

# Nolichucky River Watershed-Based Plan

## Name of Project

Nolichucky River Watershed-Based Plan

## Lead Organization

The Middle Nolichucky Watershed Alliance (MNWA) will be the Lead Organization. MNWA's mission is to educate and involve the community through establishing public-private partnerships to develop and implement action plans to preserve, protect, and improve the watersheds in the Middle Nolichucky Watershed. The Middle Nolichucky Watershed Alliance is a non-profit 501(c)(3) organization receiving its IRS designation in 2002.

A major partner in this effort will be a newly formed watershed alliance called the Nolichucky Watershed Partnership (NWP). This group is an umbrella group of watershed alliances and more than twenty other stakeholders involved in watershed restoration throughout the Nolichucky River Watershed. Individual watershed alliances involved in NWP include the Toe River Valley Watch of North Carolina, the Upper Nolichucky Watershed Alliance (UNWA) and MNWA in Tennessee. Additional stakeholders actively involved in NWP include towns, counties, soil conservation districts, the Natural Resources Conservation Service (NRCS), the Tennessee Valley Authority (TVA), Resource Conservation and Development (RC&D) Councils, the Tennessee Department of Environment and Conservation (TDEC), Tennessee Wildlife Resources Agency (TWRA), Tennessee Department of Agriculture (TDA), and U.S. Fish and Wildlife Service (USFWS). NWP has been meeting for almost two years and gaining momentum in providing opportunities for stakeholders throughout the watershed to actively work together toward watershed restoration.

The Project Manager for this initiative will be Paul Hayden, Executive Director of MNWA. The office phone number is 423-525-4652. Paul Hayden can also be contacted by cell phone at 423-552-0774 or via email at [pehaydentn@yahoo.com](mailto:pehaydentn@yahoo.com).

## Watershed Identification

The Nolichucky River Watershed (HUC Number TN06010108) is located primarily in Northeast, Tennessee and covers approximately 1,762 square miles (64% in TN and 36% in NC) and the main stem of the river is approximately 150 miles long. Figure 1 depicts the Nolichucky River Watershed along with the coverage areas of the three primary watershed alliances.

