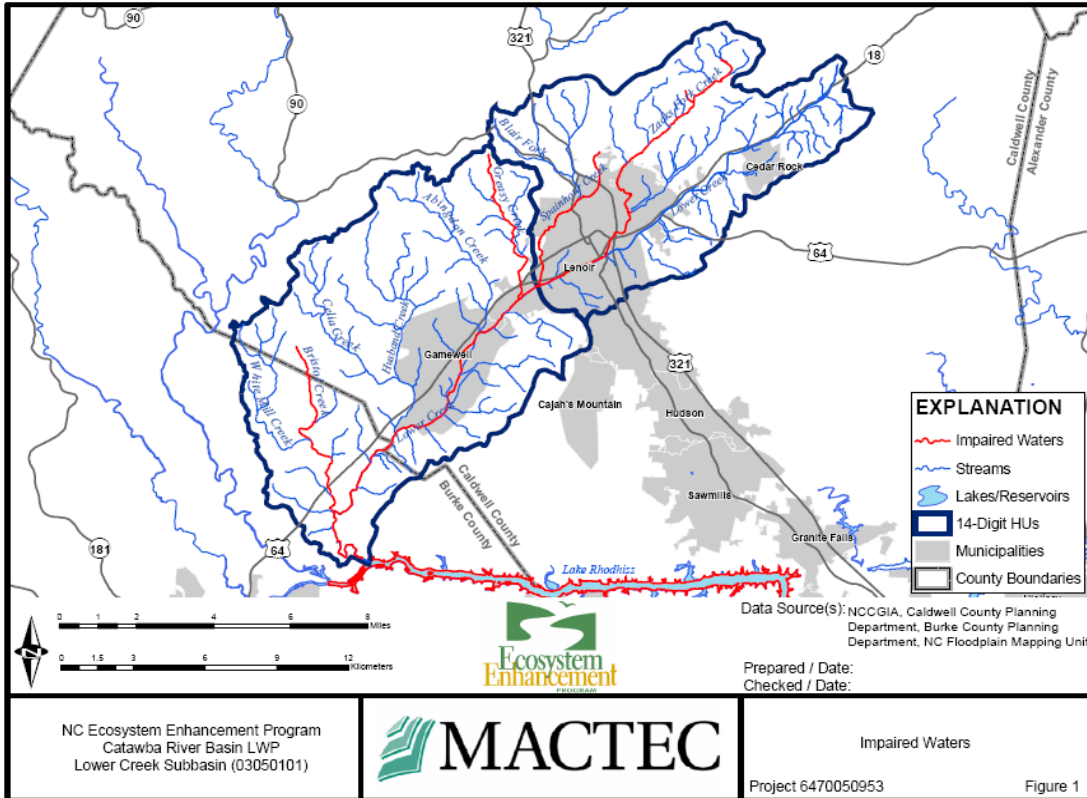


**LOWER CREEK WATERSHED MANAGEMENT PLAN
EXECUTIVE SUMMARY
NC Ecosystem Enhancement Program**

In 2003, the North Carolina Ecosystem Enhancement Program (EEP) began its local watershed planning effort in the Lower Creek watershed, which drains 98 square miles in Caldwell and Burke Counties. Its objectives were to (1) perform a detailed assessment of watershed conditions, identifying key stressors for stream health, and (2) develop a comprehensive strategy to restore and preserve stream integrity. In order to make the plan useful to the local community, EEP worked with a Technical Advisory Committee, made up of local planning and natural resource staff, who reviewed detailed watershed assessment work and helped to develop management recommendations.

The Lower Creek watershed was divided into 29 subwatersheds. It is characterized by three distinct areas—a rural northern area, typified by agricultural activities, low density residential use, and steep, forested headwaters; a central urban area of Lenoir, characterized by high impervious cover and a mix of industrial, commercial, and residential use; and a rural southern area, which has a mix of agricultural, low density residential, and forested land uses. Lower Creek itself and four of its tributaries—Zacks Fork, Spainhour Creek, Greasy Creek, and Bristol Creek—are on the 303(d) list of impaired waters. In addition, Lower Creek’s receiving water, Lake Rhodhiss, is on the draft 2006 303(d) list due to issues related to high nutrient levels (see Figure 1).



