilization of a severely eroding streambank. Stabilization techniques that include "soft" methods or natural materials (such as root wads, rock vanes, and vegetated crib walls) may be considered as part of a restoration design. However, stream stabilization techniques that rely heavily on "hard" engineering, such as concrete-lined channels, rip rap, or gabions to stabilize streambanks will not be considered to be stream restoration or stream enhancement.

EXHIBIT H

GENERAL TERMS AND CONDITIONS

A. Affirmative Covenants

1. Compliance with Laws. Grant Recipient agrees to perform and maintain the Project in compliance with all federal, state and local laws and regulations, including, without limitation, environmental, zoning and other land use laws and regulations. The Grant Recipient agrees to take reasonable steps to advise Project participants that they shall comply in the same manner.
2. Insurance. The Grant Recipient agrees to keep structures or improvements of any sort constituting the Project fully insured at all times during construction and to keep fully insured all building materials at any time located on the Project. Grant Recipient will ensure that all contractors furnish adequate payment and performance bonds.
3. No Mitigation. Grant Recipient shall not use a property(ies) of the Project Site or any portion thereof to satisfy compensation mitigation requirements under 33 U.S.C. § 1344 or N.C.G.S. 143-214.11.
4. No Pollution Credits. If the Project enables the Grant Recipient to reduce the discharge of phosphorus, nitrogen, or any other nutrient or pollutant below, or further below, applicable regulatory limits ("Pollution Credits"), Grant Recipient shall not sell, trade or give to another person or entity that percentage of any resulting credits achieved by the Project corresponding to the percentage of the Project costs provided by the Fund.
5. Right of Entry and Inspections. The Grant Recipient shall permit representatives of the Fund to visit the property(ies) of the Project Site and to review the activities of the Grant Recipient pursuant to the Grant, including books and records in any way related to the Grant or the Project.
6. Retention, Operation, Maintenance and Use.
 - (a) Grant Recipient agrees to complete the Project as approved by the Fund. The descriptions, purpose, schedules, scope of work and budgets set out in Exhibits A and B, and accompanying or related plans, specifications, estimates, procedures and maps submitted to the Fund by the Grant Recipient are the foundation of this Grant Contract. Only changes deemed non-material in type at the discretion of the Executive Director may be made without the consent of the Fund's Board of Trustees.
 - (b) For a period of ten (10) years after Project completion, Grant Recipient agrees to maintain and manage, at maximum functional utility, the end product of the Project. The Grant Recipient shall inspect the Project on a routine basis, with additional inspections following major storm events and shall make all necessary repairs to return the infrastructure to its full function within 2 weeks or as soon as possible thereafter.
 - (c) Property acquired, developed or improved with grant assistance from the Fund shall be retained and used for the purposes identified in Exhibit A, and Grant Recipient hereby

agrees to file or record such restrictions as may be required to assure such continued use and such restrictions shall be in form and substance satisfactory to the Fund.

(d) If at some future date, the Fund and the Grant Recipient agree that the Project should no longer continue on a property(ies) of the Project Site, then Grant Recipient will abandon the Project and allow such property to return to its natural state.

7. Material Modifications. Any proposed material modification of the Project shall be subject to approval by the Fund.

8. Conservation Easement or Other Land Use Restrictions. Grant Recipient shall obtain permanent Conservation Easements or other perpetual land use restrictions for this Project satisfactory to the Fund in its sole discretion.

9. Signs for Visibility. Grant Recipient shall post signs on publicly visible areas of properties that have public access and/or where private property owners are amenable to signage. The Fund will provide the signs or, if the Grant Recipient prefers, the Fund will provide artwork and specifications for signs fabricated and posted by the Grant Recipient. Signs must acknowledge the Fund as a source of funding for the Project.

10. Boundary Marking of Riparian Buffer Easement Areas. Grant Recipient shall mark the outside limits of riparian buffer conservation easement areas in a manner that is clearly visible and identifiable as the limit of the easement area.

11. Publicity. To the extent possible, the Grant Recipient will use its best efforts to appropriately publicize the Project's water quality benefits to the general public, local government and state representatives, including the role of the Fund in the funding and development of the Project.

12. Conflicts of Interest. Grant Recipient shall at all times comply with its conflict of interest policy.

13. Additional Requirements. Grant Recipient shall comply with all legal requirements applicable to the use of the Grant.

14. Tax Exempt Status. The Grant Recipient shall maintain tax-exempt status under Section 501(c)(3) of the Internal Revenue Code of 1986, as amended (or any successor section thereof) and the regulations promulgated there under (the "Code") and shall notify the Fund upon any change in its status under the Code prior to all Grant funds being disbursed to Grant Recipient.

15. If the Fund so requests, the Grant Recipient shall provide data to the North Carolina Rural Economic Development Center's Water Resources Inventory and Data Management Project and/or to the North Carolina Geographic Information Coordinating Council's NC One Map Project.

B. Representations and Warranties

In order to induce the Fund to enter into this Grant Contract and to make the Grant as herein provided, the Grant Recipient after reasonable inquiry makes the following representations, warranties and covenants, which shall remain in effect after the execution and delivery of this Grant Contract and any other documents required hereunder, any inspection or examinations at any time made by or on behalf of the Fund, and the completion of the Project by the Grant Recipient:

1. No Actions. There are no actions, suits, or proceedings pending, or to the knowledge of the Grant Recipient, threatened, against or affecting the Grant Recipient before any court, arbitrator, or governmental or administrative body or agency which might affect the Grant Recipient's ability to observe and perform its obligations under this Grant Contract.
2. Validity of Grant Documents. Upon execution and delivery of items required hereunder, this Grant Contract and the other grant documents and items required hereunder will be valid and binding agreements, enforceable in accordance with the terms thereof.
3. No Untrue Statements. Neither this Grant Contract nor any information, certificate, statement, or other document furnished by Grant Recipient in connection with the Grant, contains any untrue statement of a material fact or omits disclosure of a material fact which affects a property(ies) of the Project Site, the Conservation Easement or the ability of the Grant Recipient to perform this Grant Contract.
4. Additional Requirements. Grant Recipient shall comply with all legal requirements applicable to the use of the Grant funds.
5. Books and Records. The Grant Recipient agrees to maintain and make available to the Fund at all reasonable times all documents, books, and records of all expenditures for costs applicable to this Grant Contract, and to submit properly certified billings for such costs on forms prescribed by the Fund and supported by detailed data sheets which will facilitate the audit of the Grant Recipient's records.

C. Termination by Mutual Consent

The Parties may terminate this Contract by mutual written consent with 60 days prior written notice to the Contract Administrators, or as otherwise provided by law.

D. Termination for Cause; Events of Default

The happening of any of the following, after the expiration of any applicable cure period without the cure thereof, shall constitute an event of default ("Event(s) of Default") by the Grant Recipient of its obligations to the Fund, and shall entitle the Fund to exercise all rights and remedies under this Grant Contract and as otherwise available at law or equity:

1. Property Unsuitable. A determination by the Fund, prior to the disbursement of the Grant funds, that a property(ies) of the Project Site is unsuitable for the purposes of the Grant Contract.

2. Unsuitable Use. A property(ies) of the Project Site is used in a manner materially inconsistent with the purposes of this Grant Contract or the Project.
3. Default in Performance. The default by the Grant Recipient in the observance or performance of any of the terms, conditions or covenants of this Grant Contract; provided, however, that no such default shall occur until the Grant Recipient has been given written notice of the default and 30 days to cure have elapsed.
4. Misrepresentation. If any representation or warranty made by the Grant Recipient in connection with the Grant or any information, certificate, statement or report heretofore or hereafter made shall be untrue or misleading in any material respect at the time made.
5. Eligibility of Grant Recipient. If Grant Recipient ceases to be qualified to receive Grant funds or is dissolved or otherwise ceases to exist.
6. Abandonment of the Project. If Grant Recipient abandons or otherwise ceases to continue to make reasonable progress towards completion of the Project.

E. Fund's Rights and Remedies

If an Event of Default shall occur, the Fund shall have the following rights and remedies, all of which are exercisable at the Fund's sole discretion, and are cumulative, concurrent and independent rights:

1. Project Termination. If an Event of Default occurs, the Fund may, at its discretion suspend and/or terminate all obligations of the Fund hereunder. If, in the judgment of the Fund, such failure was due to no fault of the Grant Recipient, amounts required to resolve at minimum costs any irrevocable obligations properly incurred by Grant Recipient shall, in the discretion of the Fund, be eligible for assistance under this Grant Contract.
2. Additional Remedies. If an Event of Default occurs, the Fund shall have the power and authority, consistent with its statutory authority: (a) to prevent any impairment of the Project by any acts which may be unlawful or in violation of this Grant Contract or any other item or document required hereunder, (b) to obtain title to or otherwise preserve or protect its interest in the Project and any property acquired with Grant funds, (c) to compel specific performance of any of Grant Recipient's obligations under this Grant Contract, (d) to obtain return of all Grant Funds, including equipment if applicable and/or (e) to seek damages from any appropriate person or entity. The Fund, or its designee, may also, at the Fund's sole discretion, continue to complete the Project, or any portion thereof deemed appropriate by the Fund, and the Grant Recipient shall cooperate in the completion of the Project. The Fund shall be under no obligation to complete the Project.
3. Nonwaiver. No delay, forbearance, waiver, or omission of the Fund to exercise any right, power or remedy accruing upon any Event of Default shall exhaust or impair any such right, power or remedy or shall be construed to waive any such Event of Default or to constitute acquiescence therein. Every right, power and remedy given to the Fund may be exercised from

time to time and as often as may be deemed expedient by the Fund.

F. Miscellaneous

1. Modification. This Grant Contract may be rescinded, modified or amended only by written agreement executed by all parties hereto.
2. Benefit. This Grant Contract is made and entered into for the sole protection and benefit of the Fund, the State and the Grant Recipient, and their respective successors and assigns, subject always to the provisions of paragraph F.8 of this Exhibit H. Except for the State, there shall be no third party beneficiaries to this Grant Contract.
3. Further Assurance. In connection with and after the disbursement of Grant funds under this Grant Contract, upon the reasonable request of the Fund, the Grant Recipient shall execute, acknowledge and deliver or cause to be delivered all such further documents and assurances, and comply with any other requests as may be reasonably required by the Fund or otherwise appropriate to carry out and effectuate the Grant as contemplated by this Grant Contract and the purposes of the Conservation Easement.
4. Compliance by Others. The Grant Recipient shall be responsible for compliance with the terms of this Grant Contract by any sub-grant recipient, including but not limited to, a political subdivision, public agency, or qualified non-profit organization to which funds or obligations are transferred, delegated or assigned pursuant to this Grant Contract. Delegation by the Grant Recipient to a sub-grant recipient of any duty or obligation hereunder does not relieve the Grant Recipient of any duty or obligation created hereunder. Failure by such sub-grant recipient to comply with the terms of this Grant Contract shall be deemed failure by the Grant Recipient to comply with the terms of this Grant Contract. Any such delegation of duties or obligations shall be in writing, signed by the Grant Recipient and sub-grant recipient, and shall contain an affirmative covenant by the sub-grant recipient that it shall abide by the rules set forth in Title 09, Subchapter 03M of the North Carolina Administrative Code.
5. Independent Status of the Parties. The Parties are independent entities and neither this Grant Contract nor any provision of it or any of the Grant Documents shall be deemed to create a partnership or joint venture between the Parties. Further, neither the Grant Contract nor any of the Grant Documents shall in any way be interpreted or construed as making the Grant Recipient, its agents or employees, agents or representatives of the Fund. The Grant Recipient is and shall be an independent contractor in the performance of this Contract and as such shall be wholly responsible for the work to be performed and for the supervision of its employees. In no event shall the Fund be liable for debts or claims accruing or arising against the Grant Recipient. The Grant Recipient represents that it has, or shall secure at its own expense, all personnel required in the performance of this Contract. Such employees shall not be employees of, nor have any individual contractual relationship with, the Fund.
6. Indemnity. The Grant Recipient agrees, to the fullest extent permitted by law, to release, defend, protect, indemnify and hold harmless the State, the Fund, its Trustees, employees and agents against claims, losses, liabilities, damages, and costs, including reasonable attorney fees, which result from or arise out of: (a) damages or injuries to persons or property caused by the

negligent acts or omissions of Grant Recipient, its employees, or agents in use or management of the Project; or (b) use or presence of any hazardous substance, waste or other regulated material in, under or on a property(ies) of the Project Site. The obligations under this paragraph are independent of all other rights or obligations set forth herein. This indemnity shall survive the disbursement of the Grant funds, as well as any termination of this Grant Contract.