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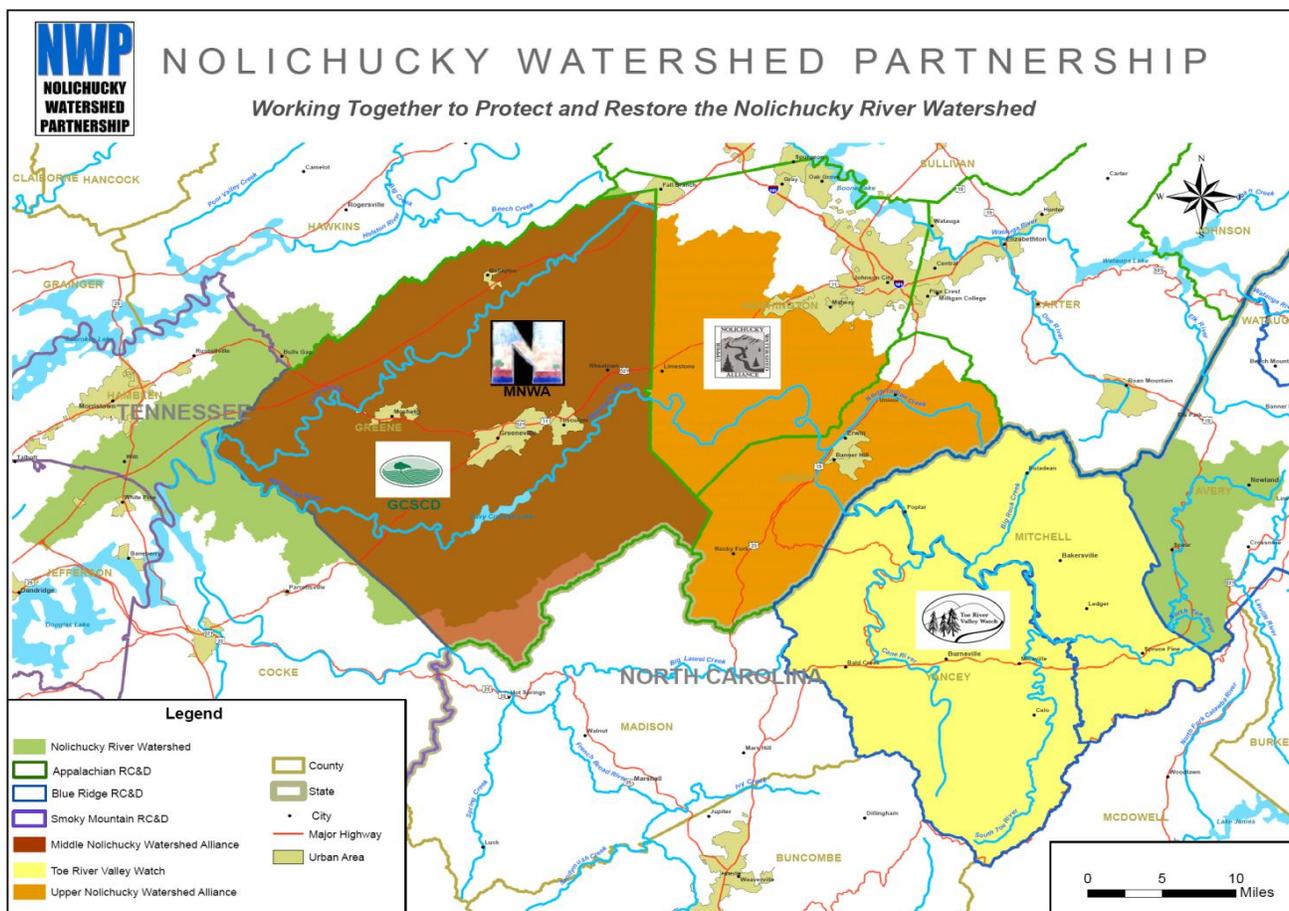


Figure 1. Nolichucky River Watershed Map.

The Nolichucky River Watershed lies within two Level III ecoregions (Blue Ridge Mountains and Ridge and Valley) and contains eight Level IV sub-ecoregions. Several reaches of the Nolichucky River and numerous tributaries are included on the EPA 303(d) list for siltation and habitat alteration. In Greene County alone, approximately 56 of the 85 named streams have all or part of the stream listed on the most recent 303(d) list. A TMDL was developed for siltation, and approved by the EPA, for the Nolichucky River in February 2008. The river is also listed for resource extraction including extraction of sand and gravel.

## Causes and Sources of Nonpoint Source Pollution

Nolichucky River and its tributaries are listed in the 2008 303(d) list (Pages 62 through 70) as follows:

**Waterbody ID:** TN06010108 with extensions

**Length of impaired stream:** approximately 90 miles in TN, plus numerous tributaries.

**Cause of Impairment:** Primary cause loss of biological integrity due to siltation, with a High Priority

**Source of Pollution:** Land development, agricultural practices and discharges from MS4s

**Stream Category:** 5 (one or more uses impaired)

The upper section of Nolichucky River in TN suffers primarily from siltation coming from the North Carolina side of the mountains, predominately from resource extraction, but also has its own problems from stream alterations and agricultural uses.

Further downstream, in Washington County, causes of nonpoint source pollution include vegetable crops

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grown along the river in the flat areas. In July 2009, a significant fish kill occurred in Washington County caused by runoff from a recently sprayed vegetable field. This particular farm had no grassed waterways or grade structures to properly manage stormwater runoff or agricultural chemicals. This cause of nonpoint source pollution is prevalent in the vegetable growing areas of Washington, Greene, Cocke, and Hamblen Counties.

