

**STATE OF GEORGIA**  
**TIER 2 TMDL IMPLEMENTATION PLAN**    **REVISION 1**  
Pine Log Creek  
Coosa River Basin  
April 28, 2006

Gordon, Bartow, Cherokee Counties

**I. INTRODUCTION**

Total Maximum Daily Load (TMDL) Implementation Plans are platforms for evaluating and tracking water quality protection and restoration. These plans have been designed to accommodate continual updates and revisions as new conditions and information warrant. In addition, field verification of watershed characteristics and listing data has been built into the preparation of the plans. The overall goal of the plans is to define a set of actions that will help achieve water quality standards in the state of Georgia.

This implementation plan addresses the general characteristics of the watershed, the sources of pollution, stakeholders and public involvement, and education/outreach activities. In addition, the plan describes regulatory and voluntary practices/control actions (*management measures*) to reduce pollutants, milestone schedules to show the development of the management measures (*measurable milestones*), and a monitoring plan to determine the efficiency of the management measures.



**Table 1. IMPAIRMENTS**

IMPAIRED STREAM SEGMENT	IMPAIRED SEGMENT LOCATION	IMPAIRMENT	TMDL ID
Pine Log Creek	Cedar Creek to Salacoa Creek	Fecal Coliform Bacteria	CSA0000060
Pine Log Creek	Bartow and Gordon Counties (EPA)	Biota (Sediment)	CSA0000059

## II. GENERAL INFORMATION ABOUT THE WATERSHED

Write a narrative describing the watershed, HUC 10 #0315010207. Include an updated overview of watershed characteristics. Identify new conditions and verify or correct information in the TMDL document using the most current data. Include the size and location of the watershed, political jurisdictions, and physical features which could influence water quality. Describe the source and date of the latest land cover/use for the watershed. Describe and quantify major land uses and activities which could influence water quality. See the instructions for more information on what to include.

---

### General Information About the Watershed, HUC 10 #0315010207

**Pine Log Creek** lies northwest of Atlanta, Georgia in Bartow (9.2 miles) and Gordon Counties. It drains an area north of Cartersville and joins with Salacoa Creek before it discharges into the Oostanaula River upstream of Calhoun, Georgia. The creek lies in the Southern Shale Valley Ecoregion (67g). The ecoregion is characterized by undulating to rolling valleys and low, rounded hills.

**Pine Log Creek** is listed by EPA for Biota/sediment. The stream segment begins in Gordon County and flows into Bartow County.

Pine Log Creek was sampled at Boone Ford Road by a 2001 sampling team (EPD, 2004). A physical habitat survey indicated obvious habitat concerns including poor bank stability, excessive sedimentation, lack of stream bank vegetation, and poor buffer vegetation.

**Pine Log Creek Segment** from Cedar Creek to Salacoa Creek is located in southern Gordon County and is listed for Fecal Coliform bacteria.

Land use in the watershed is mixed and includes forested, agriculture, pasture and urban areas. Land use is predominately forest (59,349 acres, 73.1 % of the total watershed); pasture/hay (15,822 acres or 19.5%); row crops (3,368 acres or 4.1%); transitional (2,153 acres or 2.7%); and small portions in other grasses, open water, high intensity commercial/industrial/transportation, high intensity residential, and woody wetlands (EPA, 2004). The data on land use are taken from EPA publication *Total Maximum Daily Load (TMDL) for Sediment in Tallapoosa and Coosa River Basins* (2004). This is the most recent land use data available for this watershed. New land use data will be collected for the 2007 Bartow and Gordon Counties Comprehensive Plans and can be used as an update to this plan.

Pine Log Mountain Wildlife Management Area lies to the south of this watershed. It is privately owned; hunting rights are leased to the Georgia DNR (Region 1 Wildlife Management) who oversees habitat conditions in the area.

The Georgia DNR stocks Pine Log Creek with trout in Gordon County twice each fishing season prior to July 4<sup>th</sup> (GADNR, 2006).

### Relevant Watershed Planning and Management Activities

**Erosion and Sedimentation Program:** Gordon, Cherokee and Bartow Counties are Local Issuing Authorities for E & S permitting of land-disturbing activities which are required to submit an NOI under the NPDES General Permit for Construction Activity.

Bartow County revised its E & S Control ordinance in 2002. It meets current Georgia E & S requirements. This ordinance applies to land disturbing activities on one acre of land or more. It is administered by the Bartow County Engineer through the Planning and Zoning Department. It is currently being reviewed and updated to include recommendations developed by a regional habitat conservation plan, the Etowah Habitat Conservation Plan. The Etowah Habitat Conservation Plan is a joint effort of municipalities, water authorities, developers, industry, the University of Georgia, Kennesaw State University, Georgia DNR, the US Fish and Wildlife Service, and others in the Etowah River watershed to protect threatened and endangered species of darter by developing a regional conservation plan. The plan allows included jurisdictions to be in compliance with the Federal Endangered Species Act and to obtain an Incidental Take Permit from the US Fish and Wildlife Service for development activities. Additionally the County is currently reviewing and updating all regulations and processes in its development code.

According to the Bartow County Watershed Assessment and Protection Plan, there are six standard operating procedures required of local governments for erosion and sediment control. These include a bonding program for workers, a requirement for semi-monthly reporting, weekly county inspections at each site, addition of erosion and sedimentation to the building inspectors' checklist, two required pre-construction meetings with site planner and crew, and lastly, the designation of an on-call erosion and sedimentation expert for the project. Some of these requirements may be revised in light of the recent erosion and sedimentation certification requirements.

The Bartow County Zoning Ordinances require a stream buffer of a minimum of fifty feet on each side. Access is allowed to the stream for livestock watering but must be constructed with Best Management Practices (BMPs) to minimize pollution and sedimentation to the stream.

Gordon County revised its E & S Control ordinance in 2001. It meets current Georgia E & S requirements and applies to land disturbing activities on one acre of land or greater or those within 200 feet of the bank of any state water. It is administered by the Gordon County Code Enforcement Officer. Agriculture and forestry are excluded. The E & S Ordinance establishes a twenty-five foot buffer along all waters of the state and a fifty-foot buffer along trout streams; it establishes practices to protect buffers along these streams. Requires stormwater management structures.

House Bill 285 requires state certification in E & S Control for anyone involved in the following activities: land development, design, review, permitting, construction, monitoring, inspection, or any land-disturbing activity in Georgia (Georgia Soil and Water Conservation Commission, 2005). This certification is done through training by the Georgia Soil and Water Conservation Commission in consultation with Georgia Environmental Protection Division and the Stakeholder Advisory Board. The GSWCC also has updated requirements for E & S Control plans to be submitted with each project. Certification requirements apply to all such persons in Bartow and Gordon counties. Certification is offered through the Rolling Hills Regional Conservation and Development Council (RC & D) for Bartow County and through the Limestone Valley RC & D for Gordon County, and through the University of Georgia.

Bartow County Board of Tax Assessors is considering a tax relief program for property owners who place conservation easements on all or part of their properties, especially for greenspace on timberland.

### **Department of Natural Resources Best Management Practices**

The Department of Natural Resources, Wildlife Management Division provides outreach to landowners on prevention of soil erosion and sedimentation from land-disturbing activities contributing to habitat destruction, advises landowners of best management practices and habitat

development for increased wildlife on their property, and encourages landowners to implement conservation practices on their lands through the NRCS. The DNR also stocks Pine Log Creek with trout four times a year, once in March and once before each summer holiday, in Gordon County.

### **Georgia Forestry Commission Best Management Practices**

The Forestry Commission has implemented best management practices on its lands to reduce sedimentation and erosion from silviculture practices. The Georgia Forestry Commission also provides education, technical and financial assistance through cost-share programs to private landowners especially in the Forestland Enhancement Program, a part of the 2002 Farm Bill. Ongoing Georgia Forestry Commission activities include the following programs.

- Federal Clean Water Act Section 404: GFC received referrals from EPA for compliance determinations in situations involving forestry. It requires normal ongoing agricultural and silvicultural practice to adhere to BMPs and 15 baseline provisions for road construction and maintenance in and across waters of the US including lakes, rivers, perennial and intermittent streams, wetlands, sloughs in order to qualify for the exemption from the permitting process.
- Georgia's Best Management Practices: A GFC program to inform landowners, foresters, timber buyers, loggers, site preparation and reforestation contractors, and others involved with silvicultural operations about common-sense, economical, effective practices to minimize nonpoint source and thermal pollution. GFC encourages and monitors compliance and conducts a complaint resolution program.
- Georgia Forestry Commission Monthly BMP Assurance Examination: In an effort to document "reasonable assurance" that water quality will be proactively protected during regular ongoing silvicultural operations, the GCF will offer a monthly BMP assurance examination of active sites. All active or ongoing sites will be identified either through monthly air patrol flights, courthouse records, riding the roads, notification or by landowners. Sites located within watersheds of specific biota (sediment) impaired streams will be given a higher priority to identify and conduct examinations.
- Memo to the Field: Application of BMPs to mechanical silvicultural site preparation activities for the establishment of pine plantations in the Southeast (Silviculture). Although overseen by the EPA/ US Army Corps of Engineers, cases are normally referred to GFC to make the initial determination. It identifies certain bottomland hardwood wetlands that should be subject to permitting if converting to pine plantations.

### **Gordon County Municipal Ordinances**

The Gordon County Planning and Development Ordinance was adopted in 1997 and revised in 2004; it includes regulations for stormwater management, river corridor protection, and wetlands protections. Section 11-129, Stormwater Management, includes stormwater regulations to govern the location and size of the separate stormwater management and drainage structures including catch basins, piping culverts, retention structures, and drainage easements. Requirements are based on a 25-year flood event.

The Gordon County River Corridor Protection Ordinance (Article V, Sections 11-251 to 11-257) was adopted in 2004 and regulates growth along three protected rivers, the Conasauga, Coosawattee and Oostanaula Rivers. Management measures are specified in the Gordon County River Corridor Protection Plan. Buffers of 100 feet are set along these rivers, with qualified exemptions for forestry and agriculture.

The Gordon County Wetlands Protection Ordinance (Article VII, Sections 11-351 to 11-360) was adopted in 2004 to protect wetlands from disturbance. Exempted activities are forestry, agriculture, and recreational activities, with qualifications.

Gordon County's Floodplain Ordinance is being revised.

Gordon County's litter ordinance was adopted in 1992. The Gordon County Zoning Ordinance was adopted in 1997 and revised in 2005 to include the Planned Residential Development to create and conserve open space recreational and greenway areas within new development.

#### **Metropolitan North Georgia Water Planning District Model Ordinances**

**Bartow County** is a member of the Metropolitan North Georgia Water Planning District which was created by the Georgia General Assembly to establish policy, create plans and promote intergovernmental coordination of all water issues in the area from a regional perspective. Bartow County is included in the Metropolitan Water Planning District's Watershed Management Plan, which includes six protection strategy areas:

- Point Source Management
- Storm Water Management
- Total Maximum Daily Loads (TMDLs)
- Watershed Improvement
- Intergovernmental Coordination
- Long-term Monitoring

The MNGWPD Watershed Management Plan required each member to adopt these six model ordinances:

- Ordinance for Post-Development Stormwater Management for New Development and Redevelopment
- Floodplain Management/Flood Damage Prevention Ordinance (in review)
- Conservation Subdivision/Open Space Development Ordinance
- Illicit Discharge and Illegal Connection Ordinance
- Litter Control Ordinance
- Stream Buffer Ordinance

Bartow County has not adopted the District's Floodplain Management/Flood Damage Prevention Ordinance, as it is being reviewed by the District. Bartow's current flood plain ordinance meets national flood insurance requirements and was revised as of 2000.

Existing floodplain management ordinances will be revised as counties participate in updating their flood hazard regions through the National Flood Plain Insurance Program/ Georgia DNR Floodplain Management Office Flood Map Modernization Program.

Bartow County has adopted the Metro North Georgia Water Planning District's model stormwater ordinance as revised by the Etowah HCP. The County is in the process of coordinating other existing ordinances with review of the Etowah HCP. Yet other revisions and ordinances dealing with runoff limits, road and utility crossings, are still being developed by the Etowah HCP.

#### **Bartow County Watershed Assessment and Protection Plan**

Between 1990 and 2000 Bartow County experienced a 36% growth rate; subsequently the County began the Bartow County Growth Management Plan, completed in 1997, which was based on input from local residents and economic development experts and which suggested specific growth management strategies including expansion of water and wastewater treatment operations.

In 2000 Bartow County contracted with Kennesaw State University to conduct a watershed assessment for the County's NPDES Phase I permitting process for existing wastewater treatment plants. This assessment indicated that overall, streams in Bartow County were in "moderately good condition relative to other systems in the Atlanta metropolitan area (KSU, 2001)." However, the report pointed out that fecal waste among other impairments was present in individual streams including Lower Pumpkinvine Creek, Lower Stamp Creek, Salacoa Creek, Lower Euharlee Creek, Upper Two Run Creek, Upper Petit Creek, Cedar Creek, Pine Log Creek, and Richland Creek (KSU, 2001). Some of these creeks were placed on the 2004 303 (d) impaired streams list for fecal coliform bacteria.

Bartow County is considering expansion of the Bartow County Wastewater Treatment Plant in 2006-2007 and has conducted a county watershed assessment and developed the Bartow County Watershed Protection Plan as part of its expansion process to meet NPDES Phase II permitting standards. The watershed assessment results relate directly to the TMDL initiative.

Bartow County's Watershed Assessment and Protection Plan strategies were developed according to the Metropolitan North Georgia Water Planning District (District) Water Management Plan of 2003. The protection plan strategies include point source management, storm water management, the Total Maximum Daily Load initiative, watershed improvements, intergovernmental coordination and long-term monitoring. These strategies are covered as part of the District's Water Management Plan as well as the TMDL implementation plans; the NPDES Phase II for MS4's also requires implementation of the majority of these strategies.

### **Bartow County Stormwater Management**

Bartow County has an NPDES-permitted Small Municipal Separate Storm Sewer System (MS4) and is subject to the Phase II Stormwater Rules. These extended Phase II permitting rules include six parameters that deal with water quality including 1. Public Education and Outreach; 2. Public Participation and Involvement; 3. Illicit Discharge Detection and Elimination; 4. Construction Site Runoff Control; 5. Post-Construction Runoff Control; 6. Pollution Prevention and Good Housekeeping.

The Bartow County Director of Planning and Zoning provides comprehensive stormwater awareness training through the Bartow County Homeowner's Association.

### **2002 Farm Bill, US Department of Agriculture Natural Resources Conservation Service and Farm Service Agency**

The Farm Security and Rural Investment Act of 2002 (Farm Bill 2002) funded conservation practices for farmers and ranchers with a focus on environmental issues by making existing programs simpler as well as funding new programs. The 2002 Farm Bill enhances the long-term quality of our environment and conservation of our natural resources. This bill provides several opportunities for receiving grants to improve water quality. These include the following programs administered by the US Department of Agriculture, Natural Resources Conservation Service and Farm Service Agency.

- The Federal Farm Bill (Swampbuster Ag) prohibits landowners participating in federal price support programs from converting forested wetlands to agriculture.
- The Water Bank Act preserves, restores and improves wetlands of the Nation and thereby conserves surface waters to preserve and improve habitat for migratory waterfowl and other wildlife resources to retire lands not in agricultural production to enhance the natural beauty of the landscape and to promote comprehensive and total water management planning.

