Implementation Plan
South Yadkin River Watershed: 03040102

This conservation implementation plan was developed through the High Rock Lake Cooperative Conservation Partnership Initiative funded by the United States Department of Agriculture, Natural Resources Conservation Service (NRCS). The N.C. Department of Environment and Natural Resources, Division of Soil and Water Conservation and local soil and water conservation districts in the watershed all worked together to develop a natural resource inventory for each of the three eight-digit hydrologic units in the High Rock Lake Watershed: 03040101, 03040102 and 03040103. The districts held local stakeholder meetings to discuss the natural resources of the watershed and obtain input on possible solutions. Each district then completed a survey summarizing the stakeholder comments generated at their meeting(s).

The plan contained in this document is for the South Yadkin River Watershed. It is a compilation of survey results from the Alexander, Davie, Iredell, Rowan, Wilkes and Yadkin districts. Many of the resource concerns and identified solutions can be addressed with local soil and water conservation district programs and staff. Some issues may require a partnership effort with additional agencies and organizations, while others may be best conducted through separate partner initiatives. Significant public and political support will be necessary to implement these recommendations. In summary, additional conservation practices, education and outreach, financial resources and staff are needed to implement the recommendations in this plan.

The plan is organized by topic, beginning with those that are the traditional work of districts: agriculture, forestry and wildlife. The remaining portions of the plan focus on farmland preservation, the new Community Conservation Assistance Program and the need for more, or enhanced, local programs. The topics of focus will help districts address natural resource concerns in the changing landscape of the South Yadkin River Watershed.

One of the most frequent concerns discussed in the local stakeholder meetings is increasing pressure from development. Experts predict that the state's population will increase to over 9.3 million by 2010 and development is occurring at a rate of approximately 277 acres daily. Moreover, North Carolina has lost an estimated 310,000 acres of farmland with more than 5,500 farms going out of business since 2000. Local soil and water conservation districts will be on the front line in addressing these issues that are critical to our state’s future.

Agriculture

There is a great deal of concern in the watershed about agricultural impacts on surface and ground water, particularly the effects of livestock. There are state and federal cost share programs that offer best management practices (BMPs) that can be installed to address these issues, such as those that keep animals out of streams, utilize animal waste for its nutrient value and reduce erosion and runoff from cropland. There is also a need to stabilize streambanks and plant riparian buffers. The agriculture BMPs that districts requested in this watershed are described in Table 1.

Table 1: Agriculture Best Management Practice Needs

Best Management Practices	**Quantity**	**Units**	**Cost (100%)**	**Maintenance Cost (15%)**
Livestock watering systems	45	systems	$300,000	$45,000
Livestock exclusion / fencing	1,428,000	feet	$3,367,605	$505,000
Heavy use area protection	5	acres	$25,000	$3,750
Litter storage structures	65	structures	$1,500,000	$225,000
Waste management systems	300	systems	$15,000,000	$2,250,000
Grassed waterways, field borders	1,725	acres	$1,700,000	$255,000
Long term no-till	33,500	acres	$4,180,000	Not applicable
Sod-based crop rotation, strip cropping	400	acres	$45,000	$6,750
Cropland conversion	7,300	acres	$1,039,000	$155,850
Streambank stabilization, stream restoration	370,000	feet	$5,015,000	$752,250
Riparian buffers	13,464,000	feet	$500,000	$75,000

Forestry and Wildlife

Improved Timber Management

There is a need for improved timber management on forestland in the South Yadkin Watershed. This effort must include education of landowners, reduction of invasive species, and improved harvesting practices. Greater use of BMPs quantified in Table 2 will improve timber quality and the rate of return on forestland. Additional markets for small timber tracts, programs for small sawmill operations and better access to tree seedlings would be beneficial. The idea of carbon credits is of interest in this watershed, too. For these programs to succeed, landowner participation should be encouraged through additional incentives or tax benefits.

Table 2: Forestry Best Management Practice Needs

Best Management Practices	**Quantity**	**Units**	**Cost (100%)**	**Maintenance Cost (15%)**
Sustainable forestry management plans	100,000	acres	$5,000,000	$750,000
Replant older/harvested stands	3,000	acres	$550,000	$82,500

Loss of Wildlife Habitat

Loss of wildlife habitat is closely associated with forest loss and this was a recurring issue among districts that hosted stakeholder meetings. Currently, state and federal programs offer numerous BMPs that increase wildlife habitat, and they may often be incorporated with other traditional conservation practices. Increased use of these BMPs, as detailed in Table 3, would help in addressing this concern. In addition, districts are interested in conducting a study of viable wildlife corridors and a natural history inventory of this watershed. Districts also support the expansion of state wildlife areas to include the acquisition of Rocky Face Mountain.