7. No Discrimination. The Grant Recipient shall assure that no person will be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity covered by this Grant Contract solely on the grounds of race, color, age, religion, sex or national origin.

8. Binding Effect, Contract Assignable. The terms hereof shall be binding upon and inure to the benefit of the successors, assigns, and personal representatives of the parties hereto; provided, however, that the Grant Recipient may not assign this Grant Contract or any of its rights, interests, duties or obligations hereunder or any Grant proceeds or other moneys to be advanced hereunder in whole or in part without the prior written consent of the Fund, which may be withheld for any reason and that any such assignment (whether voluntary or by operation of law) without said consent shall be void.

9. Governing Law, Construction and Jurisdiction. This Grant Contract and the other Grant documents and all matters relating thereto shall be governed by and construed and interpreted in accordance with the laws of the State of North Carolina, notwithstanding the principles of conflicts of law. The headings and section numbers contained herein are for reference purposes only. The terms of this Grant Contract shall be construed according to their plain meaning, and not strictly construed for or against either party hereto. The Grant Recipient hereby submits to the jurisdiction of the state and Federal courts located in North Carolina and agree that the Fund may, at its option, enforce its rights under the Grant Documents in such courts. The parties hereto intend this document to be an instrument executed under seal. The Fund and any party that is an individual, partnership or limited liability company hereby adopts the word "SEAL" following his/her signature and the name of the Fund or partnership or limited liability company as his/her/its legal seal.

10. Savings Clause. Invalidation of any one or more of the provisions of this Grant Contract, or portion thereof, shall in no way affect any of the other provisions hereof and portions thereof which shall remain in full force and effect.

11. Additional Remedies. Except as otherwise specifically set forth herein, the rights and remedies provided hereunder shall be in addition to, and not in lieu of, all other rights and remedies available in connection with this Grant Contract.

12. Survival. Where any representations, warranties, covenants, indemnities or other provisions contained in this Grant Contract by its context or otherwise, evidences the intent of the parties that such provisions should survive the termination of this Grant Contract or any Closing, the provisions shall survive any termination or Closing. Without limiting the generality of the foregoing, the parties specifically acknowledge and agree that the provisions of Exhibit H, Exhibit I, and the conditions shown on Exhibit A shall survive any termination of this Grant Contract as well as any Closing.

13. Incorporation of Exhibits. All exhibits attached to this Contract are fully incorporated as if set forth herein.

14. Entire Agreement. This Grant Contract constitutes the entire agreement between the parties hereto with respect to the subject matter hereof. All recitals, exhibits, schedules and other attachments hereto are incorporated herein by reference.

15. Headings. The headings of the various sections of this Grant Contract have been inserted for convenience only and shall not modify, define, limit or expand the express provisions of this Grant Contract.

16. Time of the Essence. Time is of the essence in the performance of this Grant Contract.

EXHIBIT I

CONSERVATION EASEMENTS

1. As used in this exhibit, "Conservation Easement" refers to the more general term "Conservation Agreement" as defined in NCGS Chapter 121, Article 4.
2. Conservation Easements obtained and recorded in connection with this Project shall be patterned after the Fund's template Deed of Conservation Easement for Restoration Purposes ("Restoration Easement").
3. Conservation Easements obtained and recorded in connection with this Project shall be held by a party satisfactory to the Fund.
4. Before disbursement of any construction funds under this Grant Contract, the Fund must review and approve the Conservation Easements, and said Conservation Easements must be recorded in the official land records of the appropriate county.
5. The acquisition of the Conservation Easements may herein also be referred to as the "Closing."
6. "Donated Conservation Easements" are Conservation Easements for which neither the Fund nor the Grant Recipient has expended or will expend any funds to obtain property interest.
7. Conservation easements for stream restoration riparian buffers may not be purchased using Grant funds. Conservation easements for stream restoration riparian buffers must be donated easements, be purchased with matching funds, and/or be purchased with funds not included in the project budget in Exhibit B.
8. The following requirements apply to all Conservation Easements obtained and recorded in connection with this Project:
 - (a) Conservation Easements shall have good and marketable title.
 - (b) The terms of Conservation Easements shall provide a third party right of enforcement to the State of North Carolina, such that in the event the easement holder satisfactory to the Fund fails to enforce any of the terms of Conservation Easements, the State shall have the independent right to enforce the terms of Conservation Easements through any and all authorities available under state law;
 - (c) Donated Conservation Easements shall be conveyed as an absolute gift to the easement holder satisfactory to the Fund subject to an executory interest in the State such that in the event that the easement holder satisfactory to the Fund attempts to terminate, transfer or otherwise divest itself of any rights, title or interests in a Conservation Easement without the prior written consent of the State, then all rights, title or interest in the Conservation Easement shall automatically vest in the State;
 - (d) Conservation Easements shall provide that, in the event the easement holder satisfactory to the Fund transfers or assigns the Conservation Easement to a third party, the organization receiving the interest will be a qualified organization as that term is defined in

Section 170(h)(3) of the Internal Revenue Code, which is organized or operated primarily for one of the conservation purposes specified in Section 170 (h)(4)(A) of the Internal Revenue Code, and that the transferee or assignee will further covenant and agree that the terms of the transfer or assignment will require it to continue to carry out in perpetuity the conservation purposes that the contribution was originally intended to advance. Specifically, Conservation Easements shall provide that, in the event the easement holder satisfactory to the Fund transfers the Conservation Easement, the easement holder satisfactory to the Fund shall covenant and agree to continue to monitor and observe the Conservation Easement in perpetuity with the State for such purposes as are described in the Conservation Easement and this Grant Contract and to report to the State and the Fund any observed violations thereof. The easement holder satisfactory to the Fund may be released from the obligation to monitor the Conservation Easement only with prior written approval of the State and the Fund; and

- (e) Any specific terms and conditions set forth on Exhibit A.

**STATE OF NORTH CAROLINA
CLEAN WATER MANAGEMENT TRUST FUND
GRANT CONTRACT
(RESTORATION OF DEGRADED LANDS)**

CWMTF PROJECT NUMBER: 2012-441

GRANTOR: North Carolina Clean Water Management Trust Fund ("Fund" or "CWMTF"), an independent agency of the State of North Carolina ("State") acting through its Board of Trustees solely in its official capacity pursuant to Article 18, Chapter 113A, of the North Carolina General Statutes ("NCGS")

CONTRACT ADMINISTRATOR: Kevin Boyer
Clean Water Management Trust Fund
1651 Mail Service Center
Raleigh, NC 27699-1651
phone: (919)707-9129
email: kevin.boyer@ncdenr.gov

GRANT RECIPIENT: Resource Institute, Inc., a North Carolina Non-Profit Corporation ("Grant Recipient")

CONTRACT ADMINISTRATOR: Debbie Dodson
Resource Institute, Inc.
2724 Henning Drive
Winston-Salem, NC 27106
phone: (336)750-0522
email: DDodson@pilotviewrwd.org

FEDERAL I.D. NUMBER: 56-2251040

DUNS NUMBER: 799190033

FISCAL YEAR END DATE: December 31

GRANT AWARD DATE: October 15, 2012 (the "Award Date")

CONTRACT EFFECTIVE DATE: 20 February 2013 (the "Effective Date")

CONSTRUCTION CONTRACT DATE: October 15, 2013

CONTRACT EXPIRATION DATE: July 31, 2015 (the "Expiration Date")

REIMBURSEMENT DATE: August 14, 2015

GRANT AMOUNT: up to \$400,000 (the "Grant")



THIS GRANT CONTRACT (the "Grant Contract") is made and entered into, as of the Effective Date by and between the Fund and the Grant Recipient, both sometimes hereinafter referred to individually as a "Party" or collectively as the "Parties".

WITNESSETH:

WHEREAS, the Fund is authorized by NCGS Chapter 113A, Article 18 to, among other actions and activities, restore previously degraded lands to reestablish their ability to protect water quality and acquire conservation easements or other interests in real property for protecting and conserving surface waters and drinking water supplies.

WHEREAS, the Grant Recipient is a qualified applicant as that term is defined in NCGS Chapter 113A, Article 254(a).

WHEREAS, the Grant Recipient submitted to the Fund an application requesting financial assistance to engage in a project for restoring degraded lands in order to protect the quality of surface waters.

WHEREAS, at its meeting on the Award Date, the Fund's Board of Trustees approved a project based on the Grant Recipient's application, and the Fund is willing to provide financial assistance (the "Grant") to the Grant Recipient pursuant to the terms and conditions set forth in this Grant Contract.

WHEREAS, the Grant Recipient agrees to conduct the project approved by the Fund's Board of Trustees for the purposes and according to the scope of work, conditions, and schedule in Exhibit A (the "Project") and pursuant to the project budget in Exhibit B of this Grant Contract.

WHEREAS, the Parties desire to enter into this Grant Contract and intend to be bound by its terms.

NOW, THEREFORE, for and in consideration of the Grant, the mutual promises each to the other made, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties mutually agree as follows:

1. **Grant Documents.** The documents described below are hereinafter collectively referred to as the "Grant Documents." In the case of conflict between any of these documents, each shall have priority over all others in the order listed below. Upon execution and delivery of this Grant Contract, it and the other Grant Documents and items required hereunder will constitute a valid and binding agreement between the Parties, enforceable in accordance with the terms thereof. The Grant Contract constitutes the entire agreement between the Parties, superseding all prior oral and written statements or agreements. Only changes deemed non-material in type at the discretion of the Fund's Executive Director may be made to the Grant Contract without the consent of the Fund's Board of Trustees.

2. The Grant Documents consist of:
 - a. Cover page
 - b. Grant Contract
 - c. Exhibit A – Project Description, Water Quality Benefits, Scope of Work, Special Contract Conditions, and Schedule
 - d. Exhibit B – Project Budget
 - e. Exhibit C – CWMTF Pre-Disbursement Checklist
 - f. Exhibit C.1 – Statement of No Overdue Tax Debts
 - g. Exhibit C.2 – Assurances for Non-Federally Funded Contracts
 - h. Exhibit D – CWMTF Progress Report Form and CWMTF Grant Contract Final Report Form
 - i. Exhibit E – CWMTF Invoice Form
 - j. Exhibit F – Uniform Administration of State Grants
 - k. Exhibit G – Additional Definitions
 - l. Exhibit H – General Terms and Conditions
 - m. Exhibit I – Conservation Easements

Upon execution and delivery of the Grant Contract, and once the Department of Environment and Natural Resources has notified the Fund that funds for the Grant have been encumbered, and the Grant Recipient has received its counterpart original of the Grant Contract, fully executed and with all dates inserted where indicated on the cover sheet of the Grant Contract, then the Grant Contract will constitute a valid and binding agreement between the Parties, enforceable with the terms thereof.