- The Conservation of Private Grazing Land Program will offer technical assistance opportunities for better grazing land management. Projects for improving water quality include: protecting soil from erosive wind and water; conserving water; providing habitat for wildlife; sustaining forage and grazing plants. This is not a Cost-Share Program.
- Conservation Security Program (CSP) is the first program that rewards farmers and ranchers for high levels of environmental stewardship. Producers on cropland, orchards, vineyards, pasture and range may apply for CSP regardless of size, type of operation, or crops produced. Land in other cost share programs is not eligible. CSP will first be offered in watersheds with greatest potential for improving water quality, soil quality and grazing land condition.
- Environmental Quality Incentives Program (EQIP) is a voluntary program that provides technical and cost share assistance for protection of ground and surface water, erosion control, air quality, wildlife habitat, and plant health. It is a 50% cost share with possible additional incentive payments.
- Wetlands Reserve Program (WRP) provides technical and financial assistance to landowners to enhance wetlands degraded by farming or draining. There are three options with WRP to receive funds that have differing time agreements and easements resulting in different cost share. In all programs participants control access to the land, may lease or use land for hunting, fishing, and other passive recreational activities.
- The Conservation Reserve Program (CRP) provides technical assistance, rental payments and cost share funding to address specific natural resource concerns including: protection of ground and surface waters, soil erosion and wildlife habitat. An annual rental payment is given for land taken out of production and 50% cost share for practice installation.

The USDA Natural Resources Conservation Service in Gordon County works with farmers to develop and implement conservation best management practices on their operations. The Environmental Quality Incentives Program (EQIP) program is one such method. Many applications for the 2006-2007 fiscal year are being processed. Often, applications for best management practices through these programs exceed funding capability of the program. EQIP is a voluntary program that provides technical and cost-share assistance for protection of ground and surface water, erosion control, air quality, wildlife habitat, and plant health through the federal Farm Bill (2002). EQIP provides a 50% cost share with a possibility of additional payments.

### **Coosa River Basin Modeling Project (Georgia DNR EPD)**

Georgia DNR EPD and USEPA are in the process of conducting a monitoring project to study the accuracy of the model developed for the Coosa River Basin. Monitoring is ongoing in 2005-2006 on the Coosa River and its tributaries. Data will be incorporated into the Total Maximum Daily Load (TMDL) for dissolved oxygen. The Coosa River Modeling work will be done by the Georgia DNR EPD in 2006 and 2007. A final model will link the Coosa River model and the Lake Weiss model. The combined models will evaluate oxygen demanding loads, nutrient loads, and temperature effects for heat loads, on dissolved oxygen (DO) concentrations in the Coosa River. The following data will be collected on the Salacoa after Pine Log Creek converges and prior to its confluence with the Coosawattee in separate modules:

- Watershed flow and temperature data
- Continuous water quality monitoring
- Water quality sampling
- Chlorophyll *a* sampling
- Wastewater treatment facility sampling and data collection (module 5)
- DO and temperature depth profiles

- Basin-wide phosphorus data
- Specialized studies
  - Reaeration measurements
  - Sediment Oxygen Demand measurements
  - Long-Term Biochemical Oxygen Demand (BODs)
  - Dye studies

Data collected on the Salacoa after Pine Log Creek converges prior to its confluence with the Coosawattee in separate modules will be as follows:

**Module 1: Watershed Flow and Temperature Data.** This module includes the installation and annual operation and maintenance of watershed stream flow gages with temperature recorders, for two years. The data from these gages will be used either directly as model input or to estimate tributary input data for ungaged streams (Georgia DNR EPD).

**Module 2: Continuous Water Quality Monitoring.** This module includes continuous water quality monitoring for dissolved oxygen, temperature, conductivity, pH, and depth, downstream from Carters' Dam to collect upstream boundary condition data to include in EPD RIV-1 (Georgia DNR EPD).

**Module 3: Water Quality Sampling.** This module includes the collection and analysis of discrete water quality samples at locations on the Coosa River mainstem and tributaries from Allatoona Dam on the Etowah River, Carters Lake on the Coosawattee River, and the USGS Eton gage on the Conasauga River to the George/Alabama State Line. The samples will be analyzed for carbonaceous and total BOD<sub>5</sub> (inhibited and uninhibited), DO, temperature, TKN, NH<sub>3</sub>, NO<sub>2</sub>-NO<sub>3</sub>, total phosphorus, ortho-phosphate, TOC, conductivity, and pH. Flow measurements will be made at the time of sample collection (Georgia DNR EPD).

**Module 4: Chlorophyll A.** This module includes continuous chlorophyll monitoring and periodic data collection on mainstem and tributaries of the Coosa River Basin to calibrate river and lake models (Georgia DNR EPD).

**Module 8: Special Studies.** This module includes several specialized studies including reaeration, sediment oxygen demand (SOD), long-term BOD tests, and dye studies. River, tributary and selected wastewater treatment plant effluent samples will be collected for long-term BOD analysis during the field surveys. Long-term BOD analyses will include periodic testing of nitrogen components to determine possible nitrification reactions. Aged river water will be used as dilution water, when necessary. Samples will be collected and analyzed from each location for both monitoring years (Georgia DNR EPD).

### **Other Watershed Activities**

The Northwest Georgia Regional Water Resources Partnership was created in 2002 to provide education, funding, and implementation help for watershed assessments, water supply studies, and stormwater management plans, and to serve as coordinator for regional planning response to state comprehensive water management plans. Gene Camp, Bartow County Water Department Superintendent, and Kelly Cornwell, City of Calhoun Director of Utilities, serve on the partnership's executive committee. The Partnership is planning a district-wide watershed assessment and protection plan, which if individual municipalities participate, will provide a cost-effective base-level assessment on which each county can address specific areas of concern.

The Gordon County Extension Service was active in working with broiler growers operating a dry manure poultry operation under the Animal Feeding Operation requirements to complete Comprehensive Nutrient Management Plans and submit NPDES Form 2B for EPD approval between 2003 and 2005. Extensive education and outreach efforts were done by the Extension Service throughout the Bartow, Gordon, and Floyd areas (Moraitakis, 2005).

The Limestone Valley Resource Conservation and Development Council serves as a regional effort to conserve natural resources. Counties included in its area of service include Gordon, Pickens, and Cherokee Counties among others. Projects done through Limestone Valley include the No-Till Program, the Georgia Better Back Roads Program, and the Conasauga River Alliance.

The No-Till Program has been in operation for several years and is very successful. The no-till drill plants crops by passing one time over the field instead of many times, vastly reducing the disturbance and subsequent erosion possibility of topsoil, as well as the fuel needed to plant the land. Energy grants fund the No-Till program. Other equipment available through the program includes chemical sprayers to control weeds, a pasture aerator, a mobile livestock scale, and a lagoon pumpout unit, all of which reduce runoff from pastures and crops by improving pasture grass stand quality and filtration ability, as well as reducing overfilling of waste lagoons, thus decreasing the possibility of leaks or runoff leading to fecal coliform impairment in watersheds.

The New Echota River Alliance provides non-point source education to 3<sup>rd</sup> and 4<sup>th</sup> grades in local schools, teaching sources of pollution and the effect of these non-point sources on water quality in the stream. As time and funding permit, this newly begun program will expand. As well, the New Echota River Alliance (NERA) conducts a workshop called "Get the Dirt Out." This is a volunteer training program for construction site inspection, and trains individuals to identify lack of BMPs in construction activities. NERA is funded by donations, grants from foundations, and membership.

Bartow County is a Yellow Ribbon-level member of the P<sup>2</sup>AD Partnership and has committed to a two-year effort (2004-2006) with Georgia Institute of Technology's Economic Development Institute to develop an Environmental Management System Program. The Yellow Ribbon level signifies that a county or other member is being proactive in addressing environmental impacts of development.

Rolling Hills Resource Conservation and Development Council conducts the Envirothon, a yearly competition for high school students, testing skills and knowledge of aquatics including water quality and other environmental topics. District and State competitions will be in March 2006. The RC&D also conducts other projects such as the no-till planter lease programs. The Limestone Valley RC&D sponsors the Upper Etowah River Alliance. Other projects are in the proposal stages.

Adopt-A-Stream, in conjunction with Coosa River Basin Initiative (CRBI), conducts ongoing water quality chemical and biological volunteer training and monitoring, stream clean-ups, stream bank and habitat restoration, and visual stream surveys in Bartow County. Testing for fecal coliform is not practical at this time.

Get the Dirt Out is a project of the Coosa River Basin Initiative which provides volunteer training for construction site inspection and identification of failure to use BMPs in construction activities. The project was implemented in March 2005 and covers the Northwest Georgia area of the Coosa River Basin.

Keep Bartow Beautiful runs several education and outreach programs including the following: Teacher training for Waste In Place, Project WET (Water Education for Teachers), and Enviroscope non-point source pollution using tabletop models; Stormwater-related presentation materials provided to schools; and a Speakers' bureau to provide outreach on storm water issues to local civic groups. Other projects are in the proposal stages.

Bartow County Greenspace Committee acquires and preserves riparian buffers in Bartow County. This steering committee was formed in 2000 in response to Governor Barnes' greenspace initiative. Criteria for land purchases in the county include the following:

- Land should help protect waterways and watersheds;
- Land should have historical or biological importance- for example, the site of an old Indian village, or a swampland or wetland area;
- Area should be beneficial to wildlife;
- Area should link other areas, allowing for wildlife corridor; and
- Land should be affordable for the county program.

Greenspace lands will be used for recreation with walking trails, and will feature restored riparian buffers and other conservation measures. The committee is funded by SPLOST funds. Proposed purchases include a tract on the South bank of the Etowah between Pumpkinvine Creek and Paga Mine Road; and property on Leake Mound, currently in the process of a historical impact study by Southern Research, Historic Preservation Consultants, Inc. The Leake Site is thought to predate the Etowah Indian Mounds by a thousand years.

Rivers Alive river cleanups were done in October 2005 in three locations on the Etowah River. Partners included Keep Bartow Beautiful, US Army Corps of Engineers, and EPD Mountain District. The target audience for this outreach and clean-up event was high school students. The cleanup efforts, which will become an annual event, take place in other locations as well, and satisfy education and outreach requirements for Bartow County's NOI. A River Festival culminates the event.

Keep Bartow Beautiful has a volunteer storm drain stenciling program ongoing since 2004 which is targeted to older developments in the city of Cartersville and urbanized areas served by the MS4. New residential developments must have storm drain stenciling done by the developer.

**Pine Log Creek**  
**COMPLETE THE FOLLOWING TABLES FOR AND NARRATIVES ABOUT EACH IMPAIRED STREAM IN THE WATERSHED.**

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Pine Log Creek	Cedar Creek to Salacoa Creek (Gordon County)	6	Fishing	NS

**III. SOURCES AND CAUSES OF STREAM SEGMENT IMPAIRMENT LISTED IN TMDLs**

After reviewing the TMDLs written for this stream, complete the following tables with **the information found in the TMDLs**. List each parameter for which the stream segment is impaired and the water quality standard violated. See the instructions for the water quality standards. Describe the sources and causes of each violation identified in the TMDLs.

**Table 2. SOURCES OF IMPAIRMENT AS INDICATED IN TMDLs**

PARAMETER 1	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED REDUCTION FROM TMDL
Fecal Coliform Bacteria (FC)	1,000 per 100 ml (geometric mean November- April) 200 per 100 ml (geometric mean May-October)	Wildlife  Agricultural/Livestock <ul style="list-style-type: none"> <li>• Animal grazing</li> <li>• Animal Access to streams</li> <li>• Application of manure to pastureland and cropland</li> </ul> Urban Development <ul style="list-style-type: none"> <li>• Leaking septic systems</li> <li>• Land Application Systems</li> <li>• Landfills</li> </ul>	81 percent

**Pine Log Creek**

**COMPLETE THE FOLLOWING TABLES FOR AND NARRATIVES ABOUT EACH IMPAIRED STREAM IN THE WATERSHED.**

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Pine Log Creek	Bartow and Gordon Counties (EPA)	23.5	Fishing	NS

**III. SOURCES AND CAUSES OF STREAM SEGMENT IMPAIRMENT LISTED IN TMDLs**

After reviewing the TMDLs written for this stream, complete the following tables with **the information found in the TMDLs**. List each parameter for which the stream segment is impaired and the water quality standard violated. See the instructions for the water quality standards. Describe the sources and causes of each violation identified in the TMDLs.

**Table 2. SOURCES OF IMPAIRMENT AS INDICATED IN TMDLs**

PARAMETER 1	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED REDUCTION FROM TMDL
Biota (Sediment)	No degradation of fish community	<ul style="list-style-type: none"> <li>• Roads</li> <li>• Agriculture</li> <li>• Bare ground from construction activities</li> <li>• Silviculture</li> </ul>	88 percent

#### IV. IDENTIFICATION AND RANKING OF POTENTIAL SOURCES OR CAUSES OF IMPAIRMENT

INVESTIGATE AND EVALUATE the sources of impairment for each parameter listed in Table 2. Write a narrative describing efforts made or procedures used to verify the significance and extent of the sources or causes of each impairment listed in the TMDLs. Include:

- Involvement of stakeholder group
- Field surveys
- Review of land cover data
- Evaluation of sources

---

Verification of the significance and extent of the sources or causes of each impairment listed in the TMDLs was done through a series of field surveys and stakeholder meetings. The TMDLs list three probable causes of fecal coliform contamination: Wildlife, Urban Development, and Agricultural/ Livestock. Probable causes of sediment include Roads, Agriculture, Bare ground from construction activities, and Silviculture. TMDLs indicate an 81% reduction in fecal coliform and an 88% reduction from Biota (sediment) from the overall contaminant loading.

The impaired stream segments were driven to verify potential sources or causes of impairment. A series of stops allowing visual field surveys of Pine Log Creek were conducted to visually evaluate stream condition including turbidity, sedimentation and erosion, stream bank condition, stream bed condition, depth, flow, and color. Field surveys also noted the presence of any factors thought to contribute to non-point sources of fecal coliform loadings including wildlife, animal grazing, animal access to streams, application of manure to pastureland and cropland, possibility of leaking septic systems, Land Application Systems (LAS) and landfills. Presence of point sources such as Confined Animal Feeding Operations (CAFOs) was also noted.

This data from field surveys was combined with GIS data and EPD listings of NPDES dischargers as well as information from stakeholders. Local stakeholder input was gathered in a series of stakeholder meetings; contacts with local government officials and other individuals were also used to determine actual causes or sources of stream impairment. Photographs of sources seen in the field surveys and corroborated by stakeholders are found in Appendix C.

##### **Fecal Coliform Bacteria**

##### **Point Sources**

There are no NPDES dischargers or LAS sites within the watershed for Pine Log Creek. Sewer currently extends to Calhoun city limits (to Tatum Road south of Calhoun) with the exception of one line to Jack's Creek in Sonoraville. No houses are currently connected to this line.

##### **Non Point Sources**

Several small tributaries drained runoff from cattle and horse farms into the creek.

### Wildlife

Predominately sources include water birds, ducks, geese, beaver and deer. Wildlife have access to the stream and stream banks at any point of the listed segment, contributing to overall fecal loading at any time. Statewide statistics indicate deer population exceeds 32 deer per square mile of forested habitat (GADNR, 2005). Pine Log Mountain Wildlife Management Area lies to the south of this watershed. It is privately owned; hunting rights are leased to the Georgia DNR (Region 1 Wildlife Management) who oversees habitat conditions in the area. Please see photograph 1. 0315010207 Pine Log Creek Cedar Creek to Salacoa Creek: Pine Log Road, wildlife have access to stream bank.

### Agricultural/Livestock

There are a few cattle and horse farms along the segment. There are no confined animal feeding operations (CAFOs). The cattle and horses grazing in the pastures did not have direct access to the stream, but the tributaries to Pine Log Creek would carry runoff from the pastures to the creek. Agricultural runoff into these streams could contribute to fecal coliform loadings. Please see photograph 7. 0315010207 Pine Log Creek Bartow and Gordon Counties: Calico Road Bridge runoff from pastures; and 8. 0315010207 Pine Log Creek Bartow and Gordon Counties: Johnson Rd runoff from pastures and sediment bar.

### Mining/Landfill

There are no mining or landfill operations in the watershed.