Washington, Greene, Cocke, and Hamblen Counties also have significant problems resulting from other poor agricultural practices, especially cattle accessing streams. Additionally, the towns of Erwin, Johnson City, Jonesborough, Greeneville, and Morristown contribute to polluted runoff from urban sources such as streets, parking lots and roofs. Other smaller towns and populated areas contribute pollutants from urban runoff.

### **BMPs, Educational Activities and Budget**

The proposed watershed-based plan for the Nolichucky River consists of three components:

- 1) Develop a strategic plan which will serve as a guidance document for restoration of the Nolichucky River Watershed.
- 2) Develop a comprehensive educational outreach program for the watershed, including a high-quality educational outreach video and distribution plan.
- 3) Build institutional capacity of the Nolichucky Watershed Partnership as a self-sustaining comprehensive watershed alliance advocating for the restoration of the Nolichucky River Watershed and conduct stakeholder outreach.

The Nolichucky River is considered a priority river by the Environmental Protection Agency and this proposed plan will effectively lay the groundwork for raising the awareness of the water quality problems in the Nolichucky River and for developing a coordinated effort for implementing restoration efforts in the Nolichucky River Watershed. Every effort will be made to involve local, regional, state, and federal agencies in this watershed-based plan. This plan will be maintained as a working document and as additional strategies are developed or new information is obtained, the plan will be updated as needed.

MNWA will focus on carrying out the actions discussed in this plan along with help from the stakeholder partners involved, including local, county, regional, state, and federal agencies and colleges and universities.

A five-minute video that was produced in early 2009 using USFWS funds will be expanded to include more specific examples the causes and solutions of nonpoint source pollution and gather input from the partnering organizations in this effort. This video can be viewed at [www.middlenolichuckywatershedalliance.org](http://www.middlenolichuckywatershedalliance.org) at the upper right tab marked "NWP."

Mapping of known problem areas of the watershed using available geographic information system (GIS) data will be an early component of this effort. A series of stakeholder meetings will be held throughout the watershed and local stakeholders will be invited to participate in the process of problem identification and solution development. County and municipal government officials will be encouraged to participate in these meetings to help them understand the need for changes in ordinances or other regulations which impact water quality and watershed protection. Technical input and review will be solicited from TDEC, TDA, TWRA, USFWS, and USDA to ensure that the strategic watershed plan reflects the expertise and goals of these agencies.

The resulting video and strategic plan will be used to assist local stakeholder groups to acquire appropriate assistance in developing and implementing projects. The educational outreach video that is developed as a part of this plan will be shown at schools and colleges throughout the watershed as well as at the meetings of numerous local organizations including Ruritan Clubs, Rotary Clubs and other

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community, social, and fraternal groups that will share this information with their constituents. Additionally, the video will be aired on local cable access channels and, if possible, local public television affiliates.

This strategic watershed plan is essential to the long range goal to achieve sufficient improvement in the water quality of the many tributaries in the Nolichucky River Watershed such that they begin to meet their designated beneficial uses and are removed from the EPA 303(d) list. The target for at least 10% of the now-listed tributaries on the Nolichucky to be removed from the list by the year 2018.

Since specific BMPs are not included as part of this plan but rather the strategic plan, educational plan, and institutional capacity building are the focus of this watershed-based plan, the following set of tasks is provided.

Tasks	Quantity		Cost/ Unit	Budget Estimate
Data gathering and develop GIS maps	1	ea	\$5,000.00	\$5,000.00
Form working groups and conduct stakeholder problem/solution meetings	6	ea	\$1,000.00	\$6,000.00
Develop strategic watershed plan, draft and final	1	ea	\$10,700.00	\$10,700.00
Outline and storyboards for outreach video	1	ea	\$4,000.00	\$4,000.00
Stakeholder Coord. and video interviews	1	ea	\$8,000.00	\$8,000.00
Editing and preliminary production	1	ea	\$16,000.00	\$16,000.00
Final video production	1	ea	\$6,000.00	\$6,000.00
Revise and update video from comments	1	ea	\$3,000.00	\$3,000.00
Revise and update strategic watershed plan	1	ea	\$2,000.00	\$2,000.00
Duplicate and distribute video and plan	1	ea	\$2,000.00	\$2,000.00
Support capacity building of NWP including quarterly meetings, website, and 501(c)(3) status.	1	ea	\$6,897.00	\$6,897.00
			<b>TOTAL</b>	<b>\$69,597.00</b>

