Summary of Findings and Recommendations for the Lower Creek Local Watershed Plan

The Lower Creek Local Watershed Plan (LWP) area is 99 square miles and is located in Burke and Caldwell Counties, including the towns of Lenoir and Gamewell. This watershed is in the foothills of the Southern Appalachians, includes the hydrologic units 03050101080010, 03050101080020, and is characterized by both rural and urban landscapes. Most streams in the LWP area are classified as C waters, but the downstream fourth of Lower Creek and its tributaries are Water Supply IV. Agriculture, residential development, and the furniture industry are major economic drivers of the area. Lower Creek and its receiving body, Lake Rhodhiss, are on North Carolina's 2006 303(d) list of impaired waters. Zack's Fork, Greasy Creek, Bristol Creek, and Spainhour Creek are major tributaries within the Lower Creek watershed, and are also on the 303(d) list. Lower Creek and its tributaries have been on the 303(d) list since 2000 and are all impaired due to impaired biological integrity; Lower Creek is also impaired due to violations of the turbidity standard.

The local watershed planning effort began in 2003 and was completed in 2006. It was a three-phased effort, including a preliminary watershed characterization, detailed watershed assessment, and development of plan recommendations. Its objectives were to (1) perform a detailed assessment of watershed conditions, identifying key stressors for stream health especially for 303(d) listed streams, and (2) develop a comprehensive strategy to restore and preserve stream integrity. A broad group of planning and natural resource professionals, the Lower Creek Technical Advisory Committee, met frequently to oversee the plan's progress and develop recommendations. This group was composed of representatives of Lenoir, Gamewell, Caldwell and Burke County planning departments, Division of Forest Resources, Caldwell County Cooperative Extension service, Natural Resources and Conservation Service, Caldwell County Pathways, Carolina Land and Lakes Resource Conservation and Development, Foothills Conservancy, Duke Power, NC Wildlife Resources Commission, Burke County Soil and Water Conservation District, NC Division of Water Quality, and Western Piedmont Council of Governments,

Intensive field monitoring and GIS assessment pinpointed major causes of degradation for watershed streams. Streams flowing through Lenoir, including Lower Creek, Zack's Fork, Blair Fork, and Spainhour Creek, are impacted by a suite of urban stressors, including toxicants, high levels of fecal coliform bacteria, nutrients, channelization, and stormflow scour resulting from high levels of impervious cover. Rural streams were impacted by excess nutrients from agricultural operations and widespread habitat degradation caused by stream channelization, excess sedimentation from stream bank erosion and upland erosion, and lack of adequate forested buffer.

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 watershed stressors and management strategies for the Lower Creek watershed

Stressors and Issues	Management Strategies
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