### Leaking septic systems

The watershed along Pine Log Creek had new and older homes on septic tank systems, but very few were located near the stream segment. It is thought that leaking or failing septic systems would contribute a low percentage of total fecal coliform loading. In Gordon County, of a total of 13,888 total septic systems recorded, 4,201 new systems were installed and 610 were repaired between 1990 and 2000 (EPD, 2004). In Bartow County, of a total of 22,361 total septic systems recorded, 8,747 systems were installed and 638 were repaired between 1990 and 2000 (EPD, 2004). Septic system installation is regulated through permits and inspections of on-site sewage management systems; plumbers and other maintenance operators are required to submit monthly logs of pump-outs and maintenance done to systems.

### **Biota/ Sediment**

The field survey in June 2005 indicated that habitat was still a concern. Flooding and subsequent runoff had exacerbated the problem. This field survey assessed the segment from Gordon to Bartow Counties after a heavy rainfall event following the rain path of Tropical Storm Dennis as it traveled into Georgia from the Gulf of Mexico. The creek was flooded and outside its normal banks; the creek was reddish in color as fast water probably cut away at the banks, adding to any sediment runoff. The tree buffer seen had debris entangled in it, indicating how high the water level had risen. Farmers experienced flooding of their row crops at two locations. Please see photograph 9. 0315010207 Pine Log Creek Bartow and Gordon Counties: Calico Road Bridge, upstream flooding; and 10. 0315010207 Pine Log Creek Cedar Creek to Salacoa Creek: Covington Rd runoff from hay pastures in area (1 of 2); and 11. 0315010207 Pine Log Creek Cedar Creek to Salacoa Creek: Covington Rd runoff from hay pastures in area (2 of 2).

## **Point Sources**

There are no NPDES dischargers or LAS sites within the watershed for Pine Log Creek.

### **Silviculture**

Logging in and around Pine Log Mountain Wildlife Management Area could produce erosion on truck access roads. Another practice in logging, that of filling in creeks with debris in order for trucks to cross, can also lead to sedimentation, bank erosion, and flooding. A model in South Georgia has made available a leased moveable bridge to meet this need for loggers while protecting streams. In this watershed the highest percentage of area is forest (73.1 %) with logging activities ongoing in some areas. Forestry is not covered under County E and S Ordinances. Please see photograph 2. 0315010207 Pine Log Creek Bartow and Gordon Counties: Mt. Pleasant Rd. Trees cut for timber harvesting.

## **Non Point Sources**

### **Agricultural/Livestock: Row Cropping**

Row cropping of corn, hay and pasture land is also predominant. Pasture land forms 19.5% of watershed; row cropping forms 4.1 % of the total. During extreme flood events such as Hurricane Dennis in June, 2005 (bringing 6-11 inches of rain) pastures and ditches had filled with water and soil had drained into creek, causing sedimentation. Flooding event also caused overflow of creek banks and subsequent bank erosion. Good tree buffers helped mitigate erosion intermittently.

The field survey (June 2005) indicated small tributaries that drain runoff from cattle and horse farms. Though livestock did not have access to stream, pasture runoff into stream tributaries could contribute to sediment loadings especially if best management practices were not used to mitigate erosion. Please see the following photographs: 3. 0315010207 Pine Log Creek Bartow and Gordon Counties Hwy 53 Bridge: Row crops under water 1 of 2; 4. 0315010207 Pine Log Creek Bartow and Gordon Counties Hwy 53 Bridge: Row crops under water 2 of 2; 5. 0315010207 Pine Log Creek Bartow and Gordon Counties Slate Mine Road: Row crops previously under water; 7. 0315010207 Pine Log Creek Bartow and Gordon Counties: Calico Road Bridge runoff from pastures; and 8. 0315010207 Pine Log Creek Bartow and Gordon Counties: Johnson Rd runoff from pastures and sediment bar.

### **Bare Ground from Construction Activities**

Land-disturbing activities (home construction) were seen in north Bartow County and in Gordon near where Salacoa Creek merges with Pine Log Creek. As this region is hilly, sedimentation runoff from construction is possible. No bare ground was noted in field survey.

### **Roads**

As area is hilly, dirt roads that are not maintained or graveled over can contribute to sediment runoff in a storm. The Limestone Valley RC&D encourages the Georgia Better Back Roads program to reduce erosion from unpaved roads. Please see photograph 6. 0315010207 Pine Log Creek Bartow and Gordon Counties: Mt. Pleasant Rd., dirt road along creek.

**Field Survey Notes (Please see Appendix C for accompanying photographs)**

**Field Notes: # 2 Pine Log Creek (Fecal Coliform), Cedar Creek to Salacoa Creek (Gordon County)**

Survey Team: Nancy Gribble

Date: June 12, 2005

Weather Conditions: Partly cloudy, slight breeze, very humid, 48 hours after heavy rains and wind from Tropical Storm (former Hurricane) Dennis as it traveled into Georgia from the Gulf of Mexico. The area received 6 to 11 inches of rain.

Upstream of listed segment:

Stop # 7: Yarbrough Mill Road (Gordon County)

Water appearance was reddish, muddy with rapid flow. The water level had been out of its banks and into the hay fields on both sides of the creek. Water was still standing in the fields.

Listed Segment:

Stop # 8: At Highway 53 bridge (Gordon County)

Good tree buffer along the banks, water height was flooded into the corn crops. The water appearance was orange and muddy with lots of debris floating in the creek, good flow.

Stop # 9: Covington Road Bridge (Gordon County)

The water level was well out of the normal banks, muddy appearance, and good flow.

The area drains houses, hay pastures and pine seedling farm.

Photographs taken: 10. 0315010207 Pine Log Creek Cedar Creek to Salacoa Creek: Covington Rd runoff from hay pastures in area (1 of 2); and 11. 0315010207 Pine Log Creek Cedar Creek to Salacoa Creek: Covington Rd runoff from hay pastures in area (2 of 2).

Stop # 10: Johnson Road (culverts) (Gordon County)

The water appearance was muddy due to rains, flow was good. Smaller stream drains houses, yards and pastures. Horses were seen in near pastures.

Photograph taken: 9. 0315010207 Pine Log Creek Cedar Creek to Salacoa Creek: Johnson Rd runoff from pastures.

**Field Notes: # 3 Bio (Habitat) EPA Listed-- Pine Log Creek, Bartow and Gordon Counties**

Survey Team: Nancy Gribble

Date: June 12, 2005

Weather Conditions: Partly cloudy, slight breeze, very humid, 48 hours after heavy rains and wind from Tropical Storm (former Hurricane) Dennis as it traveled into Georgia from the Gulf of Mexico. The area received from 6 to 11 inches of rain.

Stop # 1: Pine Log Creek at Pine Log Road (Bartow County)

From the storm causing flooding, the creek was out of its normal banks. This would cause erosion of the banks and runoff will carry sediment to the creek. The water appearance was reddish, muddy, good rapid flow from the receding water levels. Pastures, ditches etc. had been covered in flood waters. A good tree buffer along the creek helped catch some of the debris from the flooding water.

The area drained the cow pastures and vegetative fields.

Photograph taken: 7. 0315010207 Pine Log Creek Bartow and Gordon Counties: Calico Road Bridge, upstream flooding.

Stop # 2: At Mt. Pleasant Rd (Bartow County)

The waters had been very high and over the banks as debris were seen in trees and vegetation along the creek banks. The water appearance was reddish and muddy, very rapid flow due to heavy rains from the storm.

Photograph taken: 2. 0315010207 Pine Log Creek Bartow and Gordon Counties: Mt. Pleasant Rd Trees cut for timber harvesting

Stop # 3: At Mt. Pleasant Rd (north crossing) Bartow County

The water seen in the creek, ditches and pools in the pasture alongside of the creek was reddish muddy in color. The flow was rapid as water continues to recede from the pastures. The debris in the tree buffer indicates that the water level was very high from the normal banks.

Photograph taken: 6. 0315010207 Pine Log Creek Bartow and Gordon Counties: Mt. Pleasant Rd., dirt road along creek.

Stop # 4: Calico Road Bridge (Bartow County)

Water appearance was reddish and muddy from the heavy rains, levels were well over the normal creek banks.

Photograph taken: 7. 0315010207 Pine Log Creek Bartow and Gordon Counties: Calico Road Bridge runoff from pastures.

Stop # 5: At Highway 53 bridge (Bartow County)

Water appearance was reddish, muddy, with rapid flow, confined to upper banks.

Stop # 6: Slate Mine Road (just inside Gordon County)

The water appearance was orange due to the red clay and wash from the fields. Mr. Joe Holder farms along the creek and his corn crop experienced the flooding leaving dirt residue on the stalks. Water had receded that morning, the creek flow was rapid. The creek is usually stocked with fish by DNR at the July 4<sup>th</sup> Holiday, but not this year.

Photographs taken: 5. 0315010207 Pine Log Creek Bartow and Gordon Counties Slate Mine Road: Row crops previously under water

Stop # 7: Yarbrough Mill Road (Gordon County)

Water appearance was reddish, muddy with rapid flow. The water level had been out of its banks and into the hay fields on both sides of the creek. Water was still standing in the fields.

Stop # 8: At Highway 53 bridge (Gordon County)

Good tree buffer along the banks, water height was flooded into the corn crops. The water appearance was orange and muddy with lots of debris floating in the creek, good flow.

Photographs taken: 3. 0315010207 Pine Log Creek Bartow and Gordon Counties Hwy 53 Bridge: Row crops under water 1 of 2; and 4.

0315010207 Pine Log Creek Bartow and Gordon Counties Hwy 53 Bridge: Row crops under water 2 of 2.

Stop # 9: Covington Road Bridge (Gordon County)

The water level was well out of the normal banks, muddy appearance, and good flow.  
The area drains houses, hay pastures and pine seedling farm.

Stop # 10: Johnson Road (culverts) (Gordon County)

The water appearance was muddy due to rains, flow was good. Smaller stream drains houses, yards and pastures. Horses were seen in near pastures.

Photograph taken: 8. 0315010207 Pine Log Creek Bartow and Gordon Counties: Johnson Rd. runoff from pastures and sediment bar

To the extent possible, identify sources and quantify the extent of pollution in the stream segment for each of the parameters listed in Table 2 and evaluate the likely impact on the parameter load to the stream. This should follow research performed and described in preceding narrative and should correct or add information to the TMDLs. **The SOURCES SHOULD BE RANKED** from those having the most impact to those having the least impact. The estimated extent of contribution can be expressed as the area of the watershed affected, the stream miles affected, or the number of activities contributing to the problem. The magnitude of contribution should be estimated to be large, moderate, small, or negligible.

**Table 3. CONCLUSIONS MADE OF POTENTIAL SOURCES OF STREAM SEGMENT IMPAIRMENT**

**Pine Log –Cedar Creek to Salacoa Creek**

PARAMETER 1	POTENTIAL SOURCES	ESTIMATED EXTENT OF CONTRIBUTION	ESTIMATED MAGNITUDE OF CONTRIBUTION	COMMENTS
Fecal Coliform (FC)	Agricultural/ Livestock runoff	Mid-watershed	Moderate	Runoff into tributaries possible
FC	Possible leaking septic tanks	Throughout 6 mile impaired segment	Moderate	No known leaks
FC	Wildlife	Throughout 6 mile impaired segment	Moderate	Wildlife have access throughout

**Pine Log—EPA, Bartow and Gordon Counties**

PARAMETER 1	POTENTIAL SOURCES	ESTIMATED EXTENT OF CONTRIBUTION	ESTIMATED MAGNITUDE OF CONTRIBUTION	COMMENTS
Biota (Sediment)/ Habitat	Logging	Throughout 6-mile impaired segment	Moderate	Logging in/around Pine Log Mountain Wildlife Management Area could cause erosion on truck access roads. Stakeholders reported loggers compliant with E & S regs
Biota (Sediment)/ Habitat	Bare ground from construction activities	Throughout 6 mile impaired segment	Moderate	Home construction seen in north Bartow County and in Gordon near where Salacoa Creek merges with Pine Log Creek. As this region is hilly, sedimentation runoff from construction is possible.
Biota (Sediment)/ Habitat	Dirt Roads	Throughout 6-mile segment	Small to Moderate	Area is hilly- unmaintained dirt roads can contribute to E & S
Biota (Sediment)/ Habitat	Row crops without use of best management practices	Upper watershed	Small to Moderate	Some row cropping (corn, hay) done in watershed. Legacy sediment from previous cotton crops also a possibility.
Biota (Sediment)/ Habitat	Pastures	Throughout 6 mile impaired segment	Small to Moderate	Erosion of topsoil a possibility where BMPs not used

## V. STAKEHOLDERS

PUBLIC INVOLVEMENT AND THE ACTIVE PARTICIPATION OF STAKEHOLDERS is essential to the process of preparing TMDL implementation plans and improving water quality. Stakeholders can provide valuable information and data regarding their community, impaired water bodies, potential causes of impairments, and management practices and activities which may be employed to reduce the impacts of the causes of impairment.

Describe outreach activities to advise and engage stakeholders in the TMDL implementation plan preparation process. Describe the stakeholder group employed or formed to address the impaired segments in the watershed. Summarize the results of the number of attendees and meetings and describe major findings, recommendations, and approvals.

---

### Stakeholder Determination

Stakeholder lists were developed by reviewing lists of stakeholders contacted and involved in previous TMDL projects and in Source Water Assessment Projects done by the Coosa Valley RDC. Other stakeholders were added as they came forward or through word of mouth were introduced to the process. As well, other stakeholders were contacted and asked to participate, if they had not already been listed. Stakeholders were informed of the process and invited to participate, and to attend informational sessions, by mass mailings.

Stakeholder lists were developed by reviewing lists of stakeholders contacted and involved in previous TMDL projects and in Source Water Assessment Projects done by the Coosa Valley RDC. Other stakeholders were added as they came forward or through word of mouth were introduced to the process. As well, other stakeholders were contacted and asked to participate, if they had not already been listed. Stakeholders were informed of the process and invited to participate, and to attend informational sessions, by mass mailings. A workshop was held jointly with the North Georgia Regional Development Center on CLEAN WATER the TMDL Link, A Toolbox for Improving Water Quality. A series of informational meetings were held to inform communities of the TMDL process and to answer questions and address concerns. Groups such as the Georgia Poultry Federation and the New Echota River Alliance were also invited to participate in plan development or as advisory committee members.

### The Coosa Valley Regional Development conducted several TMDL informational and stakeholder public meetings:

May 17, 2005 TMDL Stakeholder Meeting held at the Forum in Rome, Georgia for the streams in the Coosa Basin (27 attendees)

August 30, 2005 TMDL Stakeholder Meeting held at Red Top Mountain State Park & Lodge, Cartersville, Georgia for the streams in Bartow/Gordon/Paulding/Polk/Pickens County areas (20 attendees)

October 18, 2005 Fall Workshop-Northwest Georgia Regional Water Resources Partnership held in Dalton, Georgia. Workshop title: CLEAN WATER the TMDL Link, A Toolbox for Improving Water Quality. Coosa Valley Regional Development Center & North Georgia Regional Development Center had two separate breakout sessions on the TMDL Implementation Plans for Stakeholder Interest (73 attendees)

December 7, 2005 Stakeholder Meeting held at the Calhoun Depot in Calhoun, Georgia for the Bartow, Gordon, Paulding, Polk and Pickens Counties (6 attendees).

Individual stakeholders were contacted during the course of developing the TMDL implementation plans as well.