Educational Event	Quantity		Cost/ Unit	Budget Estimate
Showing of completed video	15	ea	\$125.00	\$1,875.00
Mailings and brochures	35	ea	\$50.00	\$1,750.00
			<b>TOTAL</b>	<b>\$3,625.00</b>

<b>Total Budget for Project</b>		<b>\$73,222.00</b>
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### Timeline, Tasks, and Assessment of Progress

Progress toward these milestones will be measured on a monthly basis and adjustments will be made when necessary to keep the overall progress moving toward completion of all planned activities before the conclusion of the contract. A detailed master schedule will be created for each contract year which describes individual tasks, on a monthly basis so that schedule problems can be easily identified and corrected.

It is anticipated this project will be **completed in 2.5 years** after the contract date. The primary tasks to be completed as a result of this effort, along with the respective quarters when the tasks are to be completed, are listed below:

Task or Event	Contract Year		
	1	2	3
<b>Strategic Watershed-Based Plan</b>	<b>X</b>	<b>X</b>	<b>X</b>
Gather data	Q1		
GIS maps of nonpoint source pollution problems and causes	Q2		
Draft of strategic watershed-based plan.	Q3		
Form working groups and conduct stakeholder problem/solution meetings	Q3, Q4		
Stakeholder review of draft of strategic watershed-based plan.		Q3	
Final strategic watershed-based plan.		Q4	
<b>Educational Outreach Plan</b>	<b>X</b>	<b>X</b>	<b>X</b>
Form working groups and conduct stakeholder problem/solution meetings	Q1, Q2		
Outline and storyboards for outreach video	Q3		
Stakeholder coordination and video interviews	Q3, Q4	Q1	
Editing and preliminary production		Q1, Q4	
Final video production			Q1
Video screening			Q2
Revise and update video from comments			Q2
Duplicate and distribute video and plan			Q2
<b>Capacity Building of Nolichucky Watershed Partnership</b>	<b>X</b>	<b>X</b>	<b>X</b>
Hold Quarterly NWP Meetings	Q1-Q4	Q1-Q4	Q1, Q2
Support 501(c)(3) status of NWP	Q2-Q4		
Support development of NWP website	Q2, Q3		

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## Monitoring and Documenting Success

The success of this project will be measured primarily in terms of the results of the three components of this proposed effort:

- 1) Successful completion of a strategic watershed plan which incorporates the input and goals of a broad coalition of stakeholders in the watershed.
- 2) Development of an effective educational outreach plan including the completion and distribution of a high quality educational outreach video.
- 3) The Nolichucky Watershed Partnership (NWP) becomes an institutionally strong, self-sustaining watershed alliance which effectively brings stakeholders together and advocates for the protection and restoration of the Nolichucky Watershed.

Additional measures of success include:

1. The number of individuals and organizations that become engaged in the restoration efforts of the Nolichucky River Watershed through the Nolichucky Watershed Partnership or other means.
2. The implementation of the blueway being planned from Erwin, TN to Douglas Lake, TN.
3. The number of BMPs successfully implemented within the watershed.
4. Municipal ordinances that are developed and/or modified to reduce the effects of stormwater runoff in the MS4 districts.
5. The overall citizen awareness of assets and problems in the watershed.

Additionally, criteria will be defined in cooperation with the TDEC field office which will be used to determine whether substantial progress is being made towards attaining water quality standards and whether modifications will be necessary for this proposed watershed-based plan. The criteria to be defined in conjunction with the TDEC field office is expected to include measurements for sediment including total suspended solids (TSS), nutrients (total nitrogen, ammonia and total phosphorus) and pathogenic bacteria (fecal coli form).