Table 3: Wildlife Habitat Best Management Practice Needs

Best Management Practices	**Quantity**	**Units**	**Cost (100%)**	**Maintenance Cost (15%)**
Upland wildlife habitat management	1,000	acres	$600,000	$90,000
Shallow waterfowl impoundments	5	structures	$10,000	$1,500
Field borders	3,014	acres	$308,400	$46,260
Hedgerow planting	10	acres	$5,000	$750
Openings and clearings	100	acres	$80,000	$12,000
Conservation easements	10,000	acres	$5,000,000	Not applicable
Wildlife food plots	2,500	acres	$250,000	$37,500
Conservation Reserve Program	8,000	acres	$320,000	Not applicable

Farmland Preservation

Like agricultural communities statewide, those in the South Yadkin Watershed are deeply concerned about the loss of farmland due to encroaching development and population growth. Tools that could assist with farmland preservation in this area include establishing Voluntary Agricultural Districts (VAD), Enhanced Voluntary Agricultural Districts (EVAD), county Farmland Protection Plans and conservation easements. As of 2006, 15 of the 19 districts in the project area have VADs and one district has an EVAD. There are no county Farmland Protection Plans in the project area at this time, but there is local interest in developing these plans. Farmland Protection Plans are a requirement to qualify for state Agricultural Development and Farmland Preservation Trust Fund assistance, so more county plans will be drafted in the coming years to protect the watershed's valuable farmland. Districts described the tools that are needed for land preservation in Table 4.

Table 4: Farmland Preservation Needs

Farmland Preservation Tools	**Quantity**	**Units**	**Cost (100%)**
Enhanced voluntary agricultural districts	Unknown	acres	$2,500
Farmland and forestland preservation easements	140,189	acres	$23,630,000
Zoning upgrades	35,000	acres	$5,000
Comprehensive land use plan for entire watershed	260,454	acres	Unknown
Countywide tax incentives and land use study	1	county	$25,000
Outreach program	2	county	$18,500
Public education program	1	county	$2,000

**Land values vary throughout the watershed and the costs listed above in Table 4 are the sum of the individual county data that was submitted through this planning project.*

Community Conservation Assistance Program

As land use changes, the need grows for conservation programs to assist landowners with resource concerns on rural, suburban and urban properties. The Division of Soil and Water Conservation's Community Conservation Assistance Program (CCAP) can now provide technical and financial assistance to these landowners. In the South Yadkin Watershed, many districts requested additional funding for technical assistance and the installation of practices. In Iredell County, there is interest in installing 25 sediment basins to control runoff at a cost of $20,750. Table 5 includes all BMPs, currently available through the program, that were specifically requested by districts.

Table 5: Community Conservation Assistance Best Management Practice Needs

Best Management Practices	Quantity	Units	Cost (100%)
Backyard rain gardens	15	systems	$15,000
Cisterns	50	systems	$20,225
Bioretention areas and stormwater wetlands	10	systems	$60,000
Riparian buffers	48	acres	$34,425
Streambank protection and stream restoration	2	miles	$5,280,000

Local Programs

With increased development in North Carolina, natural resource concerns are no longer limited to solely those of the agricultural community. To assist the needs of all landowners, districts have begun to take on programs that focus on erosion and sediment control and stormwater management. Additional efforts focusing on land use management and low impact development should be discussed with county personnel and elected officials and implemented at the county level. Districts in the South Yadkin are also interested in developing a "green seal program" to build awareness and publicly recognize teachers, contractors and developers who are leaders in conservation.

Development

In areas where development occurs, control of erosion and sedimentation are of utmost concern. Alexander County would like to explore the potential of developing a local erosion and sedimentation control program. This program would require the adoption of a local ordinance, hiring of staff, and hosting public education workshops.

Stormwater Management

With development comes the increased need for stormwater management. Alexander County would like to pursue the creation of a steering committee to evaluate stormwater needs. The purpose of this committee will be to develop and recommend a stormwater ordinance to county

officials. Another program the county is interested in starting is a low impact development (LID) program.

Water Conservation

During this year of exceptional drought, the South Yadkin Watershed has water quantity issues that districts must address in the near future, especially those issues related to groundwater supply and quality. Alexander and Iredell Counties would like to implement a comprehensive groundwater study with regional pump tests and a system of permitting and monitoring wells. The next step would be to develop and employ a drought management plan and publish a groundwater study report. This initiative would include a public education component, and could expand to include a possible incentive program to create a public well records program. With all the action items combined, this project would require the hiring of an additional staff position, and the monitoring effort would cost a minimum of $60,000.

In combination with monitoring, water conservation practices such as groundwater recharge basins, dry dams, and other structures that encourage surface water conservation should be installed. Additional water quality and quantity programs of interest include starting a stream monitoring network and creating a website and listserv for counties throughout the entire High Rock Lake Watershed to network among each other.

Staffing Needs

In the South Yadkin Watershed, districts need additional staff if they are to expand existing programs and deliver new programs. In addition, under the NRCS restructuring plan, the need for technical assistance staff at the district level has become greater. If districts are to maintain the current level of service to citizens, it is imperative that they receive increased funding for technical assistance. The following positions are requested to handle the increased workload:

- One forester to develop sustainable forestry management plans
- One wildlife biologist
- One groundwater program coordinator
- One county watershed coordinator
- One erosion and sedimentation control inspector (for a county local program)
- One stormwater inspector
- One nutrient management planner

Education and Outreach

Public education, outreach materials and staff training are crucial to all district programs, and virtually all districts that participated in stakeholder meetings stressed the importance of this. Depending on the area of focus, or "target market," for each program, the type of educational outreach needed will vary. Districts must have funding for:

- Public education and information sessions
- Support materials such as brochures, posters and newsletters
- Employee training workshops for new programs
- Training manuals for new programs
- Staff support for media outreach