3. **Purpose.** The purpose of the Grant is for restoring degraded lands in order to protect the quality of surface waters, more particularly described on Exhibit A (the “Project”). The Grant may be for Project design, permitting, construction, construction observation, construction contingency, and/or the Grant Recipient’s administrative costs. Grant funds may not be used for the purchase of improvements or debris on any property, or for the removal of improvements or debris on any property, or for any other purpose not set forth herein. Further, Grant funds may not be used for any eminent domain litigation or any action or expenditure related to eminent domain, unless approved by the Fund’s Board of Trustees in writing prior to the action. The Board of Trustees shall review requests to use Grant funds for eminent domain action on a case-by-case basis. The Grant Recipient shall provide such requests in writing.

4. **Fund’s Duties.** Subject to the appropriation, allocation, and availability to CWMTF of funds for the Project, CWMTF hereby agrees to pay the Grant funds to the Grant Recipient in accordance with the payment procedures set forth herein.

5. **Grant Recipient’s Duties.** The Grant Recipient shall carry out the Project pursuant to the terms of this Contract.

6. **Contract Period.** The Fund’s commitment to disburse Grant funds under this Grant Contract shall cease on the Reimbursement Date. It is the responsibility of the Grant Recipient to ensure that the Project is completed by the Expiration Date and that all costs to be reimbursed have been submitted to the Fund by the Reimbursement Date. After the Expiration Date, any Grant monies remaining under this Grant contract no longer will be available to the Grant

7. Permanent Protections on Properties of the Project Site.

a. Projects for Which Property Protections are Required. Real property on which CWMTF funds are to be used for construction must be protected permanently by legal instruments conforming to NCGS Chapter 121, Article 4, and NCGS Chapter 113A, Article 18. The Grant Recipient shall so restrict, or cause to be restricted, uses of and activities on such real property by way of one or more permanent conservation agreements or by other instruments of property interest approved in writing by the Fund. Such instruments of property interest must encumber real property essential to the Project, including necessary easements and rights of way. Real property essential to the Project, including necessary easements and rights of way, hereinafter is collectively referred to as the "Project Site," being the properties given in Schedule of Property Interest to be Acquired in Exhibit A.

b. Requirements for Instruments of Property Interest. Property interests acquired for the Project shall provide or conform to the following:

(i) Property interests shall assure undisturbed use and possession of the properties of the Project Site for the purpose of construction and operation of the Project and include other such restrictions as the Fund deems necessary and satisfactory, in its sole discretion.

(ii) Property interests shall be permanent.

(iii) Property interests shall be approved as to form and content by the Fund in writing.

c. Requirements for Holding of Property Interest. Property interests acquired for the Project shall be held by a party satisfactory to the Fund, such party being identified as holder (as defined in NCGS Chapter 121, Article 4) in Exhibit A. If a holder of property interests acquired for this Project is not named in Exhibit A, or if the party named as holder in Exhibit A does not accept the role and responsibility of holder, the Grant Recipient shall name a party to serve as holder, subject to approval in writing by the Fund.

d. Recordation of Instruments of Property Interest. The Grant Recipient shall provide to the Fund a copy of instruments creating property interest obtained and recorded in connection with the Project Site. (The Fund will disburse construction funds only after having received from the Grant Recipient a copy of each recorded instrument and associated documents set forth in Exhibit I.)

8. Pre-Disbursement Requirements. Prior to the disbursement of Grant funds under this Grant Contract, the Grant Recipient shall deliver to the Fund all documentation described on Exhibits C, C.1, and C.2.

9. **Disbursement of Grant Funds.**

a. Proportionate Spending of Matching Funds. Grant monies are awarded based on a commitment of matching funds to the project. The Fund's final, cumulative portion of the total project cost will be no more than the percentage of funds originally committed to in the Grant Contract as given in Exhibit B. The Grant Recipient must demonstrate expenditure of matching funds as payments by the Fund are requested.

b. Requests for Payment. The Fund will disburse Grant funds following receipt by the Fund's Contract Administrator of the Grant Recipient's requests for payment. Each request for payment shall include a progress report, using the Progress Report form in Exhibit D, describing work accomplished on the Project and progress toward completing the Project Scope of Work, and a completed and signed Payment Request form, using the template Payment Request form in Exhibit E. Payment requests shall conform to the following:

(i) Exclusion of sales tax. Payment requests shall identify all amounts of sales tax for which the Grant Recipient and/or its vendors have or will obtain payment from the State Department of Revenue. The Fund will not reimburse the Grant Recipient for such amounts.

(ii) Supporting documentation. Payment requests shall be accompanied by appropriate itemized documentation supporting all expenses claimed and clearly identifying each expenditure for which payment is requested. Supporting documentation must be organized in a manner that clearly relates expenditures in the supporting documentation to the line items on the Payment Request form. Any request for payment that does not clearly identify each expenditure or does not relate each expenditure to the line items on the payment request form will not be processed and will be returned to the Grant Recipient for correction and resubmittal.

c. Alternate Disbursement of Grant Funds. The Fund may, upon request by the Grant Recipient, disburse Grant funds prior to the Grant Recipient's actual payment to its vendors if such expenditures are documented by vendors' third-party invoices. In order for the Fund to disburse Grant funds to the Grant Recipient based on unpaid third-party invoices, the Grant Recipient must: (a) indicate to the Fund in writing that it has reviewed and approved such unpaid invoices, (b) certify to the Fund in writing that it will make payment on all such unpaid invoices within three banking days of receipt of funds corresponding to the unpaid invoices, and (c) confirm in writing to the Fund that it has made such payments within three banking days of receipt of funds corresponding to the unpaid invoices.

d. Limited Grant Funds Disbursement in January, June, July, and December. Funds will not be disbursed during the first week of January, the last three weeks of June, the first week of July, and the last two weeks of December.

e. Certification by Licensed Professional. At the option of the Fund, payments may be made only on the certificate and seal of an appropriately qualified licensed professional (e.g., licensed Professional Engineer) that the work for which the payment is requested has been completed in accordance with approved plans and specifications, to which certificate shall be attached an estimate by the construction contractor setting forth items to be paid out of the proceeds of each such payment. The Fund, at its option, may further require a certificate from such appropriately qualified licensed professional that the portion of the Project completed as of the date of the request for payment has been completed according to schedule and otherwise as

approved by the Fund and according to applicable standards and requirements. However, the Fund may, at its discretion, make payments without requiring such certificates or construction contractor's estimate, in which event the Grant Recipient shall furnish the Fund a list of and the amounts of items to be paid out of the payment, or such other evidence as the Fund may require.

f. Payment Based on Progress. The Grant Recipient agrees to proceed with diligence to complete the Project according to the schedule set out in Exhibit A and shall show appropriate progress prior to each payment. Payment may be withheld or delayed if Grant Recipient fails to make progress on the Project satisfactory to the Fund. Amounts withheld shall be reimbursed with subsequent payments in the event that Grant Recipient is able to demonstrate an ability to resume satisfactory progress toward completion of the Project.

g. Proof of Payment. The Grant Recipient agrees to pay, as the work progresses, all bills for expenses incurred on the Project and agrees to submit to the Fund all such receipts, affidavits, canceled checks, or other evidences of payment as may be requested from time to time and, when and if requested by the Fund, to furnish adequate proof of payment of all indebtedness incurred on the Project.

h. The Fund Retaining Portion of Funds until Project Completion. The Fund will withhold payment from the Grant Recipient in the amount of \$25,000 of the Grant until the Grant Recipient has satisfactorily submitted its grant contract final report.

i. No Excess Costs. The Fund agrees to pay or reimburse the Grant Recipient only for costs actually incurred by the Grant Recipient that do not exceed the funds budgeted for the Project on Exhibit B.

j. Period for Incurring Expenditures. The Fund will reimburse the Grant Recipient for allowable Project expenditures that are incurred by the Grant Recipient or its vendors only during the period between the Award Date and the Expiration Date of the Grant Contract. The Fund will not reimburse the Grant Recipient for Project expenditures that are not incurred during this period.

k. Costs of Project Administration. The Fund agrees to reimburse the Grant Recipient for administrative costs consisting only of costs of labor for administrative work conducted exclusively on this Project. The Grant Recipient's requests for such payment shall be made under the Project Administration line item of Exhibit B and shall conform to the following:

(i) Costs allowable under the Project Administration line item shall be only costs of labor needed to comply with the general conditions of the Grant Contract (e.g., progress reports, payment requests, preparing the grant contract final report, revisions to the Grant Contract). Allowable Project Administration labor costs may include any of the following: (a) pay to the Grant Recipient's payroll employees, plus the Grant Recipient's cost of paying benefits on such pay (usually employees' pay times an audited or auditable benefits multiplier); (b) pay to contract employees of the Grant Recipient (e.g., temporary office support), payable at the Grant Recipient's actual cost, without application of a benefits multiplier; and/or (c) cost of professional services labor contracted by the Grant Recipient (e.g., engineering firm or consultant), payable at the Grant Recipient's actual cost for that labor.

(ii) Costs of any other work described in the Project Scope of Work in Exhibit A are not allowable under the Project Administration line item.

(iii) Costs allowable under the Project Administration line item shall be only costs of labor needed to comply with the general conditions of the Grant Contract (e.g., progress reports, payment requests, preparing the grant contract final report, revisions to the Grant Contract). Allowable Project Administration labor costs may include any of the following: (a) pay to the Grant Recipient's payroll employees, plus the Grant Recipient's cost of paying benefits on such pay (usually employees' pay times an audited or auditable benefits multiplier); (b) pay to contract employees of the Grant Recipient (e.g., temporary office support), payable at the Grant Recipient's actual cost, without application of a benefits multiplier; and/or (c) cost of professional services labor contracted by the Grant Recipient (e.g., engineering firm or consultant), payable at the Grant Recipient's actual cost for that labor.

(iv) Costs of any other work described in the Project Scope of Work in Exhibit A are not allowable under the Project Administration line item.

10. Grant Withdrawal for Failure to Enter into a Construction Contract. Pursuant to NCGS §113A-254(f), if the Project includes construction, this Grant award shall be withdrawn if the Grant Recipient fails to enter into a construction contract for the Project within one year after the Award Date, unless the Fund's Board of Trustees finds that Grant Recipient has good cause for the failure. If the Trustees find good cause for Grant Recipient's failure, the Trustees must set a date by which Grant Recipient must take action or forfeit the Grant.

11. Refunds, Reversion of Unexpended Funds, and Reduction of the Grant based on Construction Cost less than Budgeted Construction Cost.

a. Refunds. The Grant Recipient shall repay to the Fund any compensation it has received that exceeds the payment to which it is entitled herein, including any interest earned on funds reimbursed pursuant to the Grant Contract.

b. Reversion of Unexpended Funds. Any unexpended Grant monies shall revert to the Fund upon termination of the Grant Contract.

c. Reduction of the Grant based on Construction Cost less than Budgeted Construction Cost. The Fund may reduce the Grant amount if the Grant Recipient expects actual construction costs to be less than budgeted construction costs, as follows:

(i) The Grant Recipient shall provide to the Fund construction contract pricing information consisting minimally of a statement of the scope of the construction work, agreed-upon constructor or vendor pricing for the construction work, and a total anticipated construction cost based on the pricing.

(ii) The Grant Recipient shall deliver the construction contract pricing information to the Fund's Contract Administrator within 30 days of executing a construction contract for the Project.

(iii) The Fund may, at its discretion after comparing the total anticipated construction cost with the Grant Contract project budget, choose to reduce the Grant. If the Fund chooses to reduce the Grant, the Fund's Contract Administrator will prepare an amendment to the Grant Contract for this purpose, and the Fund will approve requests for reimbursement of the Grant Recipient's construction costs only after the amendment has been signed by both the Grant Recipient and the Fund.