### **Stakeholder Meeting for Bartow/Gordon/Paulding/Polk/Pickens Counties SubBasin Comments**

Stakeholders had the following comments:

- Local governments do not have regulatory authority to control agriculture or septic processes.
- Georgia Poultry Federation sees the farmers and growers that are willing to be educated and implement BMPs.
- Bartow County farmers still allow cattle to get to streams to pollute.
- Septic systems are not generally regulated and the State of Georgia needs to be proactive and set regulations to control septic or agricultural sources. Are there any regulations where the owner who clears vegetation along a stream bank can be corrected?
- EPD should enforce their authority and not rely on local governments to do enforcement. Get the State to partner with local government. We do not understand why EPD lowered the buffer zone along streams. The State of Pennsylvania requires on-site septic systems to be regulated.
- From jurisdiction to jurisdiction, we need to work together to understand how to implement the TMDL process.
- Speaking from the poultry-agricultural issues, getting farms to operate effectively and well managed will benefit local governments. Do not over regulate farmers.
- The need is great to get the TMDL information and assure accuracy. Cities and governments are regulated on accurate information.
- Make sure standards that are used to regulate streams are correctly identifies as to which ones actually impact human health.
- Can 319 grants are used? Can the money be funneled through the RDCs?
- We need to use a comprehensive approach to onsite septic systems where there are no sewer systems?
- How do we develop BMPs when the sources are not known?

Stakeholder advisory groups were formed from those stakeholders who indicated an interest in serving on the committee at the informational meetings, in interviews and in information gathering, as well as those who volunteered to be on the committee. Additional stakeholders were contacted directly and asked to be in the advisory groups. A cohesive mix of city and county leadership, water treatment operators, public works, code enforcement, engineers, environmental health, Keep Georgia Beautiful affiliates, environmental advocates, interested citizens and volunteers, NRCS agents, RC&D coordinators, extension service personnel, farmers, and other interested parties was sought as representatives of their particular viewpoints and areas of expertise.

Throughout the process input was gathered from individual stakeholders both as information to complete the plans and as insight into possible sources and causes of fecal coliform pollution, ideas on implementation activities, and obstacles to overcome in improving water quality. Of high concern was the reliability of initial data and the appropriateness of sampling sites and methods. Of concern as well was the feeling that individual concerns or facets were being singled out as a culprit in this process. Additionally stakeholders expressed the feelings that the same process had been repeated multiple times without efforts being made to continue the TMDL implementation. As these were legitimate concerns, care was taken to address them and to emphasize the nature of the current plans, to look at the watershed as a whole, to involve stakeholder groups in the entire

effort, and to ultimately place the stakeholders in the drivers' seat for the future. The Sampling Quality Assurance Plan protocol for additional monitoring was also addressed for those groups interested in gathering additional data to verify initial results or to de-list the stream.

The Bartow County Stakeholder Advisory Group (BCSAG) was formed in January 2006 for the purpose of establishing and directing stream water quality monitoring and outreach efforts to address nonpoint source pollution. Stakeholders in this group, representing Bartow County, Cities of Cartersville and Euharlee, and government agencies, have worked together previously on watershed assessment and source water assessment plans as well as other environmental and water quality efforts.

This group met in January 2006 to review the draft TMDL Implementation Plans for watersheds in the county and to discuss monitoring and outreach efforts. Two subcommittees were formed: One to review stream monitoring data for these watersheds and to implement additional monitoring as needed; and the second to begin septic system maintenance outreach to homeowners.

### **Bartow County Stakeholder Advisory Group Comments- January 31, 2006**

Stakeholders introduced themselves; those present included Gene Camp, Bartow County Water Department, Pam Robinson, Bartow County Health Department, Steve Bradley, Bartow County Administrator, Lamont Kiser, Bartow County Engineer, Cindy Haygood, Rolling Hills RC&D, Curt Gervich, Etowah Habitat Conservation Plan, Edmund L. Mullinax, City of Cartersville, Kathy Floyd, Bartow County Extension Service, Katie Knowles and Jim Shinall, USACE, and Jim Stafford, City of Cartersville, and Bobby Gay, City of Euharlee Code Enforcement, were present.

Jill Joss and Julie Meadows, CVRDC, introduced the TMDL Implementation Plan process.

Jill Joss presented a summary of discussion from previous meetings including data, sampling, impairment sources, management measures, input, and concerns of local governments, agriculture, landowners and individuals.

Julie Meadows reviewed management measures in draft TMDL Implementation Plans (TMDLIPs) for Pine Log Creek (HUC-10 0315010207); Oothkalooga Creek (HUC-10 0315010302); Pumpkinvine Creek (HUC-10 0315010411); Raccoon Creek (HUC-10 0315010412); Etowah River (HUC-10 0315010413); Euharlee Creek (HUC-10 0315010414); Etowah River/Two Run Creek (HUC-10 0315010415); and Silver Creek (HUC-10 0315010416).

Stakeholders suggested comments and additions to the management measures as follows:

Stakeholders asked that the Etowah Habitat Conservation Plan language be included in management measures with applicable ordinances for participating jurisdictions. Suggested that sewer expansion might not be the way to go, suggesting improvements to septic systems instead.

It was stated that the Poultry Waste Management Program district does not extend to Bartow County, and asked that the Continuous Conservation Reserve Program be included as it includes measures such as fencing livestock out of streams and provides up to a 90-10% cost-share, as well as the Conservation Reserve Program which includes erosion control measures.

It was stated that the County's new Notice of Intent had been approved by the EPD and over 30 BMPs for stormwater management should be included. It was clarified that land disturbing permits are obtained through the County.

It was clarified that the Greenspace Committee has purchased several greenspace lots and recommended that those acquisitions be included, as well as striking percentages from language that described Committee efforts. Negotiations are ongoing for further greenspace.

Sewer systems were discussed further: Lot size and configuration were listed as problematic, encouragement of dense enough development to warrant water and sewer was mentioned.

It was stated that Bartow County had been the first to implement a DVD education outreach program for new septic system owners in 2004 and it was now statewide. The Health Department can only check systems if there are complaints, which are sometimes received from landowners or from surveys done by the COE at Lake Allatoona. New regulations for septic system installation recently introduced.

How to get the information out to those getting new permits? A possibility might include getting the word out through water utilities, sending out information to those not on sewer.

It was stated that there is no mandatory update or management of septic systems; that there should be additional public education.

Suggestions were made that the State be more proactive to establish regulations for septic systems at the State level. Education on maintenance of systems is key. Resale of homes with septic systems is also an issue.

Sheri Henshaw, director of Keep Bartow Beautiful, was unable to be present but had sent information about outreach programs that Keep Bartow Beautiful is coordinating. These programs are detailed in the outreach section of the TMDL Implementation Plans for watersheds in Bartow County and include the following projects: Etowah River Cleanup; Environmental education including Teacher Training for Waste In Place, Project WET (Water Education for Teachers); Enviroscape (illustrates non-point source pollution in the classroom using tabletop model); Stormwater education in schools; Development of a speaker's bureau to present stormwater issues to civic groups; and Adopt-A-Stream. Proposed projects include a homeowner's workshop on maintaining septic tanks, including the topics "Different Functions of Septic Tanks; How They Should Function; Common Causes of Failure; Maintenance For Longevity; Potential Contaminants in the Effluent; and Site Limitations"; a workshop on rain gardens for stormwater catchment, and cooperative development of a demonstration rain garden at Red Top Mountain State Park with signage.

A grant program was mentioned in rural Kentucky through PRIDE (Personal Responsibility in a Desirable Environment) for low-income homeowners to connect to existing sewer or install a permitted septic system; a possibility of a similar pilot project in this area.

Sampling was discussed. Previous and current sampling sites (EPD, USGS) were reviewed. Future or ongoing sampling was discussed especially for the tributary to Petit Creek segment and the Euharlee. Previous sampling data for all watersheds were requested for further study.

It was remarked that errors in data may have caused pristine streams may have been listed in error.

Funding sources were discussed by all. Information on EPD's 319 h grant requirements for 2006-2007 will be announced in early February and relayed to stakeholders.

The Northwest Georgia Water Resources Partnership was introduced for regional water planning purposes.

A subcommittee was formed to review sampling data, including:

- Steve Bradley, Bartow County Administrator
- Ed Mullinax, City of Cartersville
- Gene Camp, Bartow County Water Department
- Sheri Henshaw, Keep Bartow Beautiful
- Katie Knowles, USCOE Allatoona Dam
- Jill Joss, Coosa Valley RDC

A subcommittee was formed to plan septic system outreach, including:

- Gene Camp, Bartow County Water Department
- Bobby Gay, City of Euharlee Zoning and Code Enforcement
- Pam Robinson, Bartow County Environmental Health
- Kathy Floyd, Bartow County Extension Service
- Cindy Haygood, Rolling Hills RC&D
- Jim Shinall and Katie Knowles, USCOE Allatoona Dam
- Julie Meadows, Coosa Valley RDC

The meeting was adjourned.

Amended February 2, 2006.

The Gordon and Pickens County Stakeholder Advisory Group (BCSAG) was formed in February 2006 for the purpose of establishing and directing stream water quality monitoring and outreach efforts to address nonpoint source pollution in the county. Stakeholder input indicated that farming in the County is decreasing in general while housing developments are increasing. The Stakeholders met in an initial meeting February 24 to review the implementation plans, discuss sources and causes, and review possible implementation activities and recommendations of the Coosa Valley RDC.

#### **Gordon-Pickens Counties Stakeholder Advisory Group- February 24, 2006**

Attendees included Kathy Cox, Gordon County Ordinance Officer; Rodney Buckingham, Pickens County Planning and Development; David Howerin, Coosa Valley RDC; Tom Burgess, Gordon County Building and Planning; Bob Peoples, Peoples and Quayle, Lawyer for Gordon County; Jill Joss and Julie Meadows, Coosa Valley RDC; Ross Wilburn, City of Calhoun; Jerry Crawford, City of Calhoun; Sam Payne, Gordon County Farm Bureau; Kelly Cornwell, City of Calhoun; and Clayton Jones, New Echota River Alliance.

Plans were discussed for HUCs-10 0315010206, Salacoa Creek, 0315010207, Pine Log Creek, and 0315010302, Oothkalooga Creek.

It was stated that County Road 29 mentioned in the field survey was also known as Love Bridge Road.

In Gordon and Pickens Counties there is no residential development in the area. Around Fairmount, there is a small amount of residential development as well as development to the west of the watersheds. There are single family homes in the area; septic systems leaking or failing could be a small to moderate source.

Oothkalooga point sources were discussed.

A dirt-selling operation in Bartow, Gordon Counties was discussed. An E & S permit for dirt removal is required for these operations through EPD's mountain districts.

Challenges to non-point source pollution planning were discussed including lack of a conservation mindset. Flooding can be caused by fencing along streams.

On Pine Log Creek, 0315010207, it was discussed that there was an extensive mining operation. Row cropping was done in all. Stream buffers will depend on legislation results.

For 0315010302, Oothkalooga Creek, A point source at Hall Station was discussed as were logging operations in Bartow County around Adairsville, and new housing near the county line.

For 0315010206, Salacoa Creek, a quarry under lease by Dimension Stone was discussed, as was a sod farm just past Cash Road off Highway 53, as well as a sod farm on Hwy 156.

It was stated that challenges to implementation of the recommended activities (education and outreach on stream buffers, septic system maintenance, and stormwater best management practices) are money and personnel. Erosion and sedimentation enforcement is done on a complaint basis and the reality is that federal and state lack of involvement weakens local ability to enforce these measures.

It was asked, how does one check on private property? Agriculture and forestry are exempt from E & S ordinances. It depends on residential maintenance and constant education.

It was stated that agricultural E & S rules are changing, for poultry houses, etc. It was stated that agriculture is decreasing in the entire area.

It was stated that cotton row cropping in the past may have contributed legacy sediment to the streams. It was asked how could testing be done for legacy sediment.

It was asked, over a ten year period, what could likely be done as far as best management practices, as well as what the likely reduction was to be? It was stated that on construction sites, BMPs may not address the limits that are asked, that lower reductions may be possible.

It was asked if builders could address E & S concerns as have farmers, with the no-till program, and how to change builders' mindsets.

It was stated that a lot of erosion comes from unpaved driveways especially on a hill and if older driveways. These small things are additive and create the larger problem of sedimentation. It was asked, How can these smaller issues be addressed? Education and outreach would address all these, especially for the younger generation.

It was stated that fines are not large enough to impact developers.

It was asked how and where sampling was done for these creeks; it was asked how many streams are to be removed from the list. It was stated that EPD is continuing to sample every 5 years for the Coosa Basin and is currently sampling in this basin in 2006.

It was stated that there are regulatory discrepancies.

It was mentioned that New Echota River Alliance does non-point source education for 3<sup>rd</sup> and 4<sup>th</sup> grade school children using the water drop suit with a goal to reach all Gordon

Finally it was stated that individual cost is tied to impact of any program.

List the watershed or advisory committee members of the stakeholder group for this segment in the following table.

**Table 4. COMMITTEE MEMBERS**

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Sherri Henshaw Coordinator, Keep Bartow Beautiful	P.O. Box 786	Cartersville	Georgia	30120	770.387.5167 Fax: 770.606.2382	<a href="mailto:henshaws@bartowga.org">henshaws@bartowga.org</a>
Melissa (Missy) Phillips Director, TREESBartow	P.O. Box 786	Cartersville	Georgia	30120	770.387.5167 Fax: 770.606.2382	
Sherri Teems National Resource Conservation Service	1401 Dean Street Suite I	Rome	GA	30161	(706) 291-5651 X 3	<a href="mailto:sheri.teems@ga.usda.gov">sheri.teems@ga.usda.gov</a>
Cindy Haygood Rolling Hills Regional Conservation and Development Council	P.O. Box 1550	Dallas	GA	30132	(770) 505-4288	<a href="mailto:Cindy.Haygood@ga.usda.gov">Cindy.Haygood@ga.usda.gov</a>
Keith Gilmer Georgia Soil and Water Conservation Commission	700 East 2nd Ave. Suite J	Rome	GA	30161	(706) 295-6131	<a href="mailto:K_gilmer@gaswcc.org">K_gilmer@gaswcc.org</a>
John Loughridge Georgia Soil and Water Conservation Commission	700 East 2nd Ave. Suite J	Rome	GA	30161	(706) 295-6131	<a href="mailto:J_loughridge@gaswcc.org">J_loughridge@gaswcc.org</a>
Steve Bradley County Administrator	135 West Cherokee Avenue Suite 241	Cartersville	GA	30120	(770) 387-5030	<a href="mailto:bradleys@bartowga.org">bradleys@bartowga.org</a>
Lamont Kiser Bartow County Engineer	135 West Cherokee Avenue Suite 241	Cartersville	GA	30120	(770) 387-5067	<a href="mailto:kiserl@bartowga.org">kiserl@bartowga.org</a>
Tammy Decker USDA Rural Development	12 Felton Place	Cartersville	GA	30120	(770) 386-3393	<a href="mailto:Tammy.decker@ga.usda.gov">Tammy.decker@ga.usda.gov</a>
Gene Camp Bartow County Water System	P.O. Box 850	Cartersville	GA	30120	(770) 387-5170	<a href="mailto:campg@bartowga.org">campg@bartowga.org</a>
Kenneth M. Akins Etowah Indian Mounds Site Manager	813 Etowah Indian Mound Road, S.E.	Cartersville	GA	30120	(770) 387-3747	<a href="mailto:Etowah_mounds@dnr.state.ga.us">Etowah_mounds@dnr.state.ga.us</a>
Jim Stafford City of Cartersville Water Department	P.O. Box 1390	Cartersville	GA	30120	(770) 387-5653	<a href="mailto:jstafford@cityofcartersville.org">jstafford@cityofcartersville.org</a>
Kathy Floyd County Extension Agent	320 W. Cherokee Ave. Room 112	Cartersville	GA	30120	(770) 387-3747	<a href="mailto:Kpfloyd@uga.edu">Kpfloyd@uga.edu</a>
Machelle Simmons USDA Natural Resource Conservation Service	717 South Wall Street Suite 1	Calhoun	GA	30701	(706) 629-2582 X 3	<a href="mailto:Machelle.simmons@ga.usda.gov">Machelle.simmons@ga.usda.gov</a>
Kelly Cornwell	P.O. Box 248	Calhoun	GA	30703	(706) 629-4701	<a href="mailto:kcornwell@calnet-ga.net">kcornwell@calnet-ga.net</a>

