

# Oostanaula Creek Watershed Restoration Plan

## Executive Summary

The US Federal Clean Water Act was amended in 1987 adding Section 319 requiring states to develop restoration or management plans for impaired waterbodies to curb nonpoint sources of pollution. Section 319 also authorizes the EPA to issue federal funds to states to aid in implementing appropriate management programs to address these nonpoint sources. By targeting specific areas and land practices within a watershed, available federal and state cost-sharing funds can be used more efficiently to address known or potential pollution problems and protect water quality. This restoration initiative aims at developing an effective and integrated land management and monitoring approach for community stakeholders, which include local land owners, communities, authorities and resource managers, as they are required to make coherent, informed decisions regarding land resources and their future.

The Oostanaula Creek Watershed (OCW) in McMinn and Monroe Counties of southeast Tennessee covers 44,864 acres of which forest and pasture-based beef operations are the primary land covers surrounding a centrally located urban pocket. Segments of the primary stream running through the watershed are listed as only partially supporting, or not supporting, their designated uses according to the 2006 Tennessee 303(d) list of impaired waterways prepared by the Tennessee Department of Environment and Conservation (TDEC). Sources of impairment include pathogens, sediment and habitat alteration, and phosphorus. Pollution sources include major municipal point sources, surface erosion, pasture grazing, livestock in stream, and discharges from Athen's NPDES-permitted Waste Water Treatment Facility. TDEC has developed and EPA has approved Total Maximum Daily Load (TMDL) reports for Siltation and Habitat Alteration and Pathogens for the Hiwasee River Watershed.

To successfully remove Oostanaula Creek from the Tennessee 303(d) list will require a reduction of 54.2 to 72.2% in *E. coli* loads based on a TMDL for pathogens developed for Hiwasee; a reduction of phosphorus (TP) of 79.2% based on ecoregion reference streams; and based on a TMDL for sediment, a reduction of sediment and siltation by 59.4%. This watershed restoration plan was developed to provide a comprehensive plan for meeting these reduction targets and restoring Oostanaula Creek and its tributaries to fully support their designated uses. The plan focuses on promoting the use of Best Management Practices (BMPs) to reduce siltation from urban and agricultural sources, pathogens from livestock sources, and phosphorus from urban sources. Model results from a TVA developed land use analysis and pollutant loading model will be used to determine priority areas and post-plan pollutant fates and volumes.

The municipality of Athens, with a 2006 population estimate of over 14,000, is nested near the center of the watershed and is rapidly growing. A population increase of 20% is projected through 2025, leading to many rural areas becoming urbanized. Traditional agriculture issues and pollutants (e.g. soil erosion) are giving way to construction and urban runoff impacts. As residential and commercial growth continues to encroach on agriculture land of east Tennessee, local officials and residents will need to establish water quality control measures for both agricultural and urbanization problem areas. Athens and McMinn County are still in the early phases of responding to growth and development pressures. There is thus a tremendous opportunity to further existing efforts in implementing smart growth principles and policies that will help strengthen those attributes of the region so valued by residents. To meet these challenges, the OCW will need to focus particular attention on: 1) preventing pollution from occurring, 2) reducing the amount of runoff and pollutants, 3) intercepting runoff and pollutants prior to entering the creek, and 4) promoting public participation and enforcement.

In support of TMDL implementation, effective partnerships have been forged to address various agricultural and urban components of an implementation plan. Through cooperative efforts, much of the essential groundwork has been laid for a multi-faceted approach to restoration, of which this plan is a key component. With support from various state and federal sources, the project has offered technical and financial resources for over 65 best management practices, or BMPs, to be installed and/or implemented since 2000. Additionally, several local outreach activities and materials have already been developed promoting the restoration campaign.

Spanning 15 years broken into three Phases, this plan proposes Goals, Objectives, and specific Tasks to achieve the targets set forth by the state. Tasks include streambank stabilization, livestock exclusion fencing, sediment trapping devices, NPDES monitoring, among others and are spearheaded by an extensive outreach campaign. Total estimated financial need for the Oostanaula Watershed Restoration effort is \$2,032,636, with 96% of this going towards on-the-ground BMP installation and implementation. Apart from simply implementing land or water BMPs, it is imperative that this restoration plan brings about changes in existing practices, vision, objectives and principles of individuals living within or making decisions for the watershed. The remaining 4% of the proposed budget is intended for education and outreach activities and materials.

At the conclusion of Phase 1, notable milestones include reductions of 10% in pathogen levels, 25% in TP levels, and 10% in soil losses. Phase 2 milestones include reductions of 50% in pathogens, 75% on TP levels, and 50% in soil losses. Included in Phase 2 milestones is a public participation rate of over 15%. It is acknowledged, however, that there is a need to reassess BMPs, outreach activities and even reduction targets as this restoration initiative gets underway.

As such, this restoration plan should be considered a blueprint for improvement with room for evaluation and adjustment. It is believed that through the implementation and installation of the proposed tasks and BMPs that these numeric goals may be achieved at the times suggested.