12. Reporting Requirements.

a. Project Progress Reports. The Grant Recipient shall submit a written detailed narrative progress report describing the work accomplished on the Project and progress toward meeting the Project objectives to the Fund's Contract Administrator of the Fund, every three months beginning three months from the Effective Date in the format set forth on Exhibit D. Progress reports shall be made on the form set forth on Exhibit D.

b. Grant Contract Final Report. The Grant Recipient shall submit to the Fund's Contract Administrator a grant contract final report providing the information items listed on the contract final report form given in Exhibit D and according to the schedule given in Exhibit A. If the grant contract final report is not acceptable to the fund, the Fund shall return it to the Grant Recipient for revision. Final payment will not be made until the grant contract final report is acceptable to the Fund.

c. State-mandated Reporting Requirements for Nonprofit Corporations. State-mandated reporting requirements for nonprofit corporations are set forth on Exhibit F.

13. Notice; Contract Administrators. All notices, requests or other communications permitted or required to be made under this Grant Contract or the other Grant Documents shall be given to the respective Contract Administrator. Notice shall be in writing, signed by the party giving such notice. Notice shall be deemed given three business days next following the date when deposited in the mail.

14. Signature Warranty. Each individual signing below warrants that he or she is duly authorized to sign this Contract for the respective party, and to bind said party to the terms and conditions of this Grant Contract.

(The remainder of this page is intentionally left blank)

IN WITNESS WHEREOF, the Grant Recipient and the Fund have executed this Grant Contract in two originals as of the Effective Date. One original shall be retained by each Party. If there is any controversy among the documents, the document on file in the Fund's office shall control.

GRANT RECIPIENT:

By: 
Name: Michael "Squawk" Smith
Title: Chairman

ATTEST:

By: 
Name: Jimmy Winfrey
Title: Admin. Assistant

FUND:

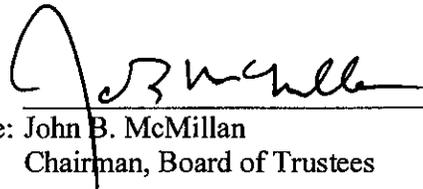
By:  (SEAL)
Name: John B. McMillan
Title: Chairman, Board of Trustees

EXHIBIT A
CWMTF Project No. 2012-441

Stream of the Project Site: Lovills Creek, Ararat River
Water bodies downstream: Yadkin River
River basin: Yadkin
County: Surry
Amount requested from CWMTF: originally \$1,857,200, revised to \$400,000
CWMTF approved grant amount: up to \$400,000
Total matching contributions: \$225,000
Total project budget: \$625,000
% match (total matching contributions/total project budget): 36%
Grant award date: October 15, 2012
Related CWMTF-funded projects: For 8,500 linear feet of streams that include the 1,800 linear feet reach of this project (CWMTF 2012-441), CWMTF 2011-416 is contributing up to \$130,000 for preliminary stream enhancement design (30% design) and easement preparation and recordation. CWMTF 2011-416 also is contributing up to \$270,000 for design, permits, easement preparation/recordation, and construction of three stormwater BMPs near this stream reach.

Project Sites:

The Project Sites are in Mount Airy:

Stream restoration: Approximately 1,800 linear feet of the Ararat River, from US Highway 52 bridge: approximately 1,100 linear feet upstream, and approximately 700 linear ft downstream.

Greenway trail: Approximately 2 miles of greenway trail, from the confluence of the Ararat River and Lovill's Creek: along the west side of the Ararat River to approximately 1 mile northward (upstream), and along the east side of Lovill's Creek to approximately 1 mile northward (upstream).

Project Summary:

Stream restoration: For the stream restoration portion of the Project Site, complete the design (preliminary/30% design begun under CWMTF 2011-416), obtain applicable Federal and State permits, and construct the stream enhancement.

Greenway trail: For the greenway trail portion of the Project Site, prepare plans and specifications suitable for bidding and construction of the greenway trail.

Site Conditions and Water Quality Objectives:

The Grant Recipient has developed information indicating that the streams at the Project Site have heavily eroding banks, high bank heights, overly wide channels, in-stream debris, and partial lack of riparian buffer. Successful implementation of this project will improve aquatic and riparian terrestrial habitat, improve floodplain connection, and provide access for recreation and education.

Scope of Work:

The Grant Recipient shall conduct and complete the activities given below.

No.	Activity	Funding Source	
		CWMTF Funds	Matching Funds
1	Complete the engineering design for enhancing the streams of the Project Site	X	
2	Prepare permit application documents and obtain applicable Federal and State permits for the construction of the engineering design	X	
3	Construct the stream restoration per the engineering design, including entering into a construction contract, accomplishing the construction, administering the construction contract, and observing and documenting conformance of the construction to the construction contract documents and approved changes	X	
4	Prepare plans and specifications suitable for bidding and constructing the greenway trail of the Project Sites.		X
5	Administer the project	X	

Special Contract Conditions:

1. The Grant Recipient shall provide or otherwise ensure that the matching funds identified in Exhibit B are provided to the project.
2. Stream restoration, enhancement, and stabilization designs and their implementation must provide for permanently vegetated riparian buffers and permanent legal protection of the riparian buffers in accordance with the following:
 - a. Riparian buffer widths, areas, and vegetation: Except as otherwise provided in these Special Contract Conditions, riparian buffers must be vegetated with protected existing vegetation and/or new planted vegetation established to become permanent over the entire buffer area in accordance with the following:
 - i. Widths and areas of riparian buffers: vegetated riparian buffers must be at least 50 feet wide on each side of the stream, as measured from the top of the streambank, unless otherwise specified in these Special Contract Conditions.
 - ii. Woody vegetation along stream banks: Along restored streambanks and protected existing streambanks, native woody vegetation must be protected or established at a density such that vegetation will reach a survival rate of at least 320 trees per acre. Native woody vegetation must be protected or established from the top of each protected or restored streambank outward to widths of at least 20 feet perpendicular to the streambank.
 - b. Permanent legal protection of riparian buffers: Real properties on which vegetated riparian buffers are to be provided must be protected permanently by legal instruments conforming to NCGS Chapter 121, Article 4, and NCGS Chapter 113A, Article 18 (see Exhibit I and paragraph 7 of this Grant Contract). Real properties of the Project Site and corresponding approximate land areas to be protected, which are given in CWMTF grant contract 2011-416, must encompass the vegetated riparian buffer and may include the stream channel between the stream banks.

3. The Grant Recipient shall secure applicable Federal and State permits before the start of construction and submit copies of the permits to the Fund. The Fund shall approve requests for payment of the Grant Recipient's construction costs only after receiving copies of applicable Federal and State permits.
4. In accordance with Water Quality Certification No. 3495, before construction begins, the Grant Recipient shall submit a Pre-Construction Notification (PCN) form and three (3) copies of the Project plans and specifications to the North Carolina Division of Water Quality (DWQ) 401 Certification Program for review. The Grant Recipient shall follow the latest guidelines on DWQ's website (<http://h2o.enr.state.nc.us/nwetlands/index.html>) and contained in the Internal Technical Guide for Stream Work in North Carolina (DWQ and DLR, April 2001 or latest version (<http://h2o.enr.state.nc.us/nwetlands/strmgide.html>)) for the types of information to submit to DWQ for review. The Grant Recipient shall name the Fund as the "agent" on the PCN form and shall send a copy of the PCN form to the Fund at the same time the form is sent to DWQ.
5. In conducting this Project, the Grant Recipient shall employ principles for restoring streams established by the DWQ 401 Certification Program. The Grant Recipient shall work with staff of the DWQ 401 Certification Program to provide a Project design that, to the extent practicable, re-establishes the structure, function, and self-sustaining behavior of the Project reach of stream to those that existed before the stream reach was disturbed. The Fund will release funds for reimbursing the Grant Recipient for construction only after receiving a letter from the DWQ 401 Certification Program stating that either: (a) the Project design is capable of restoring the stream reach, or (b) if, in the opinion of the DWQ 401 Certification Program restoration of the full stream reach is not practicable, the Project design is capable of enhancing portions of the reach that cannot be restored. If DWQ does not provide such a letter within 30 days from receiving the PCN and Project design (plans and specifications) from the Grant Recipient, then the Fund will deem the design to meet the requirements of the DWQ 401 Water Quality Certification Program. Definitions used by the DWQ 401 Certification Program are given in Exhibit G.

Project Schedule:

1. **Construction Contract Date: October 15, 2013 (one year after the Contract Award Date).** Enter into a construction contract by this date for the work identified as construction in Exhibit A. Failure to enter into a construction contract by this date will result in withdrawal of the Grant, unless the Fund's Board of Trustees has found the Grant Recipient had good cause for such failure and the Board of Trustees has set a date by which the Grant Recipient must take action.
2. **Contract Expiration Date: July 31, 2015.** Complete the Project Scope of Work and submit the Grant Contract Final Report (Grant Contract paragraph 12b and as otherwise specified in Exhibit A) by this date. The Fund will not reimburse the Grant Recipient for Project costs incurred after this date.
3. **Reimbursement Date: August 14, 2015.** The Fund must receive the Final Request for Payment for the Project by this date. The Fund will not accept or process for payment any request for payment received after this date. The Fund will not reimburse the Grant Recipient for costs incurred after the Contract Expiration Date.

EXHIBIT B
CWMTF Project No. 2012-441
Project Budget

Item	CWMTF Grant Funds⁽¹⁾	Matching Funds⁽²⁾	Total Item Budget
1. Stream design and permitting	\$48,000	\$0	\$48,000
2. Stream construction administration/observation	\$15,000	\$0	\$15,000
3. Stream construction	\$313,200	\$0	\$313,200
4. Greenway trail design	\$0	\$225,000	\$225,000
5. Project administration	\$23,800	\$0	\$23,800
Total Project Budget	\$400,000	\$225,000	\$625,000
% of Total Project Budget	64%	36%	100%

Notes:

(1) To obtain payment, the Grant Recipient must submit itemized documentation substantiating direct costs incurred in the implementing the project.

(2) Matching funds are: \$225,000 grant from NCDOT for greenway design.

EXHIBIT C
CWMTF Project No. 2012-441
CWMTF Pre-Disbursement Checklist
Documents to be Submitted Before CWMTF Will Disburse Funds

REQUIREMENT		DESCRIPTION/WHAT TO SUBMIT
Submit before first request for payment		
1	Authorization to Obligate	Written authorization from the governing board or other appropriate authority stating that it agrees to the obligations of Grant Recipient set out in this Grant Contract. (*See note below.)
1a	Articles of Incorporation and Bylaws	Copy of Articles of Incorporation and Bylaws with amendments (to verify that the Grant Recipient is a non-profit corporation whose primary purpose is the conservation, preservation, and restoration of North Carolina's environmental and natural resources).
1b	Conflict of Interest Policy	Notarized copy of conflict of interest policy.
1c	Tax-exempt Status	Copy of IRS letter confirming tax-exempt status.
1d	No Overdue Tax Debts	Signed form: State Grant Certification — Sworn Statement of No Overdue Tax Debts (Exhibit C.1).
1e	Assurances for Non-Federally Funded Contracts	Signed form: Assurances for Non-Federally Funded Contracts (Exhibit C.2).
1f	Incumbency Certificate	Certificate in the form of or similar to http://www.cwmtf.net/sampleincumbency.doc .
1g	Certificate of Existence	Copy of a recent Certificate of Existence issued by the Office of the North Carolina Secretary of State.
2	Matching Funds	Proof of availability of matching funds included in the project budget. (**See note below.)
3	Documents in Exhibit A	Documents as identified in Exhibit A "Special Contract Conditions" (if any) as required prior to the release of CWMTF funds.
Submit before first request for construction payment		
4	Conservation Agreements	Copy of the recorded instrument (typically a conservation agreement) that creates the property interest. The Fund must approve the recorded instrument.
5	Construction Permits	Provide a copy of each applicable Federal or State permit issued for construction, or written documentation from the appropriate State agency that construction of the Project does not require a Federal or State permit.
6	Construction Contract Pricing Information	Within 30 days of executing a construction contract for the Project, submit construction contract pricing information consisting minimally of a statement of the scope of the construction work, agreed-upon constructor or vendor pricing for the construction work, and a total anticipated construction cost based on the pricing. (Refer to paragraph 11 of the Grant Contract.)
7	Documents in Exhibit A	Documents as identified in Exhibit A "Special Contract Conditions" (if any) as required prior to the release of CWMTF funds.
Submit before or accompanying request for final payment		
8	Grant Contract Final Report	Report per Grant Contract paragraph 12b.
9	Documents in Exhibit A	Documents as identified in Exhibit A "Special Contract Conditions" (if any) as required prior to the release of CWMTF funds.