City of Calhoun Utilities						
Jerry Crawford City of Calhoun Water and Sewer	P.O. Box 248	Calhoun	GA	30703	(706) 602- 6078	<a href="mailto:icrawford@calnet-ga.net">icrawford@calnet-ga.net</a>
Clayton Jones New Echota River Alliance	723 Culpepper Road SW	Calhoun	GA	30701	(770) 548-0263	<a href="mailto:claytonjones@coosa.org">claytonjones@coosa.org</a>
Sam Payne Gordon County Farm Bureau	2259 U.S. 41	Calhoun	GA	30701	(706) 629-3144	<a href="mailto:paynefrm@bellsouth.net">paynefrm@bellsouth.net</a>
Bob Peoples Peoples and Quayle, Inc						
Christy Blair Gordon County Environmental Health	318 North River Street	Calhoun	GA	30703	(706) 624-1440	<a href="mailto:chblair@dhr.state.ga.us">chblair@dhr.state.ga.us</a>
Tom Burgess, Dir. Gordon County Building, Planning, Development	Office in Gordon Co. Annex Bldg. P. O. Box 580	Calhoun	GA	30703-0580	(706) 629-0505	<a href="mailto:tburgess@gordoncounty.org">tburgess@gordoncounty.org</a>
Kathy Cox Gordon County Ordinance Enforcement Officer	Office in Gordon Co. Annex Bldg. P. O. Box 580	Calhoun	GA	30703-0580	(706) 629-4253	<a href="mailto:kcox@gordoncounty.org">kcox@gordoncounty.org</a>
Doug Cabe Limestone Valley RC& D	125 Red Bud Road NE, Suite 7	Calhoun	GA	30701	(706) 625-7044	<a href="mailto:dec@lvrcd.org">dec@lvrcd.org</a>
Steve Moraitakis Gordon County Extension Agent	P.O. Box 95	Calhoun	GA	30703-0095	(706) 629-8685	<a href="mailto:smorait@uga.edu">smorait@uga.edu</a>
Ross Wilburn City Engineer, City of Calhoun	P. O. Box 248	Calhoun	GA	30701	(706) 602-6024	<a href="mailto:rwilburn@calnet-ga.net">rwilburn@calnet-ga.net</a>
Rodney Buckingham Pickens County Planning and Development		Ellijay	GA	30450	(706) 253-8850	<a href="mailto:Pickenscoplan-develop@ellijay.com">Pickenscoplan-develop@ellijay.com</a>

In Appendix A, list the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

**VI. MANAGEMENT MEASURES AND ACTIVITIES**

Describe any management measures or activities that have been put into place or will be put into place including regulatory or voluntary actions or other controls by governments or individuals that specifically apply to the pollutant that will help achieve water quality standards. Include who will be responsible for the measure, how it will be funded, the status, the date it will be or was initiated, and a short description of how effective the measure is or will be.

**Table 5. MANAGEMENT MEASURES AND ACTIVITIES**

**GENERAL MEASURES APPLICABLE TO ALL PARAMETERS**

MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/IMPLEMENTED	EFFECTIVENESS (Very, Moderate, Weak)
Federal Clean Water Act, Section 305(b) and 303 (d) Amended 1977	USEPA, Georgia DNR EPD, Bartow County, Paulding County	The congressional objective of the Clean Water Act “is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Section 305 (the <i>National Water Quality Inventory</i> ) requires states to report progress in restoring impaired waters to EPA on a Biennial basis. Section 303(d) requires states to identify ‘impaired’ waters, submit a list to EPA every two years, and develop TMDLs for these waters	Federal, Georgia	Enforced	1972; amended 1977	
Georgia Water Quality Control Act (OCGA 12-5-20)	Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6	Law prohibiting discharge of excessive pollutants (sediments, nutrients, pesticides, animal wastes, etc.) into waters of the State in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats. Law authorizing Georgia EPD to control water pollution, eliminate phosphate detergents, and regulate sludge disposal; to require permits for agricultural ground and surface water withdrawals; to prohibit situation of state waters by land disturbing activities and require undisturbed buffers along state waters; to require land-use plans that include controls to protect drinking water supply sources and wetlands; to require river basin management plans on a rotation schedule for all major river basins.	Federal, Georgia, Bartow, Gordon, Cherokee Counties	Enforced	11/1964	
GA Growth Planning Act (OCGA 12-2-8)	GA DNR, Department of Community Affairs, and local units of government.	Authorized GA DNR to develop minimum planning standards and procedures that local jurisdictions could adopt and enforce pertaining to the protection of river corridors, mountaintops, water supply, watersheds/reservoirs, groundwater recharge areas, and wetlands. Silvicultural activities may be exempted from permitting requirements provided the activity complies with BMPs.	State			

Georgia Planning Act. Part V Environmental planning measures. GA DNR EPD Rules for Environmental Planning Criteria (Ch. 391-3-16)	Bartow, Gordon, Cherokee Counties	Wetland protection, river corridor protection, etc. Minimum criteria. Requires 100' buffer on protected rivers. Water supply watershed protection also requires 100' stream buffers.	General Fund	Enforced	1989	
Georgia Erosion and Sedimentation Control Act, Construction Permit, 2003 Amendment	Bartow, Gordon, Cherokee Counties, Georgia DNR/ EPD, Georgia Soil and Water Conservation Commission	Municipalities certified as Local Issuing Authority for land-disturbing activities. Requires Erosion and Sedimentation Control Plan incorporating best management practices plus "Qualified Personnel" Training and Certification Program adopted from Georgia Soil and Water Conservation Commission. Certification of on-site "Qualified Personnel" to ensure proper design, construction, and maintenance of standard E & S control measures and storm water management practices.	Bartow, Gordon, Cherokee Counties	Enforced	2003	
Georgia Erosion and Sedimentation Control Act (OCGA 12-71-1)	Bartow, Gordon, Cherokee Counties, Georgia DNR/ EPD, Georgia Soil and Water Conservation Commission	Restricts activity within 50 feet of streams that support or could support trout, and 25 feet of all other streams and lakes. This includes intermittent streams, which do not run year-round, as well as perennial streams	Bartow, Gordon, Cherokee Counties, Georgia DNR/ EPD	Enforced	2003; EPD rule revised 1/2005	
GA Growth Planning Act (OCGA 12-2-8)	GA DNR, Department of Community Affairs, and local units of government.	Authorized GA DNR to develop minimum planning standards and procedures that local jurisdictions could adopt and enforce pertaining to the protection of river corridors, mountaintops, water supply, watersheds/reservoirs, groundwater recharge areas, and wetlands. Silvicultural activities may be exempted from permitting requirements provided the activity complies with BMPs.	State			
Erosion and Sedimentation Control Training and Certification	Georgia Soil and Water Conservation Commission, GA EPD, Rolling Hills and Limestone Valley RC&Ds, Bartow, Gordon, Cherokee Counties	House Bill 285 requires state certification in Erosion and Sedimentation Control for anyone involved in the following activities: land development, design, review, permitting, construction, monitoring, inspection, or any land-disturbing activity in Georgia (Georgia Soil and Water Conservation Commission, 2005). The GSWCC also has updated requirements for E&S plans to be submitted with each project. Three levels of certification are offered through the Rolling Hills Regional Conservation and Development Council (RC & D) and Chattahoochee Technical College. Bartow has held class also, level 1A.	Georgia Soil and Water Conservation Commission, GA EPD, Bartow, Gordon, Cherokee Counties	Enforced	Certification by end of 2006; One class held in Bartow county 12/05	Very
Construction Storm Water	Georgia DNR/ EPD	General storm water permit for stand-alone construction sites; infrastructure permits; and common	State	Enforced		

Discharge NPDES Permit		developments. Requires implementation of Erosion, Sedimentation and Pollution Control Plan plus monitoring of discharge for compliance with Georgia's in-stream water quality standards.				
Industrial Storm Water Discharge NPDES Permit	Georgia DNR/ EPD	General storm water discharge permit for manufacturing facilities; mining, oil, and gas operations; hazardous waste treatment; storage or disposal facilities; recycling centers; steam electric power generating facilities; transportation facilities; domestic sewage or sewage treatment. Requires implementation of Storm Water Pollution Prevention Program. May require storm water monitoring program targeting discharges into/near 303 (d) listed waters.	State	Enforced		
Notice of Intent coverage of small MS4 under NPDES Phase II general permit	Bartow, Cherokee Counties	NOI approved by EPD in 2005. Includes Best Management Practices to reduce non-point source pollution in the county.	Bartow, Cherokee Counties	Enforced	2005	Very
Phase II NPDES Storm Water Permit for Small MS4	Georgia DNR & EPD, Bartow, Cherokee Counties	Bartow County NOI Approved in 2005. Requires local jurisdictions to develop a comprehensive Storm Water Management Program (SWMP) to include 1. Public Education and Outreach; 2. Public Participation and Involvement; 3. Illicit Discharge Detection and Elimination; 4. Construction Site Storm Water Runoff Control; 5. Post-Construction Storm Water Management in New Development and Redevelopment; 6. Pollution Prevention and Good Housekeeping related to municipal operations, reporting, monitoring and program implementation. Bartow County is in process of implementing these best management practices.	Bartow, Cherokee Counties	Enforced	2005	
Watershed Assessment and Protection Plan for Phase II NPDES Permitting	Bartow County	Required for new or expanding wastewater treatment discharge permits. Internal assessment of storm water pollution prevention plan (map of facilities and responsibilities for upkeep): Reference TMDL implementation plans (TMDLIP) and water quality strategies for non-point source pollution elimination. Drives local land use planning. Georgia EPD guidelines include Management Measures Specific for 303(d) listed stream segments in the impacted watershed. WPP to reference TMDLIP already developed. Where no TMDLIP developed, WPP to outline management/ monitoring measures targeting listing violations; identify authority responsible for implementing the above management/ monitoring measures; indicate possible funding sources; establish current status and/or date measures will be initiated, and expected effectiveness;	Bartow County	Enforced	2005	

		and design educational and outreach activities for intended audiences.				
Sanitary Sewer Maintenance Program	Bartow County, Cherokee County	Sanitary Sewer system inventory and inspection (mapping, television inspections); infiltration and inflow identification and reduction (flow monitoring, smoke testing); sewer line rehabilitation (pipe bursting, relining, cleaning) and manhole rehabilitation.	Bartow County, Cherokee County	Enforced	Ongoing	
District-wide Watershed Management Plan	Georgia DNR/EPD, Metropolitan North Georgia Water Planning District (SB 130), Bartow County, Cherokee County	Bartow has adopted five of six Model Storm Water Management Ordinances that address Post Development Storm Water Management for New Development and Redevelopment, Conservation Subdivision/ Open Space Development, Illicit Discharge and Illegal Connection, Litter Control, and Stream Buffer Protection as required by Georgia EPD in MS4 Phase II Permit Renewals. The District Plan also addresses municipal good housekeeping practices to control non-point source pollution; improved enforcement of erosion and sedimentation control; storm water management for transportation projects; and education and public awareness activities.	Bartow County, Cherokee County	Enforced	Bartow, 12/2005	
Watershed Protection Tools Addressing Poor Riparian Buffers	Bartow County and stakeholders	Riparian Buffer Ordinance (Stream Buffer Protection Ordinance of 50'); Stream Restoration; Stream Mitigation Bank; Conservation Subdivision Ordinance	Bartow County	Enforced	Compliant with or exceeds Metro N. GA District model ord. 12/07/05	Very if enforced
Watershed Protection Tools Addressing Point Sources	Bartow County and stakeholders	Improved NPDES permits; Enforcement of existing permits	Bartow County	Enforced	Compliant with or exceeds Metro N. GA District model ord. 12/07/05	Very if enforced
Watershed Protection Tools Addressing Impervious Surfaces and Storm Water Runoff	Bartow County and stakeholders	Relevant Storm water Management and Conservation Subdivision Ordinances; Conservation Planning	Bartow County	Enforced	Compliant with or exceeds Metro N. GA District model ord. 12/07/05	Very if enforced
County Municipal Ordinance	Bartow County/ Code Enforcement Office	Post-Development Stormwater Management Ordinance with stream buffer limits; Litter Control Ordinance; Conservation Subdivision ordinance; Riparian Buffer ordinance; Greenspace Ordinance	General fund	On-going	January 2005	Very
Etowah Habitat Conservation Plan	US Fish and Wildlife Service, Bartow	Additions to Metropolitan North Georgia Water Planning District Model Storm Water Management Ordinance	Bartow County, City of	Enforced	Compliant with or	

Stormwater Ordinance with Better Site Design Guidelines and Addendum: Runoff Limits, Priority Area Protection and Maintenance of Stormwater Facilities	County, City of Cartersville	addressing impervious surface runoff including 1. Clarification of bond and fee requirements; 2. Strengthening maintenance and inspection requirements, 3. Encouraging the use of Better Site Design credits, with additional performance standards for high priority habitat areas including section five, Model Runoff Limits Ordinance. This establishes requirements for runoff infiltration system installation and maintenance. Development of Runoff Limits Manual in progress (2006) Engineering Specifications for Structural BMPs. Requires updates to ordinances in participating jurisdictions.	Cartersville		exceeds Metro N. GA District SW ord. 12/07/05	
Etowah Habitat Conservation Plan Stream Buffer Ordinance	US Fish and Wildlife Service, Bartow County	For those jurisdictions in the Metropolitan North Georgia Water Planning District, Additions are made to the district's Model Stream Buffer Ordinance addressing granting of variances. Requires updates to ordinances in participating jurisdictions.	Bartow County	Proposed	Compliant with or exceeds Metro N. GA District model ord. 12/07/05	
Etowah Habitat Conservation Plan Conservation Subdivision Ordinance	US Fish and Wildlife Service, Bartow County	For those jurisdictions in the Metropolitan North Georgia Water Planning District, changes made to the district's Model Conservation Subdivision Ordinance include requirement of site map analysis for all developments with open space plans, instruments of permanent protection, and a four-step design process specified; and changes to primary conservation sites to be included in open space requirements including 100-year floodplain, 75-foot stream buffers, 25%-or-greater slopes, wetlands, endangered species habitats, and archeological sites. Requires updates to ordinances in participating jurisdictions. Places emphasis on protecting stream buffers and significant hydrological features..	Bartow County		Compliant with or exceeds Metro N. GA District model ord. 12/07/05	
Etowah Habitat Conservation Plan Conservation Road Crossing and Culvert Design Guidelines	US Fish and Wildlife Service, Bartow County	Road Crossings Technical Committee is in the process of developing design guidelines for road crossings of stream and stream culverts to alleviate habitat concerns that pipe culverts limit fish movement in stream	Bartow County		In committee	
Etowah Habitat Conservation Plan Conservation Utility Line Crossing and Construction	US Fish and Wildlife Service, Bartow County	Utility Crossings Technical Committee is in the process of developing design guidelines for utility stream crossings to reduce sedimentation and other habitat concerns resulting from erosion of land disturbed by utility activities	Bartow County		In committee	

Recommendations						
Etowah Habitat Conservation Plan Standard Operating Procedure (SOP) for Erosion and Sedimentation Control	US Fish and Wildlife Service, Bartow County	SOP includes six elements: 1. Two required preconstruction meetings- one, an early meeting with the site planner and relevant E&S professionals to identify problem areas before site plans are Finalized, and two, a subsequent meeting with the utilities, engineers, developer, E&S installation crew, and owner to review where and how E&S control measures will be installed; 2. Semi-monthly reporting requirements; 3. A bonding program; 4. A minimum inspection frequency requirement; 5. A brief E&S checklist for building inspectors; and 6. Designation of emergency on-call E&S personnel from each development. Requires updates to ordinances in participating jurisdictions.	Bartow County	In review		
Federal Endangered Species Act of 1973	Department of the Interior, US Fish and Wildlife Service	Provides a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve those purposes	USFWS	Enforced	1973	Very if enforced
Municipal Ordinances	Gordon County/ Code Enforcement Officer	Planning and Development Ordinance (2004) Sect. 11-129, Stormwater Management for new development; River Corridor Protection Ordinance (Article V, Sections 11-251 to 11-257) adopted in 2004 for Conasauga, Coosawattee, Oostanaula Rivers, 100 ft.-buffer req.; Wetlands Protection Ordinance (Article VII, Sections 11-351 to 11-360) adopted in 2004 to protect wetlands. Floodplain Ordinance in revision. Litter ordinance adopted in 1992. Zoning Ordinance (2005) includes PRD to create/conservate openspace in new development.	General Fund	Enforced	2004	Very if enforced
EPA Section 319 Non-point Source Implementation Grants	Georgia Department of Agriculture/ Georgia Environmental Protection Division for enforcement action	Funds distributed through a competitive process to public agencies, regional development centers, state colleges and universities, and state agencies.	Federal, State		Yearly	Varies with BMP or project
Georgia Best Management Practices	Georgia DNR/EPD	Informs those involved in the agriculture business of effective practices to minimize non-point sources of pollution	Georgia			Varies with BMP
Georgia's Best Management Practices	Georgia Forestry Commission (matters involving enforcement are generally referred to GA EPD)	GFC program to inform landowners, foresters, timber buyers, loggers site preparation and reforestation contractors and others involved with silvicultural operations about commonsense, economical effective practices to minimize nonpoint source and thermal pollution. GFC encourages and monitors compliance and conducts a complaint resolution program.				>75% when properly applied to site preparation and harvesting activities.