Watershed assessment activities included biological, chemical, and toxicological monitoring of water quality for 303(d) listed streams and their degraded tributaries, assessment of channel stability and habitat, and Geographic Information System (GIS) data development and analysis. These data were analyzed to (1) characterize 303(d) listed streams and their degraded tributaries, (2) summarize functional integrity (or health) of streams on a subwatershed scale, and (3) determine key stressors for watershed streams.

Key stressors for streams in the Lower Creek watershed and management strategies to address them are listed in the Table 1.

These management strategies address known stressors for the Lower Creek watershed using a combination of stream and wetland restoration, institutional measures, best management practices (BMPs), and stressor-specific solutions. In order to improve degraded streams and reduce the Lower Creek watershed’s impacts on Lake Rhodhiss, it is essential for multiple stakeholders—State, County, and local governments, natural resource programs, land trusts, and local citizens—to participate in a coordinated strategy for watershed restoration.

Table 1: Key Stressors for Watershed Streams and Applicable Management Strategies

Stressor	Management Strategy
Stream bank erosion	Stream restoration, riparian buffers, livestock exclusion, sand dredging BMPs
Lack of adequate forested buffer	Stream restoration, riparian buffers
Stream channelization	Stream restoration
Impervious cover	Stormwater BMPs, stormwater ordinance, low impact development
Upland erosion	Agriculture & forestry BMPs, erosion and sedimentation control ordinance, subdivision ordinance modifications, steep slope ordinance, public education
Livestock access to streams	Livestock exclusion
Floodplain development	Floodplain development ordinance
Urban toxicants	Illicit discharge program, landfill strategy, watershed education program, stormwater BMPs
Nutrients	Illicit discharge program, ag BMPs, riparian buffers, watershed education program, stormwater BMPs, additional studies
Fecal coliform bacteria	Retrofit wastewater collection system, agricultural BMPs, illicit discharge program, watershed education program, stormwater BMPs

Institutional measures. Ordinances, regulations, codes, and other instruments should be revised or developed by Lenoir, Gamewell, and Burke and Caldwell Counties to minimize negative impacts of development and other land use activities. The following measures are highly recommended:

1. Adopt the Lower Creek *Watershed Management Plan* as a supplement to comprehensive plans.
2. Develop comprehensive stormwater management ordinances
3. Amend subdivision ordinances to promote Low Impact Development and other measures that limit development impacts
4. Adopt and enforce more comprehensive riparian buffer ordinances
5. Monitor compliance with and enforcement of erosion and sedimentation control ordinances
6. Develop steep slope ordinances
7. Amend ordinances to prohibit development in the 100 year floodplain
8. Develop a robust public education program
9. Adopt a comprehensive watershed-based land use plan for the Lower Creek watershed to protect Lake Rhodhiss

Best management practices (BMPs). BMPs are essential to reduce the impacts from a number of existing land use activities. Of special concern for the Lower Creek watershed are stormwater impacts from development, sedimentation impacts from logging, and pollution and stream bank erosion from agricultural uses. This Plan lists specific BMPs to control these impacts.

Stream and wetland restoration, preservation, and stormwater BMP projects. This Plan prioritized subwatersheds for restoration, preservation, or stormwater BMP activities based on functional integrity, degree of imperviousness, number of possible projects, and TAC recommendations. A set of 38 primary projects were identified within priority subwatersheds and include:

- 4 **Stream Preservation** sites, totaling 81,500 linear feet, or 15.4 miles
- 22 **Stream Restoration** sites, totaling 73,000 linear feet (post-construction), or 13.8 miles
- 2 **Wetland Preservation** sites, totaling 74 acres
- 3 **Wetland Restoration** sites, totaling 135 acres
- 3 combined **Wetland/Stream Restoration** sites, totaling 97 acres and 4,980 linear feet
- 4 **Stormwater BMP** sites, totaling 56 acres of BMP structures (ponds/basins; constructed wetlands; bioretention areas; permeable pavement)

These primary projects are described in detail in Appendix A, the *Project Atlas*. EEP will pursue the restoration projects to fulfill its mitigation targets; stormwater BMP and preservation projects may be pursued by EEP in the future. However, EEP cannot implement all projects (whether prioritized or not) needed to address stream degradation in the Lower Creek watershed; local groups and governmental entities are encouraged to pursue restoration, preservation, and stormwater BMP projects, as well.