* Examples of proof of authorization to obligate include:

- Resolution of the governing board to obligate.
 - Certified copy of board meeting minutes documenting giving of authority to obligate.
- **Examples of proof of availability of matching funds include:
- Grants from other sources:
 - Copy of grant agreement.
 - Copy of grant award letter.
 - Local agency matching funds:
 - Resolution of the governing board.
 - Budget showing allocation of matching funds to the Project, accompanied by a certified copy of board meeting minutes approving the budget or by a certified copy of board meeting minutes authorizing use of local matching funds for the Project.
 - Certified copy of board meeting minutes attesting to the use and amount of local funds for match.
 - Letters from other sources of matching funds attesting to contribution of the funds.
 - Value of conservation easements to be donated:
 - Current properties' fair market tax valuations assessed by the county tax assessor's office, prorated to apply only to the areas of the permanent conservation easements to be recorded for this project, or
 - Appraisals, prepared and signed by a North Carolina-licensed appraiser, of the diminution of properties' fair market values as a result of being encumbered by permanent conservation easements required for this project.

EXHIBIT C.1
STATE GRANT CERTIFICATION – NO OVERDUE TAX DEBTS

Instructions: Grant Recipient must complete this certification for all State funds received. Grant Recipient must enter appropriate information in the *[italicized areas]* below. This completed form will be kept on file by CWMTF and be available for review by the North Carolina Office of the State Auditor.

[Date of Certification]

Address to: CWMTF Executive Director and DENR Controller

Certification:

We certify that the *[Name of Grant Recipient]* does not have any overdue tax debts, as defined by N.C.G.S. 105-243.1, at the federal, State, or local level. We further understand that any person who makes a false statement in violation of N.C.G.S. 143-6.2(b2) is guilty of a criminal offense punishable as provided by N.C.G.S. 143-34(b).

Sworn Statement:

[Name of Board Chair] and *[Name of Second Authorizing Official]* being duly sworn, say that we are the Board Chair and *[Title of the Second Authorizing Official]*, respectively, of *[Name of Grant Recipient]* of *[City]* in the State of *[Name of State]*; and that the foregoing certification is true, accurate and complete to the best of our knowledge and was made and subscribed by us. We also acknowledge and understand that any misuse of State funds will be reported to the appropriate authorities for further action.

Board Chair

Second Authorizing Official

Sworn to and subscribed before me this day by _____. I have personal knowledge of _____'s identity/I have seen satisfactory evidence of _____'s identity by a current state or federal identification with _____ photograph, in the form of a NC driver's license (or other). Witness my hand and official stamp or seal this _____ day of _____, 200_.

_____, Notary Public

My Commission Expires: _____

Print Name: _____

Stamp/Seal

(If Grant Recipient has questions about this form, please contact the North Carolina Office of the State Auditor: Angela Gunn at (919) 807-7556 or Harriet Abraham at (919) 807-7673.)

EXHIBIT C.2
ASSURANCES FOR NON-FEDERALLY FUNDED CONTRACTS

The Grant Recipient certifies that with regard to:

1. **DEBARMENT AND SUSPENSION** - To the best of its knowledge and belief that it and its principals:
 - (a) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State, or local government agency;
 - (b) have not within a 3-year period preceding this Grant Contract been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) have not within a 3-year period preceding this Grant Contract had one or more public transactions (Federal, State, or local) terminated for cause or default.

2. **LOBBYING** - To the best of his or her knowledge and belief, that:
 - (a) No Federal, State or local government appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal, State or local government agency; a member of Congress, North Carolina's General Assembly or local government body; an officer or employee of Congress, North Carolina's General Assembly or local government body, or an employee of a member of Congress, North Carolina's General Assembly or local government body, in connection with the awarding of any Federal, State or local government contract, the making of any Federal, State or local government grant, the making of any Federal, State or local government loan, the entering into of any Federal, State or local government cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal, State or local government contract, grant, loan, or cooperative agreement.
 - (b) If any funds other than Federal, State or local government appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency; a member of Congress, North Carolina's General Assembly or local government body; an officer or employee of Congress, North Carolina's General Assembly or local government body; or an employee of a member of Congress, North Carolina's General Assembly or local government body in connection with the Federal, State or local government contract, grant, loan, or cooperative agreement, the undersigned shall complete

and submit Standard Form-LLL, "Disclosure Form to Report Lobbying" in accordance with its instructions.

3. **DRUG-FREE WORK PLACE REQUIREMENTS** - It will comply by:
- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the Grant Recipient's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
 - (b) Establishing a drug-free awareness program to inform employees about -
 - (1) The dangers of drug abuse in the workplace;
 - (2) The Grant Recipient's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
 - (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a) above;
 - (d) Notifying the employee in the statement required by paragraph (a), above, that, as a condition of employment under the grant, the employee will -
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer of any criminal drug statue conviction for a violation occurring in the workplace no later than five days after such conviction;
 - (e) Notifying the Fund within ten days after receiving notice under subparagraph (d)(2), above, from an employee or otherwise receiving actual notice of such conviction;
 - (f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d)(2), above with respect to any employee who is so convicted -
 - (1) Taking appropriate personnel action against such an employee, up to and including termination; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
 - (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f), above.

AND

4. Will comply with the provisions of the Equal Employment Practices Act set out in Article 49A of Chapter 143 of the North Carolina General Statutes.
5. Will comply, as applicable, with the provisions of the Wage and Hour Act, Occupational Safety and Health Act of North Carolina, Controlled Substance Examination Regulation, Retaliatory Employment Discrimination, Safety and Health Programs and Committees, Workplace Violence Prevention, and other applicable provisions of Chapter 95 of the North Carolina General Statutes regarding labor standards.
6. Will comply with all applicable requirements of all other state laws, executive orders, regulations and policies governing the Fund.

As the duly authorized representative of the Grant Recipient, I hereby certify that the Grant Recipient will comply with the above certifications (Items 1 through 6):

1. Grant Recipient Name & Address:

2. Typed Name & Title of Authorized Representative:

3. Signature of Authorized Representative:

4. Date:

EXHIBIT D

**CWMTF PROGRESS REPORT FORM AND
CWMTF GRANT CONTRACT FINAL REPORT FORM**

See following pages.



North Carolina Clean Water Management Trust Fund

Project Progress Report Form

A progress report must be submitted every three months from the contract effective date and with each payment request.

CWMTF project no.: **2012-441** Contract expiration date:
 Project name/description: **Ararat River and Lovill's Creek Phase 3 Restoration (design and construction) and Greenway (design)**

Grant Recipient:
 Primary contact:

Submit progress report to:
 Kevin Boyer
 CWMTF
 1651 Mail Service Center
 Raleigh, NC 27699-1651
 kevin.boyer@ncdenr.gov

Progress report no. _____ Date prepared:
 Reporting period: from _____ to _____

Summarize activities, progress, and changes in status since the most recent progress report (include problems encountered or anticipated and solutions for them):

Status of project deliverables and outputs:

Deliverable or output item	Progress since previous progress report and status at end of this reporting period	Expected completion date	Date completed
Permits*			
Stream design plans and specifications			
Recorded conservation agreements*			
Enter into a stream construction contract			
Stream construction contract pricing information*			
Stream restoration construction			
Greenway trail design			
Grant contract final report*			

* Indicates items to be submitted to CWMTF, per the grant contract.

 Signature

 Date



North Carolina Clean Water Management Trust Fund

Grant Contract Final Report Form (restoration project)

This report must be submitted by the date given under Schedule in Exhibit A in order for CWMTF to release final payment.

CWMTF project no.: 2012-441

Contract expiration date:

Date prepared:

Project name/description: Ararat River and Lovill's Creek Phase 3 Restoration (design and construction) and Greenway (design)

Grant Recipient:
Primary contact:

Submit report to:

Kevin Boyer
CWMTF
1651 Mail Service Center
Raleigh, NC 27699-1651
kevin.boyer@ncdenr.gov

Status of project deliverables and outputs:

Deliverable or output item	Status at project's completion	Date completed
Permits*		
Stream design plans and specifications		
Recorded conservation agreements*		
Enter into a stream construction contract		
Stream construction contract pricing information*		
Stream restoration construction		
Greenway trail design		

* Indicates items to be submitted to CWMTF, per the grant contract.

a. Project summary and evaluation:

Project's original objectives, any changes, and explanation for changes:

Project's original scope of work, any changes, and explanation for changes:

Any changes to the project budget and explanation for changes:

Work accomplished on the project:

Lessons learned during the project/would do differently next time:

b. Describe and discuss water quality benefits achieved or to be achieved because of the project:

c. Provide an estimate of reduction in the rate of streambank erosion because of the project (attach calculations and identify sources of input):

d. Provide a map showing the Project Site and identifying stream sections as having been restored, enhanced, or stabilized as defined in Exhibit A (identify and attach a map no larger than 11"x17"):

e. Categories and costs of stream restoration (complete the following table):

Resource Institute, Inc.

CWMTF 2012-441; Ararat River and Lovills Creek Phase 3 Restoration (design/construction) & Greenway (design)

Category per DWQ 401 Certification Program (see Exhibit A)	Total Length in the Project (LF)	Unit Cost of Project Design and Permitting (\$/LF)	Unit Cost of Project Construction (\$/LF)
Restoration			
Enhancement			
Stabilization			
Total length			
f. Provide a geo-referenced shapefile (includes a .prj file) of the easement area boundary. Where multiple deeds of easement are recorded, include a separate polygon for each easement area. For accuracy, the shapefile should be derived from a survey of the easement area. If the easement area is not surveyed, the easement area boundary may be derived from mapping software (e.g. digitized in ArcMap).			
g. Provide project reports, plans, photographs, or other documents that verify the project's completion (attach or reference items already provided to CWMTF):			
h. Describe participation in the project by local partners or stakeholders (funding, in-kind contributions, and/or other):			
i. Provide an Engineer's Certification of Completion (attach if applicable):			

Signature

Date

EXHIBIT E

CWMTF INVOICE FORM

Exhibit E: CWMTF Cost Report and Payment Request

Complete Parts 1, 2, 3, and 4 and send, along with backup, to: Clean Water Management Trust Fund 1651 Mail Service Center Raleigh NC 27609-1651 Direct questions to the CWMTF Project Administrator, Kevin Boyer, at kevin.boyer@ncdenr.gov or (919)707-9129.	Grant Recipient	Resource Institute, Inc.	
	Project Name	Ararat River and Lovill's Creek Phase 3 Restoration (design and construction) and Greenway Trail (design)	
	CWMTF No. 2012-441	Expiration Date: July 31, 2015	
	Request no.	Request date:	

Item	a	b	c	d
	CWMTF funds budget	Payments previously approved	Payment requested	Payments approved + Payment requested
Stream design and permitting	\$48,000			\$0.00
Stream construction administration/observation	\$15,000			\$0.00
Stream construction	\$313,200			\$0.00
Project administration	\$23,800			\$0.00
TOTAL CWMTF FUNDED ITEMS	\$400,000	\$0.00		\$0.00
PERCENTAGE OF FUNDS	64.0%	#DIV/0!	#DIV/0!	#DIV/0!