Georgia Forestry Commission Monthly BMP Assurance Examination	Georgia Forestry Commission (matters involving enforcement are generally referred to GA EPD)	In an effort to document “reasonable assurance” that water quality will be proactively protected during regular ongoing silvicultural operations, the GCF will offer a monthly BMP assurance examination of active sites. All active of ongoing sites will be identified either through monthly air patrol flights, courthouse records, riding the roads, notification or by landowners. Sites located within watersheds of specific biota (sediment) impaired streams will be given a higher priority to identify and conduct examinations.	Federal and State			
Memo to the Field: Application of BMPs to mechanical silvicultural site preparation activities for the establishment of pine plantations in the Southeast (Silviculture)	EPA/ US Army Corps of Engineers - (cases normally referred to GFC to make initial determination)	Identifies certain bottomland hardwood wetlands that should be subject to permitting if converting to pine plantations.	State			
Federal Farm Bill (Swampbuster, Ag)	US Department of Agriculture Natural Resource Conservation Service	Prohibits landowners participating in federal price support programs from converting forested wetlands to agriculture	Federal			
Partners for Fish and Wildlife	US Fish and Wildlife Services	This is a proactive, voluntary program that works with private landowners to restore fish and wildlife habitats on their land. The projects have several different focuses, but for the purpose of water quality the projects focus on stream and riparian restoration and restoration of rare species habitat.	Federal variable cost share			Effectiveness will vary with the specific application and must be individually determined.
Farm Bill 2002	United States Department of Agriculture / National Resources Conservation Services	Enhances long-term quality of our environment and conservation of our natural resources. This bill provides several opportunities for receiving grants to improve water quality.	Federal Cost-Share and Incentive Programs.			Effectiveness will vary with the specific application and must be individually determined.
Environmental Quality Incentives Program (EQIP)	Natural Resources Conservation Services	Voluntary program that provides technical and cost share assistance for protection of ground and surface water, erosion control, air quality, wildlife habitat, and plant health.	Federal 50% cost share with possible additional incentive payments			Effectiveness will vary with the specific application and must be individually determined.
Special Forestry/Wildlife Environmental Quality Incentives	Natural Resources Conservation Services	Special funds allocated out of the EQIP program that will address forest road erosion/water quality, plant health, and wildlife habitat. This program has a separate ranking for rewarding money from the regular	Federal 50% cost share with possible additional			Effectiveness will vary with the specific application and must be

Program (EQIP)		EQIP program.	incentive payments			individually determined.
Wildlife Habitat Incentives Program (WHIP)	Natural Resources Conservation Services	Provides technical and cost share assistance for the creation of high quality wildlife habitat. Habitats of special concern include riparian areas and endangered and threatened species habitat.	Federal 75% of cost of the installation of practice provided			Effectiveness will vary with the specific application and must be individually determined.
Wetlands Reserve Program (WRP)	Natural Resources Conservation Services	Provides technical and financial assistance to landowners to enhance degraded wetlands degraded by farming or draining. There are three options with WRP to receive funds that have differing time agreements and easements resulting in different cost share. In all programs participants control access to the land, may lease or use land for hunting, fishing, and other passive recreational activities. Compatible uses are allowed as long as the do not degrade the wetland.	Federal (Farm Bill 2002) Cost Share 1. Permanent Easement :Pays appraised value of land (\$2,000/ acre cap) and 100% of costs of restoration. 2. 30-Year Easement: Pays 75% of appraised value of land and 75% of restoration costs. 3. Restoration Cost Share Agreement: Pays 75% of restoration costs, no easement on the property.			Effectiveness will vary with the specific application and must be individually determined.
Chapter 40-13-8 Animal Manure Handlers Rules of Georgia Department of Agriculture Animal Industry Division	Georgia Department of Agriculture	This requires that persons engaged in removing animal manure from livestock/poultry production areas, transporting animal manure on public roadways, or depositing animal manure to a premise other than its point of origin obtain a permit and follow rules to control animal disease, and outlines regulations for transportation, equipment and storage.	State			Effectiveness will vary with the specific application and must be individually determined.
Farm Bill 2002 Forestland Enhancement Program	Georgia Forestry Commission	The Forestry Commission has implemented best management practices on its lands to reduce sedimentation and erosion from silviculture practices. The Georgia Forestry Commission also provides education, technical and financial assistance through cost-share programs to private landowners especially in the Forestland Enhancement Program, a part of the	Federal, State		Ongoing	Very

		2002 Farm Bill.				
Federal Farm Bill 2002	United States Department of Agriculture/ Natural Resources Conservation Service	Enhances long-term quality of our environment and conservation of our natural resources. This bill provides several opportunities for receiving grants to improve water quality.	Federal Cost-Share and Incentive Programs		2002	Varies with BMP applied.
Federal Farm Bill (Swampbuster Ag)	United States Department of Agriculture / National Resources Conservation Services	Prohibits landowners participating in federal price support programs from converting forested wetlands to agriculture.	Federal			
Acquisition and Preservation of Riparian Buffers	Bartow County Greenspace Committee	Committee will buy land along Etowah River and plant or allow lands to return to original usage	SPLOST	Voluntary	Ongoing	Varies with extent of purchases
Conservation Reserve Program (CRP)	Natural Resources Conservation Services / USDA Farm Services Agency	Provides technical assistance, rental payments and cost share funding to address specific natural resource concerns including: protection of ground and surface waters, soil erosion and wildlife habitat. Eligible practices include tree planting, grassed waterways, wildlife habitat buffers, and shallow water area for wildlife and filter strips.	Federal, State, landowner	Cost-share	Ongoing	Varies
Continuous Conservation Reserve Program (CCRP)	Natural Resources Conservation Service	Conservation cost-share for best management practices such as fencing livestock out of streams; provides up to a 90-10% cost-share	Federal Annual rental payment for land taken out of production and 50% cost share for practice installation.	Cost-share	Ongoing	Varies with BMP applied.
Conservation of Private Grazing Land Program	United States Department of Agriculture / National Resources Conservation Services	This technical assistance will offer opportunities for: better grazing land management; projects for improving water quality include: protecting soil from erosive wind and water; conserving water; providing habitat for wildlife; sustaining forage and grazing plants.	Federal (Farm Bill 2002) This is not a Cost-Share Program.			Varies with BMP applied.
Conservation Security Program (CSP)	Natural Resources Conservation Services	This is the first program that rewards farmers and ranchers for high levels of environmental stewardship. Producers on cropland, orchards, vineyards, pasture and range may apply for CSP regardless of size, type of operation, or crops produced. Land in other cost share programs is not eligible. CSP will first be offered in watersheds with greatest potential for improving water quality, soil quality and grazing land condition, In 2005, the four watersheds of focus will be the Ichawaynochaway, Kinchagoonee-Muckalee, Middle Flint, and Upper Ochlockonee. An enhancement	Federal (Farm Bill 2002) Cost Share There is three tiers of involvement, which result in different expectations and cost share opportunities.			Effectiveness will vary with the specific application and must be individually determined.

		example is to install a riparian buffer.				
Georgia Best Management Practices	Georgia Department of Agriculture / Georgia Environmental Protection Division for enforcement action.	Informs those involved in the agricultural business of effective practices to minimize nonpoint source pollution.	State			Varies with BMP applied.
Stream Buffer Ordinances and Installation and Maintenance	Bartow County, Gordon County Building, Planning, and Development	Expand buffer ordinance to exceed State requirements by including stream buffer installation and maintenance requirements at recommended widths	General Fund	Recommended 2006		May vary
Stormwater Best Management Practices	Gordon County Building, Planning, Development	Implement recommended Best Management Practices to address Biota (Sediment)/ Habitat and other pollutants as detailed in the Phase II MS4 Stormwater Management Plan to include 1. Public Education and Outreach; 2. Public Participation and Involvement; 3. Illicit Discharge Detection and Elimination; 4. Construction Site Storm Water Runoff Control; 5. Post-Construction Storm Water Management in New Development and Redevelopment; 6. Pollution Prevention and Good Housekeeping related to municipal operations, reporting, monitoring and program implementation	General Fund	Recommended 2006		May vary
District-wide Septic System Maintenance	Gordon and Bartow Counties Environmental Health, Northwest Georgia Health District	Expand ongoing education and outreach to promote proper maintenance of private septic systems using DVD program	Homeowners with existing septic systems	Recommended 2006		

**MEASURES APPLICABLE TO INDIVIDUAL PARAMETERS**

PARAMETER 1	MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/IMPLEMENTED	EFFECTIVENESS (Very, Moderate, Weak)
FC	Rules and regulations for onsite wastewater management (Septic system permitting)	Bartow, Gordon Counties Department of Environmental Health	Regulates through permits and inspections of on-site sewage management systems; requires plumbers and other maintenance operators to submit monthly logs of pump-outs and maintenance done to systems	Bartow, Gordon Counties General Fund	Enforced	Ongoing	Very
FC	Sanitary Sewer Maintenance Program	Bartow County	Sanitary Sewer system inventory and inspection (mapping, television inspections); infiltration and inflow identification and reduction (flow monitoring, smoke testing); sewer line rehabilitation (pipe bursting, relining, cleaning) and manhole rehabilitation.	General Fund	Enforced	Ongoing	Moderate
FC	Pollution Prevention Litter Removal	Bartow County Solid Waste Director	Remove litter from County roads and properties using labor from State correctional facilities	General Fund	Ongoing	January 2004	Very
FC	Chapter 40-13-8 Animal Manure Handlers Rules of Georgia Department of Agriculture Animal Industry Division	Georgia Department of Agriculture	This requires that persons engaged in removing animal manure from livestock/poultry production areas, transporting animal manure on public roadways, or depositing animal manure to a premise other than its point of origin obtain a permit and follow rules to control animal disease, and outlines regulations for transportation, equipment and storage.	State			Effectiveness will vary with the specific application and must be individually determined.
FC	District-wide Septic System Maintenance	Gordon and Bartow Counties Environmental Health, Northwest Georgia Health District	Expand ongoing education and outreach to promote proper maintenance of private septic systems using DVD program	Homeowners with existing septic systems	Recommended 2006		
FC	Storm drain stenciling requirement	Bartow County	County ordinance requiring stenciling of storm drains by developers for new housing.		Enforced	2004	
FC	Storm drain stenciling	Keep Bartow Beautiful	Volunteers stencil storm water drains in older residential developments		Voluntary	2004	

**MEASURES APPLICABLE TO SPECIFIC PARAMETERS**

PARAMETER 2	MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/IMPLEMENTED	EFFECTIVENESS (Very, Moderate, Weak)
Biota (Sediment)	Get the Dirt Out	Coosa River Basin Initiative (CRBI), New Echota River Alliance	Volunteer training program for construction site inspection, identification of failure to use BMPs in construction activities	Donations, grants from foundations, and membership	Ongoing	2005	Moderate
Biota (Sediment)	Adopt-A-Stream, in conjunction with CRBI	Coosa River Basin Initiative	Water quality chemical and biological volunteer training and monitoring, stream clean-up, stream bank and habitat restoration, and visual stream surveys	CRBI is funded by donations, grants from foundations, and membership	Ongoing		Moderate
Biota (Sediment)	Georgia No-Till Assistance	Limestone Valley RC&D	Custodians of no-till equipment which reduces disturbance of topsoil when planting to reduce erosion and associated sedimentation	USDA NRCS, Counties, Energy Grant, others	Ongoing		Very
Biota (Sediment)	Georgia Better Back Roads	Limestone Valley RC&D	Program that funds projects where sealant treatment applied to dirt roads reduces erosion and silt build-up.	USDA NRCS, Counties, others	Ongoing		Very
Biota (Sediment)	Stream Buffer Ordinances and Installation and Maintenance	Bartow County, Gordon County Building, Planning, and Development	Expand buffer ordinance to exceed State requirements by including stream buffer installation and maintenance requirements at recommended widths	General Fund	Recommended 2006		May vary

**VII. MONITORING PLAN**

The purposes of monitoring are to obtain more data, to determine the sources of pollution, to describe baseline conditions, and to evaluate the effects of management and activities on water quality. Describe any sampling activities or other surveys - active, planned or proposed - and their intended purpose. Reference the development and submission of a Sample Quality and Assurance Plan (SQAP) if monitoring for delisting purposes.

**Table 6. MONITORING PLAN**

PARAMETER(S) TO BE MONITORED	ORGANIZATION	STATUS (CURRENT, PROPOSED, PLANNED)	TIME FRAME		PURPOSE (If for delisting, date of SQAP submission)
			START	END	
Total Suspended Solids	EPD, USGS	Current	Every 5 years- Current		Ongoing monitoring for listing, delisting of impaired streams

**VIII. PLANNED OUTREACH FOR IMPLEMENTATION**

List and describe outreach activities which will be conducted to support this plan and the implementation of it.