Item	e	f	g	h
	Matching funds budget	Spending previously approved	Spending requested for approval	Spending approved + Spending requested
Greenway trail design	\$225,000			\$0.00

Initial indicating that a completed CWMTF Progress Report Form and backup substantiating spent amounts are attached.

Initial indicating that applicable pre-disbursement documents (see Exhibit C) have been submitted.

I certify that, to the best of my knowledge and belief, the amounts in this payment request for which payment by CWMTF is requested were incurred according to the terms of the Grant Contract and that these amounts have not previously been requested for payment.

I further certify that (check one):

This invoice includes one or more expenditures incurred by a vendor(s) of the Grant Recipient for which the Grant Recipient has not paid its vendors, in which case the Grant Recipient agrees to (1) pay its vendors for such expenditures within three banking days after receiving corresponding payment from CWMTF, and (2) confirm in writing to the Fund that all such previously unpaid vendor invoices have been paid; or

This invoice includes no expenditures incurred by a vendor of the Grant Recipient that have not yet been paid by the Grant Recipient and therefore is entirely for reimbursement by the Fund for payments already made by the Grant Recipient to its vendors.

Signature: _____

Submitted by: _____ Title: _____

email address: _____ Telephone number: _____

Notes:
 (1) To obtain payment, the Grant Recipient must submit itemized documentation substantiating costs incurred in implementing the project.

EXHIBIT F

UNIFORM ADMINISTRATION OF STATE GRANTS

Required Reporting and Grant Fund Oversight for Disbursement of State Funds to Non-State Entities

North Carolina General Statutes and the North Carolina Administrative Code place certain reporting requirements on non-State entities that receive State funds via appropriations to private purpose trust funds. All such required reports shall be filed as indicated below on the forms required by the OSBM and the Office of the State Auditor ("OSA"). The specific reporting requirements obligations of State Agencies are as follows:

A. NCGS Chapter 143C, Article 6, Part 3

1. NCGS § 143C-6-22. Use of State funds by non-State entities.

(a) Disbursement and Use of State Funds. – Every non-State entity that receives, uses, or expends any State funds shall use or expend the funds only for the purposes for which they were appropriated by the General Assembly. State funds include federal funds that flow through the State Treasury.

(b) Compliance by Non-State Entities. – If the Director of the Budget finds that a non-State entity has spent or encumbered State funds for an unauthorized purpose, or fails to submit or falsifies the information required by G.S. 143C-6-23 or any other provision of law, the Director shall take appropriate administrative action to ensure that no further irregularities or violations of law occur and shall report to the Attorney General any facts that pertain to an apparent violation of a criminal law or an apparent instance of malfeasance, misfeasance, or nonfeasance in connection with the use of State funds. Appropriate administrative action may include suspending or withholding the disbursement of State funds and recovering State funds previously disbursed.

(c) Civil Actions. – Civil actions to recover State funds or to obtain other mandatory orders in the name of the State on relation of the Attorney General, or in the name of the Office of State Budget and Management, shall be filed in the General Court of Justice in Wake County. (2006-203, s. 3.)

2. NCGS § 143C-6-23. State grant funds: administration; oversight and reporting requirements:

(a) Definitions. – The following definitions apply in this Section A:

(1) "Grant" and "grant funds" means State funds disbursed as a grant by a State agency; however, the terms do not include any payment made by the Medicaid program, the State Health Plan for Teachers and State Employees, or other similar medical programs.

- (2) "Grantee" means a non-State entity that receives State funds as a grant from a State agency but does not include any non-State entity subject to the audit and other reporting requirements of the Local Government Commission.
- (3) "Subgrantee" means a non-State entity that receives State funds as a grant from a grantee or from another subgrantee but does not include any non-State entity subject to the audit and other reporting requirements of the Local Government Commission.
- (a) Conflict of Interest Policy. – Every grantee shall file with the State agency disbursing funds to the grantee a copy of that grantee's policy addressing conflicts of interest that may arise involving the grantee's management employees and the members of its board of directors or other governing body. The policy shall address situations in which any of these individuals may directly or indirectly benefit, except as the grantee's employees or members of its board or other governing body, from the grantee's disbursing of State funds, and shall include actions to be taken by the grantee or the individual, or both, to avoid conflicts of interest and the appearance of impropriety. The policy shall be filed before the disbursing State agency may disburse the grant funds.
- (b) No Overdue Tax Debts. – Every grantee shall file with the State agency or department disbursing funds to the grantee a written statement completed by that grantee's board of directors or other governing body stating that the grantee does not have any overdue tax debts, as defined by G.S. 105-243.1, at the federal, State, or local level. The written statement shall be made under oath and shall be filed before the disbursing State agency or department may disburse the grant funds. A person who makes a false statement in violation of this subsection is guilty of a criminal offense punishable as provided by G.S. 143C-10-1.
- (c) Omitted.
- (d) Omitted.
- (e) Suspension and Recovery of Funds to Grant Recipients for Noncompliance. – The Office of State Budget and Management, after consultation with the administering State agency, shall have the power to suspend disbursement of grant funds to grantees or subgrantees, to prevent further use of grant funds already disbursed, and to recover grant funds already disbursed for noncompliance with rules adopted pursuant to subsection (d) of this section. If the grant funds are a pass-through of funds granted by an agency of the United States, then the Office of State Budget and Management must consult with the granting agency of the United States and the State agency that is the recipient of the pass-through funds prior to taking the actions authorized by this subsection.
- (f) Audit Oversight. – The State Auditor has audit oversight, with respect to grant funds received by the grantee or subgrantee, pursuant to Article 5A of Chapter 147 of the General Statutes, of every grantee or subgrantee that receives, uses, or expends grant funds. A grantee or subgrantee must, upon request, furnish to the State Auditor for audit all books, records, and other information necessary for the State Auditor to account fully for the use and expenditure of grant funds received by the grantee or subgrantee. The grantee or subgrantee must furnish any additional financial or budgetary information requested by the State Auditor, including audit

work papers in the possession of any auditor of a grantee or subgrantee directly related to the use and expenditure of grant funds.

(g) **Report on Grant Recipients That Failed to Comply.** – By May 1 of each year, the Office of State Budget and Management shall report to the Joint Legislative Commission on Governmental Operations and the Fiscal Research Division on all grantees or subgrantees that failed to comply with this section with respect to grant funds received in the prior fiscal year.

(h) **State Agencies to Submit Grant List to Auditor.** – By October 1 of each year, each State agency shall submit a list to the State Auditor, in the format prescribed by the State Auditor, of every grantee to which the agency disbursed grant funds in the prior fiscal year. The list shall include the amount disbursed to each grantee and other information as required by the State Auditor to comply with the requirements of this section. (2006-203, s. 3; 2007-323, s. 28.22A(o); 2007-345, s. 12.)

B. 09 NCAC 03M-Uniform Administration of State Grants

Notwithstanding the provisions of G.S. 150B-2 (8a) b, the rules set forth in 09 NCAC 03M are subject to the provisions of Chapter 150B of the General Statutes.

1. 09 NCAC 03M .0102 Definitions

Unless indicated otherwise from the context, the following terms shall have as their meanings in this Section B the definitions set forth below. All definitions are from 09 North Carolina Administrative Code (“NCAC”) 03M.0102 unless otherwise noted. Any change to the rule or statute adopted by the authority that is the source of the definition shall be automatically incorporated herein.

(a) "Agency" shall mean and include every public office, public officer or official (State or local, elected or appointed), institution, board, commission, bureau, council, department, authority or other unit of government of the State or of any county, unit, special district or other political subdivision of government.

(b) "Audit" means an examination of records or financial accounts to verify their accuracy.

(c) "Certification of Compliance" means a report provided by the grantor agency to the Office of the State Auditor that states that the grantee has met the reporting requirements established by this Subchapter and included a statement of certification by the grantor agency and copies of the submitted grantee reporting package.

(d) "Compliance Supplement" refers to the North Carolina State Compliance Supplement, maintained by the State and Local Government Finance Division within the North Carolina Department of State Treasurer that has been developed in cooperation with agencies to assist the local auditor in identifying program compliance requirements and audit procedures for testing those requirements.

(e) "Contract" means a legal instrument that is used to reflect a relationship between the agency, grantee, and subgrantee.

(f) "Fiscal Year" means the annual operating year of the non-State entity.

(g) "Financial Assistance" means assistance that non-State entities receive or administer in the form of grants, loans, loan guarantees, property (including donated surplus property), cooperative agreements, interest subsidies, insurance, food commodities, direct appropriations, and other assistance. Financial assistance does not include amounts received as reimbursement for services rendered to individuals for Medicare and Medicaid patient services.

(h) "Financial Statement" means a report providing financial statistics relative to a given part of an organization's operations or status.

(i) "Grant" means financial assistance provided by an agency, grantee, or subgrantee to carry out activities whereby the grantor anticipates no programmatic involvement with the grantee or subgrantee during the performance of the grant.

(j) "Grantee" has the meaning in G.S. 143C-6-23(a)(2).

(k) "Grantor" means an entity that provides resources, generally financial, to another entity in order to achieve a specified goal or objective.

(l) "Non-State Entity" has the meaning in G.S. 143C-1-1(d)(18).

(m) "Public Authority" has the meaning in G.S. 159-7(10).

(n) "Single Audit" means an audit that includes an examination of an organization's financial statements, internal controls, and compliance with the requirements of Federal or State awards.

(o) "Special Appropriation" means a legislative act authorizing the expenditure of a designated amount of public funds for a specific purpose.

(p) "State Funds" means any funds appropriated by the North Carolina General Assembly or collected by the State of North Carolina. State funds include federal financial assistance received by the State and transferred or disbursed to non-State entities. Both Federal and State funds maintain their identity as they are subgranted to other organizations.

(q) "Subgrantee" has the meaning in G.S. 143C-6-23(a)(3).

(r) "Unit of Local Government" has the meaning in G.S. 159-7(15).

2. 09 NCAC 03M .0201 Allowable Uses of State Funds

Expenditures of State funds by any grantee shall be in accordance with the Cost Principles outlined in the Office of Management and Budget (OMB) Circular A-87. If the grant funding

includes federal sources, the grantee shall ensure adherence to the cost principles established by the Federal Office of Management and Budget.

3. 09 NCAC 03M .0202 Grantee Responsibilities

A grantee that receives State funds shall ensure that those funds are utilized for the purpose of the grant and shall expend those funds in compliance with reporting requirements established by this Subchapter. Grantees shall:

- (a) Provide the information required by the grantor agency in order to comply with the procedures for disbursement of grant funds.
- (b) Maintain reports and accounting records that support the allowable expenditure of State funds. All reports and records shall be made available for inspection by both the awarding agency and the Office of the State Auditor for oversight, monitoring, and evaluation purposes.
- (c) Ensure that subgrantees comply with all reporting requirements of the grantee.

4. 09 NCAC 03M .0203 Subgrantee Responsibilities

A subgrantee that receives State funds must ensure that those funds are spent for the purpose of the grant and shall expend those funds in compliance with reporting requirements established by this Subchapter. Subgrantees shall:

- (a) Provide the information required by the grantor agency in order to comply with the procedures for disbursement of grant funds.
- (b) Maintain reports and accounting records that support the allowable expenditure of State funds. All reports and records shall be available for inspection by both the awarding agency and the Office of the State Auditor for oversight, monitoring, and evaluation purposes.
- (c) Ensure that any subgrantees comply with all reporting requirement of the grantee.

5. 09 NCAC 03M .0205 Reporting Thresholds and Formats for Grantees and Subgrantees

(a) For the purposes of this Subchapter, there are three reporting thresholds established for grantees and subgrantees receiving State funds. The reporting thresholds are:

(1) Less than \$25,000 – A grantee that receives, uses, or expends State funds in an amount less than twenty-five thousand dollars (\$25,000) within its fiscal year must comply with the reporting requirements established by this Subchapter including:

(A) A certification completed by the grantee Board and management stating that the State funds were received, used, or expended for the purposes for which they were granted; and

(B) An accounting of the State funds received, used, or expended.

All reporting requirements shall be filed with the funding agency within six months after the end of the grantee's fiscal year in which the State funds were received.

(2) \$25,000 up to \$500,000 - A grantee that receives, uses, or expends State funds in an amount of at least twenty-five thousand (\$25,000) and up to five hundred thousand dollars (\$500,000) within its fiscal year must comply with the reporting requirements established by this Subchapter including:

- (A) A certification completed by the grantee Board and management stating that the State funds were received, used, or expended for the purposes for which they were granted;
- (B) An accounting of the State funds received, used, or expended; and
- (C) A description of activities and accomplishments undertaken by the grantee with the State funds.

All reporting requirements shall be filed with the funding agency within six months after the end of the grantee's fiscal year in which the State funds were received.

(3) Greater than \$500,000 – A grantee that receives, uses, or expends State funds and in the amount greater than five hundred thousand dollars (\$500,000) within its fiscal year must comply with the reporting requirements established by this Subchapter including:

- (A) A certification completed by the grantee Board and management stating that the State funds were received, used, or expended for the purposes for which they were granted;
- (B) An audit prepared and completed by a licensed Certified Public Accountant for the grantee consistent with the reporting requirement of this Subchapter; and
- (C) A description of activities and accomplishments undertaken by the grantee with the State funds.

All reporting requirements shall be filed with both the funding agency and the Office of the State Auditor within nine months after the end of the grantee's fiscal year in which the State funds were received.

(b) Unless prohibited by law, the costs of audits made in accordance with the provisions of this rule are allowable charges to State and Federal awards. The charges may be considered a direct cost or an allocated indirect cost, as determined in accordance with cost principles outlined in the Office of Budget and Management (OMB) Circular A-87. The cost of any audit not conducted in accordance with this rule is unallowable and shall not be charged to State or Federal grants.

(c) The audit requirements set forth herein do not replace a request for submission of audit reports by grantor agencies in connection with requests for direct appropriation of state aid by the General Assembly.

(d) Notwithstanding the provisions of these rules, a grantee may satisfy the reporting requirements of Part (a) (3)(B) of this rule by submitting a copy of the report required under the federal law with respect to the same funds.

(e) All grantees and subgrantees shall use the forms of the Office of State Budget and Management and of the Office of the State Auditor in making reports to the awarding agencies and the Office of the State Auditor.

C. Reporting Format

All reporting requirements as described above in Section B. 09 NCAC 03M-Uniform Administration of State Grants: Reporting Thresholds and Formats for Grant Recipients and Sub Grant Recipients must be submitted online via the NC Grants reporting system administered by the Office of State Budget and Management.

D. Project Audits

Grant Recipient agrees that the Fund and the OSA have the right to audit the books and records of the Grant Recipient pertaining to this Grant Contract both prior to Closing and for five (5) years after the completion or termination of this Grant Contract, or until all audit exceptions, if any, have been resolved, whichever is longer. The Grant Recipient shall retain complete accounting records, including original invoices, payrolls, agreements, working papers, or other documents clearly showing the nature of all costs incurred under this Grant Contract, for that same period of time. All such records shall be accessible to the Fund, DENR, OSBM and OSA.

EXHIBIT G

ADDITIONAL DEFINITIONS

Unless indicated otherwise from context, the following terms shall have as their meanings in this Grant Contract the definitions set forth below.

1. "Grant Contract" means a legal instrument that is used to reflect a relationship between the Grantor the Grant Recipient and is used interchangeably herein with the term "Contract".
2. "Construction contract" means a legally binding agreement between the Grant Recipient and another party for implementing construction work described in the project scope of work given in Exhibit A.
3. "Enter into a construction contract" means signature of a construction contract by both the Grant Recipient and another party for the construction work described in the project scope of work given in Exhibit A.
4. "Grant" means State funds disbursed by the Clean Water Management Trust Fund to a Grant Recipient to conduct activities described in this Grant Contract.
5. "Grant Recipient" shall mean one of the entities identified as a party to this Contract. Likewise, "Grantee" shall mean a party to a deed or other instrument of conveyance that is vested with a real property interest by said instrument.
6. "Grantor," as used in this Grant Contract, means the Fund in its capacity as provider Grant funds for the Grant Recipient's use in conducting the Project.
7. "Stream enhancement" means the process of implementing certain stream rehabilitation practices in order to improve water quality and/or ecological function. These practices typically are conducted on the stream bank or in the flood prone area. An enhancement procedure may include fencing cattle out of a stream and re-establishing vegetation in order to provide streambank stability. These types of practices should be conducted only on a stream reach that is not experiencing severe aggradation or erosion. Enhancement also may include placing in-stream habitat structures, provided that the in-stream structures do not affect the overall dimension, pattern, or profile of a stream that is in dynamic equilibrium.
8. "Stream restoration" means the process of converting an unstable, altered, or degraded stream corridor including adjacent riparian zone and flood prone areas, to its natural or referenced, stable conditions considering recent and future watershed conditions. This process also includes restoring the geomorphic dimension, pattern, and profile and biological and chemical integrity, including transport of water and sediment produced by the stream's watershed in order to achieve dynamic equilibrium.
9. "Stream stabilization" means the in-place stabilization of a severely eroding streambank. Stabilization techniques that include "soft" methods or natural materials (such as root wads, rock vanes, and vegetated crib walls) may be considered as part of a restoration design. However, stream stabilization techniques that rely heavily on "hard" engineering, such as concrete-lined channels, rip rap, or gabions to stabilize streambanks will not be considered to be stream restoration or stream enhancement.

EXHIBIT H

GENERAL TERMS AND CONDITIONS

A. Affirmative Covenants

1. Compliance with Laws. Grant Recipient agrees to perform and maintain the Project in compliance with all federal, state and local laws and regulations, including, without limitation, environmental, zoning and other land use laws and regulations. The Grant Recipient agrees to take reasonable steps to advise Project participants that they shall comply in the same manner.

2. Insurance. The Grant Recipient agrees to keep structures or improvements of any sort constituting the Project fully insured at all times during construction and to keep fully insured all building materials at any time located on the Project. Grant Recipient will ensure that all contractors furnish adequate payment and performance bonds.

3. No Mitigation. Grant Recipient shall not use a property(ies) of the Project Site or any portion thereof to satisfy compensation mitigation requirements under 33 U.S.C. § 1344 or N.C.G.S. 143-214.11.

4. No Pollution Credits. If the Project enables the Grant Recipient to reduce the discharge of phosphorus, nitrogen, or any other nutrient or pollutant below, or further below, applicable regulatory limits ("Pollution Credits"), Grant Recipient shall not sell, trade or give to another person or entity that percentage of any resulting credits achieved by the Project corresponding to the percentage of the Project costs provided by the Fund.

5. Right of Entry and Inspections. The Grant Recipient shall permit representatives of the Fund to visit the property(ies) of the Project Site and to review the activities of the Grant Recipient pursuant to the Grant, including books and records in any way related to the Grant or the Project.

6. Retention, Operation, Maintenance and Use.

(a) Grant Recipient agrees to complete the Project as approved by the Fund. The descriptions, purpose, schedules, scope of work and budgets set out in Exhibits A and B, and accompanying or related plans, specifications, estimates, procedures and maps submitted to the Fund by the Grant Recipient are the foundation of this Grant Contract. Only changes deemed non-material in type at the discretion of the Executive Director may be made without the consent of the Fund's Board of Trustees.

(b) For a period of ten (10) years after Project completion, Grant Recipient agrees to maintain and manage, at maximum functional utility, the end product of the Project. The Grant Recipient shall inspect the Project on a routine basis, with additional inspections following major storm events and shall make all necessary repairs to return the infrastructure to its full function within 2 weeks or as soon as possible thereafter.

(c) Property acquired, developed or improved with grant assistance from the Fund shall be retained and used for the purposes identified in Exhibit A, and Grant Recipient hereby

agrees to file or record such restrictions as may be required to assure such continued use and such restrictions shall be in form and substance satisfactory to the Fund.

(d) If at some future date, the Fund and the Grant Recipient agree that the Project should no longer continue on a property(ies) of the Project Site, then Grant Recipient will abandon the Project and allow such property to return to its natural state.

7. Material Modifications. Any proposed material modification of the Project shall be subject to approval by the Fund.

8. Conservation Easement or Other Land Use Restrictions. Grant Recipient shall obtain permanent Conservation Easements or other perpetual land use restrictions for this Project satisfactory to the Fund in its sole discretion.

9. Signs for Visibility. Grant Recipient shall post signs on publicly visible areas of properties that have public access and/or where private property owners are amenable to signage. The Fund will provide the signs or, if the Grant Recipient prefers, the Fund will provide artwork and specifications for signs fabricated and posted by the Grant Recipient. Signs must acknowledge the Fund as a source of funding for the Project.

10. Boundary Marking of Riparian Buffer Easement Areas. Grant Recipient shall mark the outside limits of riparian buffer conservation easement areas in a manner that is clearly visible and identifiable as the limit of the easement area.

11. Publicity. To the extent possible, the Grant Recipient will use its best efforts to appropriately publicize the Project's water quality benefits to the general public, local government and state representatives, including the role of the Fund in the funding and development of the Project.

12. Conflicts of Interest. Grant Recipient shall at all times comply with its conflict of interest policy.

13. Additional Requirements. Grant Recipient shall comply with all legal requirements applicable to the use of the Grant.

14. Tax Exempt Status. The Grant Recipient shall maintain tax-exempt status under Section 501(c)(3) of the Internal Revenue Code of 1986, as amended (or any successor section thereof) and the regulations promulgated there under (the "Code") and shall notify the Fund upon any change in its status under the Code prior to all Grant funds being disbursed to Grant Recipient.

15. If the Fund so requests, the Grant Recipient shall provide data to the North Carolina Rural Economic Development Center's Water Resources Inventory and Data Management Project and/or to the North Carolina Geographic Information Coordinating Council's NC One Map Project.

B. Representations and Warranties

In order to induce the Fund to enter into this Grant Contract and to make the Grant as herein provided, the Grant Recipient after reasonable inquiry makes the following representations, warranties and covenants, which shall remain in effect after the execution and delivery of this Grant Contract and any other documents required hereunder, any inspection or examinations at any time made by or on behalf of the Fund, and the completion of the Project by the Grant Recipient:

1. No Actions. There are no actions, suits, or proceedings pending, or to the knowledge of the Grant Recipient, threatened, against or affecting the Grant Recipient before any court, arbitrator, or governmental or administrative body or agency which might affect the Grant Recipient's ability to observe and perform its obligations under this Grant Contract.
2. Validity of Grant Documents. Upon execution and delivery of items required hereunder, this Grant Contract and the other grant documents and items required hereunder will be valid and binding agreements, enforceable in accordance with the terms thereof.
3. No Untrue Statements. Neither this Grant Contract nor any information, certificate, statement, or other document furnished by Grant Recipient in connection with the Grant, contains any untrue statement of a material fact or omits disclosure of a material fact which affects a property(ies) of the Project Site, the Conservation Easement or the ability of the Grant Recipient to perform this Grant Contract.
4. Additional Requirements. Grant Recipient shall comply with all legal requirements applicable to the use of the Grant funds.
5. Books and Records. The Grant Recipient agrees to maintain and make available to the Fund at all reasonable times all documents, books, and records of all expenditures for costs applicable to this Grant Contract, and to submit properly certified billings for such costs on forms prescribed by the Fund and supported by detailed data sheets which will facilitate the audit of the Grant Recipient's records.

C. Termination by Mutual Consent

The Parties may terminate this Contract by mutual written consent with 60 days prior written notice to the Contract Administrators, or as otherwise provided by law.