**Table 7. PLANNED OUTREACH**

<b>RESPONSIBILITY</b>	<b>DESCRIPTION</b>	<b>AUDIENCE</b>	<b>DATE</b>
Rolling Hills Resource Conservation and Development Council	Envirothon, a yearly district and state competition for high school students testing skills and knowledge of aquatics including water quality, and other environmental topics	High School Students	March 2006
Adopt-A-Stream, in conjunction with Coosa River Basin Initiative (CRBI)	Water quality chemical and biological volunteer training and monitoring, stream clean-up, stream bank and habitat restoration, and visual stream surveys	Individuals, families, school groups, civic clubs, and businesses	Ongoing
CRBI	Non-point source pollution education program	Elementary school students	Ongoing
Bartow Co. Director of Planning and Zoning	Comprehensive stormwater awareness training program	Bartow County Homeowner's Association	Ongoing since July 2004
Sherri Henshaw, Coordinator, Keep Bartow Beautiful	Teacher Training for Waste In Place, Project WET (Water Education for Teachers "to facilitate and promote awareness, appreciation, knowledge, and stewardship of water resources," Enviroscope (illustrates non-point source pollution in the classroom using tabletop model)	Teachers, students in grades K-12	Ongoing
Sherri Henshaw Coordinator, Keep Bartow Beautiful	Volunteer storm drain stenciling	Community	Ongoing
Sherri Henshaw, Coordinator, Keep Bartow Beautiful	Stormwater-related presentation materials provided to schools	Elementary and Middle schools	Yearly since October 2004
Sherri Henshaw, Coordinator, Keep Bartow Beautiful	Develop a speakers' bureau to provide outreach on storm water issues	Local civic groups	Ongoing since July 2004
Kathy Floyd, Bartow County Extension Agent	Articles on water quality written for local newspaper, ongoing outreach on water quality issues	Bartow 4-H Club, citizens	Ongoing
Sherri Henshaw, Coordinator, Keep Bartow Beautiful; Clean Water Campaign; Allatoona Community Association	Workshop on maintaining septic tanks. Topics: "Different Functions of Septic Tanks; How They Should Function; Common Causes of Failure; Maintenance For Longevity; Potential Contaminants in Effluent; Site Limitations"	Homeowners, Community	Proposed
Sherri Henshaw, Coordinator, Keep Bartow Beautiful; Clean Water Campaign; Diane Minick	Workshop on rain gardens for stormwater catchment from driveways and lawns.	Homeowners, Community	Proposed
Janice Granai, Park Naturalist, Red Top Mountain State Park	Demonstration rain garden at Red Top Mountain State Park with signage.	Homeowners, Community	Ongoing
Bartow County Board of Tax Assessors	Implement tax relief program for property owners who place conservation easements on all or part of properties, especially for greenspace on Timber lands	Property owners especially those with large timber holdings	Proposed
Gordon County Environmental Health	Implement ongoing education and outreach to promote proper maintenance of private septic systems	Homeowners with existing septic systems	Recommended 2006
Gordon County, USDA NRCS, Limestone Valley RC&D	Implement education and outreach on stream buffer installation and maintenance	Developers, landowners, school groups	Recommended 2006

New Echota River Alliance	Non-point source water education	Third, fourth grades	Yearly
Gordon County, County Extension Agent, Limestone Valley RC & D	Implement outreach and education on non-point source pollution through use of video "After the Storm," other materials	Developers, landowners, school groups	Recommended 2006
Bartow, Gordon Counties	<p>Stormwater Management Education and Outreach</p> <ul style="list-style-type: none"> <li>Complete Center for Watershed Protection's <u>Codes and Ordinances Worksheet</u></li> </ul>	General Public	2006
Bartow, Gordon Counties	<ul style="list-style-type: none"> <li>Consider Adopting 22 Model Development Principles as discussed in <u>Better Site Design: A Handbook for Changing Development Rules in Your Community</u> where applicable</li> </ul>	General Public	2007-2008
Bartow, Gordon Counties	<ul style="list-style-type: none"> <li>Implement education of community using After the Storm non-point source pollution video presentation on public access channels</li> </ul>	General Public	Ongoing
Coosa Valley RDC, stakeholders	<ul style="list-style-type: none"> <li>Reconvene Stormwater Working Group to include all counties, municipalities in Coosa Valley RDC area</li> </ul>	All counties, municipalities in Coosa Valley RDC area	2006
Coosa Valley RDC, stakeholders	<ul style="list-style-type: none"> <li>Will investigate 319 h non-point source pollution grant possibilities regarding funding for development of stormwater management training for municipal employees</li> </ul>	All counties, municipalities in Coosa Valley RDC area	2006
Bartow, Gordon Counties	<p>Riparian Buffer Education and Outreach</p> <ul style="list-style-type: none"> <li>Consider adopting relevant principles as detailed in 22 Model Development Principles as discussed in <u>Better Site Design: A Handbook for Changing Development Rules in Your Community</u></li> </ul>	General Public	2007-2008
USDA NRCS/FSA, County Extension Service	<ul style="list-style-type: none"> <li>Continue education and outreach to local communities through USDA NRCS/FSA, County Extension Service</li> </ul>	General Public, Homeowners	Ongoing
Coosa Valley RDC, stakeholders	<ul style="list-style-type: none"> <li>Will investigate 319 h non-point source pollution grant possibilities regarding purchasing and distribution of education materials encouraging homeowners to develop, maintain riparian buffers</li> </ul>	Homeowners	2006
Coosa Valley RDC, stakeholders	<p><b>Investigate Funding Sources</b> Will investigate 319 grant possibilities regarding development of a project to survey schools in Coosa Valley RDC service area to determine interest in and feasibility of water quality education, specifically on causes of non-point source pollution, importance of riparian buffers, and stormwater pollution prevention</p>	General Public	2006

**IX. MILESTONES/ MEASURES OF PROGRESS OF BMPs AND OUTREACH**

This table will be used to **track and report progress of management measures including BMPs and outreach**. Record milestone dates for:

- Accomplishment of management practices or activities    - outreach activities
- Installation of BMPs

to attain water quality standards. Comment on the effectiveness of the management measure, how much support the measure was given by the community, what was learned, how the measure might be improved in the future, and any other observations made. This table can be "pulled out" of this template and used to report and track progress.

**Table 8. MILESTONES**

MANAGEMENT MEASURE	RESPONSIBLE ORGANIZATIONS	STATUS		COMMENT
		PROPOSED	INSTALLED	
Components of Bartow County's NPDES Phase II Stormwater Management Plan: Public Education and Outreach <ul style="list-style-type: none"> <li>• School System Stormwater Presentations</li> <li>• E &amp; S Training Workshop</li> <li>• Speaker's Bureau</li> <li>• Stormwater Educational Materials</li> <li>• Stormwater Web Page</li> <li>• Newspaper Articles</li> </ul>	Keep Bartow Beautiful Coord.  Bartow County Dir. Engineering Keep Bartow Beautiful Coord. Bartow County Dir. Engineering County Engineer/ IT Director Bartow County Extension Agent	2004  2004 2004 2005 2005 2005	2004-2006  2004 Ongoing 2006 2006 2006	
Components of Bartow County's NPDES Phase II Stormwater Management Plan: Public Participation and Involvement <ul style="list-style-type: none"> <li>• Storm Drain Stenciling</li> <li>• River Clean-up</li> </ul>	Keep Bartow Beautiful Coord. Keep Bartow Beautiful Coord.	2003 2004	2004 2007	
Components of Bartow County's NPDES Phase II Stormwater Management Plan: Illicit Discharge Detection and Elimination <ul style="list-style-type: none"> <li>• Storm Sewer Map</li> <li>• Ordinance/Regulatory Mech. Evaluation</li> <li>• Illicit Discharge Detection/ Elimination Ordinance</li> <li>• Industry Database</li> <li>• Dry Weather Screening</li> <li>• Source Tracing/Removal Proced.</li> </ul>	Bartow County Bartow County Bartow County Engineer  Bartow County Engineer Bartow County Engineer Bartow County Engineer	2004 2004 2005  2005 2005 2005	2004-2006 2005 2005  2006-2009 2008 2006	
Components of Bartow County's NPDES Phase II Stormwater Management Plan: Construction Site Storm Water Runoff Control <ul style="list-style-type: none"> <li>• Ordinance Evaluation</li> <li>• Litter Control Ordinance</li> <li>• Development Plan Review</li> <li>• Stormwater Quality Site Inspections</li> </ul>	Bartow County Engineer Bartow County Engineer Bartow County Engineer Bartow County Engineer/ Inspection	2004 2005 2005 2005	2006 2006 2006 2006	

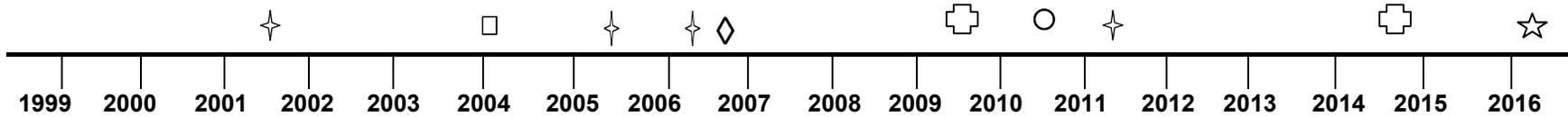
<ul style="list-style-type: none"> <li>Stormwater Quality Violation Plan</li> <li>Erosion &amp; Sedimentation Certification</li> <li>Citizen Complaint Hotline</li> </ul>	<p>Bartow County Engineer/ Inspection</p> <p>Bartow County Engineer Code Enforcement/ County Engineer</p>	<p>2005</p> <p>2005</p> <p>2005</p>	<p>2006</p> <p>2006</p> <p>2006</p>	
<p>Components of Bartow County's NPDES Phase II Stormwater Management Plan: Post-Construction Storm Water Management in New Development and Redevelopment</p> <ul style="list-style-type: none"> <li>Ordinance Evaluation</li> <li>Stormwater Management Ordinance</li> <li>Conservation Subdivision Ordinance</li> <li>Adoption of Stormwater Design Manual</li> <li>Countywide Watershed Assessment</li> <li>BMP Mapping</li> <li>Stormwater Management Facility Inspection &amp; Maintenance Program</li> <li>New Stormwater Management Facility Water Quality Assessment</li> </ul>	<p>Bartow County Engineer</p> <p>Bartow County Engineer</p> <p>Bartow County Engineer</p> <p>Bartow County Engineer</p> <p>Director- Water &amp; Sewer County Engineer</p> <p>Road Dept. Director/ County Engineer</p> <p>County Engineer</p>	<p>2004</p> <p>2005</p> <p>2005</p> <p>2003</p> <p>2005</p> <p>2005</p> <p>2005</p> <p>2005</p>	<p>2005</p> <p>2005</p> <p>2005-2006</p> <p>2003-2006</p> <p>2006-2010</p> <p>2005-2006</p> <p>2005</p> <p>2005</p>	
<p>Components of Bartow County's NPDES Phase II Stormwater Management Plan: Pollution Prevention and Good Housekeeping</p> <ul style="list-style-type: none"> <li>County Fleet Maintenance Fluids Recycling</li> <li>Employee Hazardous Materials Training</li> <li>Roadside Cleanup</li> <li>Evaluation, Implementation of Stormwater Pollution Prevention Plans for County Facilities</li> <li>Bring One for The Chipper</li> <li>Collection Centers</li> <li>Existing Pond Water Quality Assessment</li> <li>Vacuum and Jet Clean Storm Structures</li> <li>Illegal Dumping Control</li> </ul>	<p>Bartow County</p> <p>Solid Waste Director</p> <p>County Administrator/ Director, Water &amp; Sewer</p> <p>Solid Waste Director</p> <p>Director, Water &amp; Sewer</p> <p>Keep Bartow Beautiful Solid Waste Director</p> <p>Road Dept. Director/ County Engineer</p> <p>Road Dept. Director/ Stormwater Superintendent of O &amp; M</p> <p>Solid Waste Director</p>	<p>2004</p> <p>2004</p> <p>2004</p> <p>2005</p> <p>2005</p> <p>2005</p> <p>2004</p> <p>2005</p> <p>2005</p> <p>2005</p>	<p>2004-2006</p> <p>2004-2008</p> <p>2005</p> <p>2006</p> <p>2005</p> <p>2004</p> <p>2005-2007</p> <p>2005</p> <p>2005-2008</p>	
<p>Acquire lands along Etowah River for greenspace and riparian buffer preservation in County</p>	<p>Bartow County Greenspace Committee</p>	<p>2004</p>	<p>2004</p>	
<p>Workshop on proper maintenance of septic systems for Allatoona Community Association homeowners</p>	<p>Keep Bartow Beautiful Coordinator</p>	<p>2006</p>	<p>2006</p>	
<p>Metro North Georgia Water Planning District Model Storm Water Management Ordinances: Post Development Storm Water Management for</p>	<p>Bartow County</p>	<p>2005</p>	<p>2005</p>	

<b>New Development and Redevelopment</b>				
Metro North Georgia Water Planning District Model Storm Water Management Ordinances: Conservation Subdivision/ Open Space Development	Bartow County	2005	2005	
Metro North Georgia Water Planning District Model Storm Water Management Ordinances: Illicit Discharge and Illegal Connection Ordinance	Bartow County	2005	2005	
Metro North Georgia Water Planning District Model Storm Water Management Ordinances: Litter Control Ordinance	Bartow County	2005	2005	
Metro North Georgia Water Planning District Model Storm Water Management Ordinances: Stream Buffer Protection Ordinance	Bartow County	2005	2005	
Stormwater Management Education and Outreach				
<ul style="list-style-type: none"> <li>Complete Center for Watershed Protection's <u>Codes and Ordinances Worksheet</u></li> </ul>	Bartow, Gordon Counties	Summer 2006		
<ul style="list-style-type: none"> <li>Consider Adopting 22 Model Development Principles as discussed in <u>Better Site Design: A Handbook for Changing Development Rules in Your Community</u> where applicable</li> </ul>	Bartow, Gordon Counties	2007-2008		
<ul style="list-style-type: none"> <li>Implement education of community using After the Storm non-point source pollution video presentation on public access channels</li> </ul>	Bartow, Gordon Counties	Ongoing		
<ul style="list-style-type: none"> <li>Reconvene Stormwater Working Group to include all counties, municipalities in Coosa Valley RDC area</li> </ul>	Coosa Valley RDC, stakeholders	2006		
<ul style="list-style-type: none"> <li>Will investigate 319 h non-point source pollution grant possibilities regarding funding for development of stormwater management training for municipal employees</li> </ul>	Coosa Valley RDC, stakeholders	2006		Application deadline May 31, 2006. Yearly deadline.
Septic System Maintenance Education and Outreach				
<ul style="list-style-type: none"> <li>Investigate expansion of district-wide outreach component to homeowners to include those with existing systems</li> </ul>	Coosa Valley RDC, stakeholders	2006		
<ul style="list-style-type: none"> <li>Will investigate 319 h non-point source</li> </ul>	Coosa Valley RDC, stakeholders	2006		Application deadline May 31, 2006. Yearly deadline.