D. Termination for Cause; Events of Default

The happening of any of the following, after the expiration of any applicable cure period without the cure thereof, shall constitute an event of default ("Event(s) of Default") by the Grant Recipient of its obligations to the Fund, and shall entitle the Fund to exercise all rights and remedies under this Grant Contract and as otherwise available at law or equity:

1. Property Unsuitable. A determination by the Fund, prior to the disbursement of the Grant funds, that a property(ies) of the Project Site is unsuitable for the purposes of the Grant Contract.

2. Unsuitable Use. A property(ies) of the Project Site is used in a manner materially inconsistent with the purposes of this Grant Contract or the Project.
3. Default in Performance. The default by the Grant Recipient in the observance or performance of any of the terms, conditions or covenants of this Grant Contract; provided, however, that no such default shall occur until the Grant Recipient has been given written notice of the default and 30 days to cure have elapsed.
4. Misrepresentation. If any representation or warranty made by the Grant Recipient in connection with the Grant or any information, certificate, statement or report heretofore or hereafter made shall be untrue or misleading in any material respect at the time made.
5. Eligibility of Grant Recipient. If Grant Recipient ceases to be qualified to receive Grant funds or is dissolved or otherwise ceases to exist.
6. Abandonment of the Project. If Grant Recipient abandons or otherwise ceases to continue to make reasonable progress towards completion of the Project.

E. Fund's Rights and Remedies

If an Event of Default shall occur, the Fund shall have the following rights and remedies, all of which are exercisable at the Fund's sole discretion, and are cumulative, concurrent and independent rights:

1. Project Termination. If an Event of Default occurs, the Fund may, at its discretion suspend and/or terminate all obligations of the Fund hereunder. If, in the judgment of the Fund, such failure was due to no fault of the Grant Recipient, amounts required to resolve at minimum costs any irrevocable obligations properly incurred by Grant Recipient shall, in the discretion of the Fund, be eligible for assistance under this Grant Contract.
2. Additional Remedies. If an Event of Default occurs, the Fund shall have the power and authority, consistent with its statutory authority: (a) to prevent any impairment of the Project by any acts which may be unlawful or in violation of this Grant Contract or any other item or document required hereunder, (b) to obtain title to or otherwise preserve or protect its interest in the Project and any property acquired with Grant funds, (c) to compel specific performance of any of Grant Recipient's obligations under this Grant Contract, (d) to obtain return of all Grant Funds, including equipment if applicable and/or (e) to seek damages from any appropriate person or entity. The Fund, or its designee, may also, at the Fund's sole discretion, continue to complete the Project, or any portion thereof deemed appropriate by the Fund, and the Grant Recipient shall cooperate in the completion of the Project. The Fund shall be under no obligation to complete the Project.
3. Nonwaiver. No delay, forbearance, waiver, or omission of the Fund to exercise any right, power or remedy accruing upon any Event of Default shall exhaust or impair any such right, power or remedy or shall be construed to waive any such Event of Default or to constitute acquiescence therein. Every right, power and remedy given to the Fund may be exercised from

time to time and as often as may be deemed expedient by the Fund.

F. Miscellaneous

1. Modification. This Grant Contract may be rescinded, modified or amended only by written agreement executed by all parties hereto.

2. Benefit. This Grant Contract is made and entered into for the sole protection and benefit of the Fund, the State and the Grant Recipient, and their respective successors and assigns, subject always to the provisions of paragraph F.8 of this Exhibit H. Except for the State, there shall be no third party beneficiaries to this Grant Contract.

3. Further Assurance. In connection with and after the disbursement of Grant funds under this Grant Contract, upon the reasonable request of the Fund, the Grant Recipient shall execute, acknowledge and deliver or cause to be delivered all such further documents and assurances, and comply with any other requests as may be reasonably required by the Fund or otherwise appropriate to carry out and effectuate the Grant as contemplated by this Grant Contract and the purposes of the Conservation Easement.

4. Compliance by Others. The Grant Recipient shall be responsible for compliance with the terms of this Grant Contract by any sub-grant recipient, including but not limited to, a political subdivision, public agency, or qualified non-profit organization to which funds or obligations are transferred, delegated or assigned pursuant to this Grant Contract. Delegation by the Grant Recipient to a sub-grant recipient of any duty or obligation hereunder does not relieve the Grant Recipient of any duty or obligation created hereunder. Failure by such sub-grant recipient to comply with the terms of this Grant Contract shall be deemed failure by the Grant Recipient to comply with the terms of this Grant Contract. Any such delegation of duties or obligations shall be in writing, signed by the Grant Recipient and sub-grant recipient, and shall contain an affirmative covenant by the sub-grant recipient that it shall abide by the rules set forth in Title 09, Subchapter 03M of the North Carolina Administrative Code.

5. Independent Status of the Parties. The Parties are independent entities and neither this Grant Contract nor any provision of it or any of the Grant Documents shall be deemed to create a partnership or joint venture between the Parties. Further, neither the Grant Contract nor any of the Grant Documents shall in any way be interpreted or construed as making the Grant Recipient, its agents or employees, agents or representatives of the Fund. The Grant Recipient is and shall be an independent contractor in the performance of this Contract and as such shall be wholly responsible for the work to be performed and for the supervision of its employees. In no event shall the Fund be liable for debts or claims accruing or arising against the Grant Recipient. The Grant Recipient represents that it has, or shall secure at its own expense, all personnel required in the performance of this Contract. Such employees shall not be employees of, nor have any individual contractual relationship with, the Fund.

6. Indemnity. The Grant Recipient agrees, to the fullest extent permitted by law, to release, defend, protect, indemnify and hold harmless the State, the Fund, its Trustees, employees and agents against claims, losses, liabilities, damages, and costs, including reasonable attorney fees, which result from or arise out of: (a) damages or injuries to persons or property caused by the

negligent acts or omissions of Grant Recipient, its employees, or agents in use or management of the Project; or (b) use or presence of any hazardous substance, waste or other regulated material in, under or on a property(ies) of the Project Site. The obligations under this paragraph are independent of all other rights or obligations set forth herein. This indemnity shall survive the disbursement of the Grant funds, as well as any termination of this Grant Contract.

7. No Discrimination. The Grant Recipient shall assure that no person will be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity covered by this Grant Contract solely on the grounds of race, color, age, religion, sex or national origin.

8. Binding Effect, Contract Assignable. The terms hereof shall be binding upon and inure to the benefit of the successors, assigns, and personal representatives of the parties hereto; provided, however, that the Grant Recipient may not assign this Grant Contract or any of its rights, interests, duties or obligations hereunder or any Grant proceeds or other moneys to be advanced hereunder in whole or in part without the prior written consent of the Fund, which may be withheld for any reason and that any such assignment (whether voluntary or by operation of law) without said consent shall be void.

9. Governing Law, Construction and Jurisdiction. This Grant Contract and the other Grant documents and all matters relating thereto shall be governed by and construed and interpreted in accordance with the laws of the State of North Carolina, notwithstanding the principles of conflicts of law. The headings and section numbers contained herein are for reference purposes only. The terms of this Grant Contract shall be construed according to their plain meaning, and not strictly construed for or against either party hereto. The Grant Recipient hereby submits to the jurisdiction of the state and Federal courts located in North Carolina and agree that the Fund may, at its option, enforce its rights under the Grant Documents in such courts. The parties hereto intend this document to be an instrument executed under seal. The Fund and any party that is an individual, partnership or limited liability company hereby adopts the word "SEAL" following his/her signature and the name of the Fund or partnership or limited liability company as his/her/its legal seal.

10. Savings Clause. Invalidation of any one or more of the provisions of this Grant Contract, or portion thereof, shall in no way affect any of the other provisions hereof and portions thereof which shall remain in full force and effect.

11. Additional Remedies. Except as otherwise specifically set forth herein, the rights and remedies provided hereunder shall be in addition to, and not in lieu of, all other rights and remedies available in connection with this Grant Contract.

12. Survival. Where any representations, warranties, covenants, indemnities or other provisions contained in this Grant Contract by its context or otherwise, evidences the intent of the parties that such provisions should survive the termination of this Grant Contract or any Closing, the provisions shall survive any termination or Closing. Without limiting the generality of the foregoing, the parties specifically acknowledge and agree that the provisions of Exhibit H, Exhibit I, and the conditions shown on Exhibit A shall survive any termination of this Grant Contract as well as any Closing.

13. Incorporation of Exhibits. All exhibits attached to this Contract are fully incorporated as if set forth herein.

14. Entire Agreement. This Grant Contract constitutes the entire agreement between the parties hereto with respect to the subject matter hereof. All recitals, exhibits, schedules and other attachments hereto are incorporated herein by reference.

15. Headings. The headings of the various sections of this Grant Contract have been inserted for convenience only and shall not modify, define, limit or expand the express provisions of this Grant Contract.

16. Time of the Essence. Time is of the essence in the performance of this Grant Contract.

EXHIBIT I

CONSERVATION EASEMENTS

1. As used in this exhibit, "Conservation Easement" refers to the more general term "Conservation Agreement" as defined in NCGS Chapter 121, Article 4.
2. Conservation Easements obtained and recorded in connection with this Project shall be patterned after the Fund's template Deed of Conservation Easement for Restoration Purposes ("Restoration Easement").
3. Conservation Easements obtained and recorded in connection with this Project shall be held by a party satisfactory to the Fund.
4. Before disbursement of any construction funds under this Grant Contract, the Fund must review and approve the Conservation Easements, and said Conservation Easements must be recorded in the official land records of the appropriate county.
5. The acquisition of the Conservation Easements may herein also be referred to as the "Closing."
6. "Donated Conservation Easements" are Conservation Easements for which neither the Fund nor the Grant Recipient has expended or will expend any funds to obtain property interest.
7. Conservation easements for stream restoration riparian buffers may not be purchased using Grant funds. Conservation easements for stream restoration riparian buffers must be donated easements, be purchased with matching funds, and/or be purchased with funds not included in the project budget in Exhibit B.
8. The following requirements apply to all Conservation Easements obtained and recorded in connection with this Project:
 - (a) Conservation Easements shall have good and marketable title.
 - (b) The terms of Conservation Easements shall provide a third party right of enforcement to the State of North Carolina, such that in the event the easement holder satisfactory to the Fund fails to enforce any of the terms of Conservation Easements, the State shall have the independent right to enforce the terms of Conservation Easements through any and all authorities available under state law;
 - (c) Donated Conservation Easements shall be conveyed as an absolute gift to the easement holder satisfactory to the Fund subject to an executory interest in the State such that in the event that the easement holder satisfactory to the Fund attempts to terminate, transfer or otherwise divest itself of any rights, title or interests in a Conservation Easement without the prior written consent of the State, then all rights, title or interest in the Conservation Easement shall automatically vest in the State;
 - (d) Conservation Easements shall provide that, in the event the easement holder satisfactory to the Fund transfers or assigns the Conservation Easement to a third party, the organization receiving the interest will be a qualified organization as that term is defined in

Section 170(h)(3) of the Internal Revenue Code, which is organized or operated primarily for one of the conservation purposes specified in Section 170 (h)(4)(A) of the Internal Revenue Code, and that the transferee or assignee will further covenant and agree that the terms of the transfer or assignment will require it to continue to carry out in perpetuity the conservation purposes that the contribution was originally intended to advance. Specifically, Conservation Easements shall provide that, in the event the easement holder satisfactory to the Fund transfers the Conservation Easement, the easement holder satisfactory to the Fund shall covenant and agree to continue to monitor and observe the Conservation Easement in perpetuity with the State for such purposes as are described in the Conservation Easement and this Grant Contract and to report to the State and the Fund any observed violations thereof. The easement holder satisfactory to the Fund may be released from the obligation to monitor the Conservation Easement only with prior written approval of the State and the Fund; and

- (e) Any specific terms and conditions set forth on Exhibit A.