<p>pollution grant possibilities regarding septic system maintenance and repair project</p>				
<p>Riparian Buffer Education and Outreach</p> <ul style="list-style-type: none"> <li>Consider adopting relevant principles as detailed in 22 Model Development Principles as discussed in <u>Better Site Design: A Handbook for Changing Development Rules in Your Community</u></li> <li>Continue education and outreach to local communities through USDA NRCS/FSA, County Extension Service</li> <li>Will investigate 319 h non-point source pollution grant possibilities regarding purchasing and distribution of education materials encouraging homeowners to develop, maintain riparian buffers</li> </ul>	<p>Bartow, Gordon Counties</p> <p>USDA NRCS/FSA, County Extension Service</p> <p>Coosa Valley RDC, stakeholders</p>	<p>2007-2008</p> <p>Ongoing</p> <p>2006</p>		<p>Application deadline May 31, 2006. Yearly deadline.</p>
<p>Investigate Funding Sources</p> <ul style="list-style-type: none"> <li>Will investigate 319 grant possibilities regarding development of a project to survey schools in Coosa Valley RDC service area to determine interest in and feasibility of water quality education, specifically on causes of non-point source pollution, importance of riparian buffers, and stormwater pollution prevention</li> </ul>	<p>Coosa Valley RDC, stakeholders</p>	<p>2006</p>		<p>Application deadline May 31, 2006. Yearly deadline.</p>

**PROJECTED ATTAINMENT DATE**

**The projected date to attain and maintain water quality standards in this watershed is 10 years from acceptance of the TMDL Implementation Plan by Georgia EPD.**



- Scheduled EPD Basin Group Monitoring ✦
- TMDL Completed □
- Revised TMDL Implementation Plan Accepted ◇
- Plan Status Evaluation Report ⊕
- Plan Update or Revision, if Necessary ○
- Project Attainment for Plans Prepared in 2006 ☆

<b>Prepared By:</b>	<b>Julianne Meadows</b>		
<b>Agency:</b>	<b>Coosa Valley Regional Development Center</b>		
<b>Address:</b>	<b>P.O. Box 1793</b>		
<b>City:</b>	<b>Rome</b>	<b>ST: GA</b>	<b>ZIP: 30162</b>
<b>E-mail:</b>	<b><a href="mailto:jmeadows@cvrdc.org">jmeadows@cvrdc.org</a></b>		
<b>Date Submitted to EPD:</b>	<b>04/22/06</b>	<b>Revision:</b>	<b>01</b>

amended. ns

**APPENDIX A.**  
**STAKEHOLDERS**

List the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Sherri Henshaw, Coordinator, Keep Bartow Beautiful	P.O. Box 786	Cartersville	Georgia	30120	770.387.5167 Fax: 770.606.2382	<a href="mailto:henshaws@bartowga.org">henshaws@bartowga.org</a>
Melissa (Missy) Phillips, Director, TREESBartow	P.O. Box 786	Cartersville	Georgia	30120	770.387.5167 Fax: 770.606.2382	<a href="mailto:kbb@bartowga.org">kbb@bartowga.org</a>
Sherri Teems, National Resource Conservation Service	1401 Dean Street Suite I	Rome	GA	30161	(706) 291-5651 X 3	<a href="mailto:sheri.teems@ga.usda.gov">sheri.teems@ga.usda.gov</a>
Cindy Haygood Rolling Hills Regional Conservation and Development Council	P.O. Box 1550	Dallas	GA	30132	(770) 505-4288	<a href="mailto:Cindy.Haygood@ga.usda.gov">Cindy.Haygood@ga.usda.gov</a>
Keith Gilmer Georgia Soil and Water Conservation Commission	700 East 2nd Ave. Suite J	Rome	GA	30161	(706) 295-6131	<a href="mailto:K_gilmer@gaswcc.org">K_gilmer@gaswcc.org</a>
John Loughridge Georgia Soil and Water Conservation Commission	700 East 2nd Ave. Suite J	Rome	GA	30161	(706) 295-6131	<a href="mailto:J_loughridge@gaswcc.org">J_loughridge@gaswcc.org</a>
Steve Bradley County Administrator	135 West Cherokee Avenue Suite 241	Cartersville	GA	30120	(770) 387-5030	<a href="mailto:bradleys@bartowga.org">bradleys@bartowga.org</a>
Lamont Kiser Bartow County Engineer	135 West Cherokee Avenue Suite 241	Cartersville	GA	30120	(770) 387-5067	<a href="mailto:kiserl@bartowga.org">kiserl@bartowga.org</a>
Tammy Decker USDA Rural Development	12 Felton Place	Cartersville	GA	30120	(770) 386-3393	<a href="mailto:Tammy.decker@ga.usda.gov">Tammy.decker@ga.usda.gov</a>
Gene Camp Bartow County Water System	P.O. Box 850	Cartersville	GA	30120	(770) 387-5170	<a href="mailto:campg@bartowga.org">campg@bartowga.org</a>
Kenneth M. Akins Etowah Indian Mounds Site Manager	813 Etowah Indian Mound Road, S.E.	Cartersville	GA	30120	(770) 387-3747	<a href="mailto:Etowah_mounds@dnr.state.ga.us">Etowah_mounds@dnr.state.ga.us</a>
Jim Stafford City of Cartersville Water Department	P.O. Box 1390	Cartersville	GA	30120	(770) 387-5653	<a href="mailto:jstafford@cityofcartersville.org">jstafford@cityofcartersville.org</a>
Kathy Floyd	320 W. Cherokee Ave. Room	Cartersville	GA	30120	(770) 387-3747	<a href="mailto:Kpfloyd@uga.edu">Kpfloyd@uga.edu</a>

County Extension Agent	112					
Machelle Simmons, USDA Natural Resource Conservation Service	717 South Wall Street Suite 1	Calhoun	GA	30701	(706) 629-2582 X 3	<a href="mailto:Machelle.simmons@ga.usda.gov">Machelle.simmons@ga.usda.gov</a>
Kelly Cornwell, City of Calhoun Utilities	P.O. Box 248	Calhoun	GA	30703	(706) 629-4701	<a href="mailto:kcornwell@calnet-ga.net">kcornwell@calnet-ga.net</a>
Jerry Crawford, City of Calhoun Water and Sewer	P.O. Box 248	Calhoun	GA	30703	(706) 602- 6078	<a href="mailto:jcrawford@calnet-ga.net">jcrawford@calnet-ga.net</a>
Clayton Jones New Echota River Alliance	723 Culpepper Road SW	Calhoun	GA	30701	(770) 548-0263	<a href="mailto:claytonjones@coosa.org">claytonjones@coosa.org</a>
Sam Payne Gordon County Farm Bureau	2259 U.S. 41	Calhoun	GA	30701	(706) 629-3144	<a href="mailto:paynefrm@bellsouth.net">paynefrm@bellsouth.net</a>
Bob Peoples Peoples and Quayle, Inc						
Christy Blair Gordon County Environmental Health	318 North River Street	Calhoun	GA	30703	(706) 624-1440	<a href="mailto:chblair@dhr.state.ga.us">chblair@dhr.state.ga.us</a>
Tom Burgess, Dir. Gordon County Building, Planning, Development	Office in Gordon Co. Annex Bldg. P. O. Box 580	Calhoun	GA	30703-0580	(706) 629-0505	<a href="mailto:tburgess@gordoncounty.org">tburgess@gordoncounty.org</a>
Kathy Cox Gordon County Ordinance Enforcement Officer	Office in Gordon Co. Annex Bldg. P. O. Box 580	Calhoun	GA	30703-0580	(706) 629-4253	<a href="mailto:kcox@gordoncounty.org">kcox@gordoncounty.org</a>
Doug Cabe Limestone Valley RC & D	125 Red Bud Road NE, Suite 7	Calhoun	GA	30701	(706) 625-7044	<a href="mailto:dec@lvrcd.org">dec@lvrcd.org</a>
Steve Moraitakis Gordon County Extension Agent	P.O. Box 95	Calhoun	GA	30703-0095	(706) 629-8685	<a href="mailto:smorait@uga.edu">smorait@uga.edu</a>
Ross Wilburn City Engineer, City of Calhoun	P. O. Box 248	Calhoun	GA	30701	(706) 602-6024	<a href="mailto:rwilburn@calnet-ga.net">rwilburn@calnet-ga.net</a>
Rodney Buckingham Pickens County Planning and Development		Ellijay	GA		(706) 253-8850	<a href="mailto:Pickenscoplan-develop@ellijay.com">Pickenscoplan-develop@ellijay.com</a>
Bill Davidson USDA/NRCS	717 South Wall Street Suite 1	Calhoun	GA	30701	(706) 629-2582 X 3	
Marilyn Montgomery Farm Bureau	91 Cunningham Rd. SW	Calhoun	GA	30701		
Bill McMullen Georgia Power	Bin 76440 P.O. Box 200127	Cartersville	GA	30120		
Cathy Harrison City Administrator	P. O. Box 248	Calhoun	GA	30703-0248		
Roy Davis	P.O. Box 580	Calhoun	GA	30703-0580		

Gordon County Board of Commissioners						
Randall Dowling County Administrator	P.O. Box 580	Calhoun	GA	30703-0580		
Jimmy Phillips President, Gordon County Chamber of Commerce	300 South Wall Street	Calhoun	GA	30703		
Larry Pratt Adairsville City Manager	116 Public Square	Adairsville	GA	30103-2910	(770) 733-3451	
Honorable Doyle Penson Mayor of Adairsville	116 Public Square	Adairsville	GA	30103-2910	(770) 733-3451	

## REFERENCES

Coosa River Soil and Water Conservation District. USDA Natural Resources Conservation Service. (2005). *Big Cedar Creek Revised Watershed Plan and Environmental Assessment: Floyd and Polk Counties*.

Coosa Valley Regional Development Center, North Georgia Regional Development Center. (2003). *Northwest Georgia Water Supply Watershed Based Regional Source Water Assessments. Milestone 3: Identification of Potential Pollution Sources*.

Georgia Department of Natural Resources Wildlife Resources Division. (2006). 2006 Trout Stocking Information. Retrieved April 18, 2006 from <http://georgiawildlife.dnr.state.ga.us/Assets/Documents/fisheries/Stocking%20frequencies%20for%20website%2006rev2.pdf>

Georgia Department of Natural Resources Environmental Protection Division. (2004). *Total Maximum Daily Load Evaluation for Fifty-Eight Stream Segments in the Coosa River Basin for Fecal Coliform*. Atlanta.

Georgia Department of Natural Resources Environmental Protection Division, Watershed Protection Branch Watershed Planning & Monitoring Program. (N.d.) *Coosa River Modeling Project Study Plan Outline*. Atlanta.

Georgia Department of Natural Resources Wildlife Resources Protection Division. (2005). *Georgia Deer Management Plan*.

Georgia Soil and Water Conservation Commission. (N.d.). *Education/Certification*. Retrieved March 16, 2006 from <http://gaswcc.georgia.gov>.

Limestone Valley Resource Conservation and Development Council, Inc. (N.d.). *What is RC&D?* Retrieved March 16, 2006 from <http://www.lvrkd.org/whatis.html>

North Georgia Regional Development Center. (2005). *Northwest Georgia Regional Water Resources Partnership: Public Water and Wastewater Demand with Projections to the Year 2050*.

United States Environmental Protection Agency Region Four. (2004). *Total Maximum Daily Load (TMDL) for Sediment in Tallapoosa and Coosa River Basins: Carroll, Forsyth, Floyd, Bartow, Polk, Gordon, and Pickens Counties, Georgia*. Atlanta.

**APPENDIX B.**

**UPDATES TO THIS PLAN**

Describe any updates made to this plan. Include the date, section or table updated, and a summary of what was changed and why.

---

**APPENDIX C.**

**0315010207 Pine Log Creek Field Survey Photographs and Watershed Maps**

---

**Field Survey Photographs**

1. 0315010207 Pine Log Creek Cedar Creek to Salacoa Creek: Pine Log Road, wildlife have access to stream bank.



2. 0315010207 Pine Log Creek Bartow and Gordon Counties: Mt. Pleasant Rd Trees cut for timber harvesting



3. 0315010207 Pine Log Creek Bartow and Gordon Counties Hwy 53 Bridge: Row crops under water 1 of 2.



4. 0315010207 Pine Log Creek Bartow and Gordon Counties Hwy 53 Bridge: Row crops under water 2 of 2.



5. 0315010207 Pine Log Creek Bartow and Gordon Counties Slate Mine Road: Row crops previously under water.



6. 0315010207 Pine Log Creek Bartow and Gordon Counties: Mt. Pleasant Rd. Dirt road along creek.



7. 0315010207 Pine Log Creek Bartow and Gordon Counties: Calico Road Bridge runoff from pastures.



8. 0315010207 Pine Log Creek Bartow and Gordon Counties: Johnson Rd runoff from pastures and sediment bar.



9. 0315010207 Pine Log Creek Bartow and Gordon Counties: Calico Road Bridge, upstream flooding.



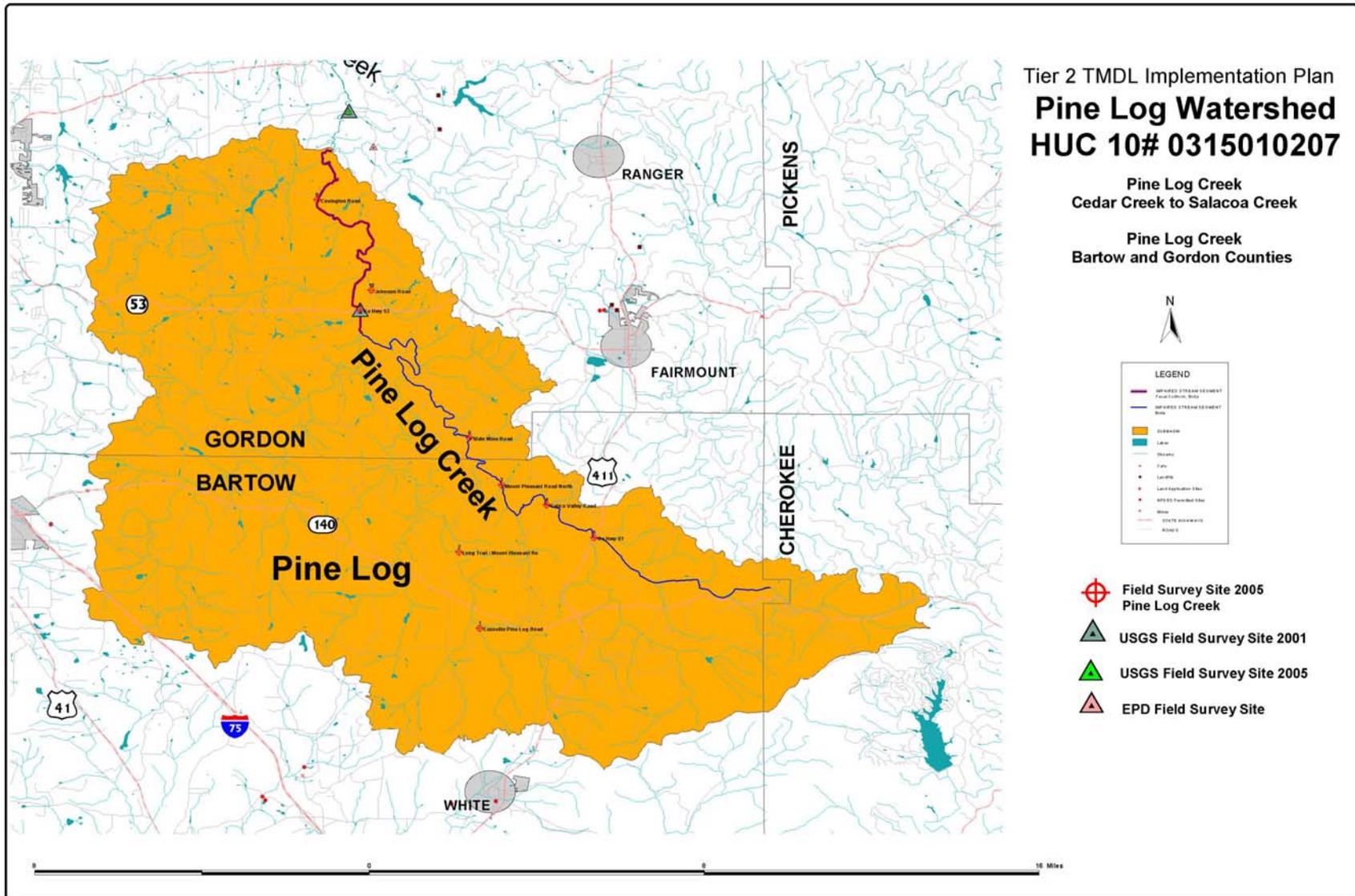
10. 0315010207 Pine Log Creek Cedar Creek to Salacoa Creek: Covington Rd runoff from hay pastures in area (1 of 2).



11. 0315010207 Pine Log Creek Cedar Creek to Salacoa Creek: Covington Rd runoff from hay pastures in area (2 of 2).



0315010207 Pine Log Creek  
Watershed Map



Tier 2 TMDL Implementation Plan  
**Pine Log Watershed**  
**HUC 10# 0315010207**

Pine Log Creek  
Cedar Creek to Salacoa Creek

Pine Log Creek  
Bartow and Gordon Counties



**LEGEND**

- IMPAIRED STREAM SEGMENT - FINESTORABLE SEDIMENT
- IMPAIRED STREAM SEGMENT - Silt
- WATERSHED
- Lake
- Stream
- City
- County
- Local Population Data
- USGS Population Data
- Water
- STATE HIGHWAYS
- ROADS

- Field Survey Site 2005 Pine Log Creek
- USGS Field Survey Site 2001
- USGS Field Survey Site 2005
- EPD Field Survey Site