

STATE OF GEORGIA
TIER 2 TMDL IMPLEMENTATION PLAN REVISION 1
 South Chickamauga
 Tennessee River Basin
 April 28, 2006

Catoosa County Government and the Cities of Ringgold and Ft. Oglethorpe

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.

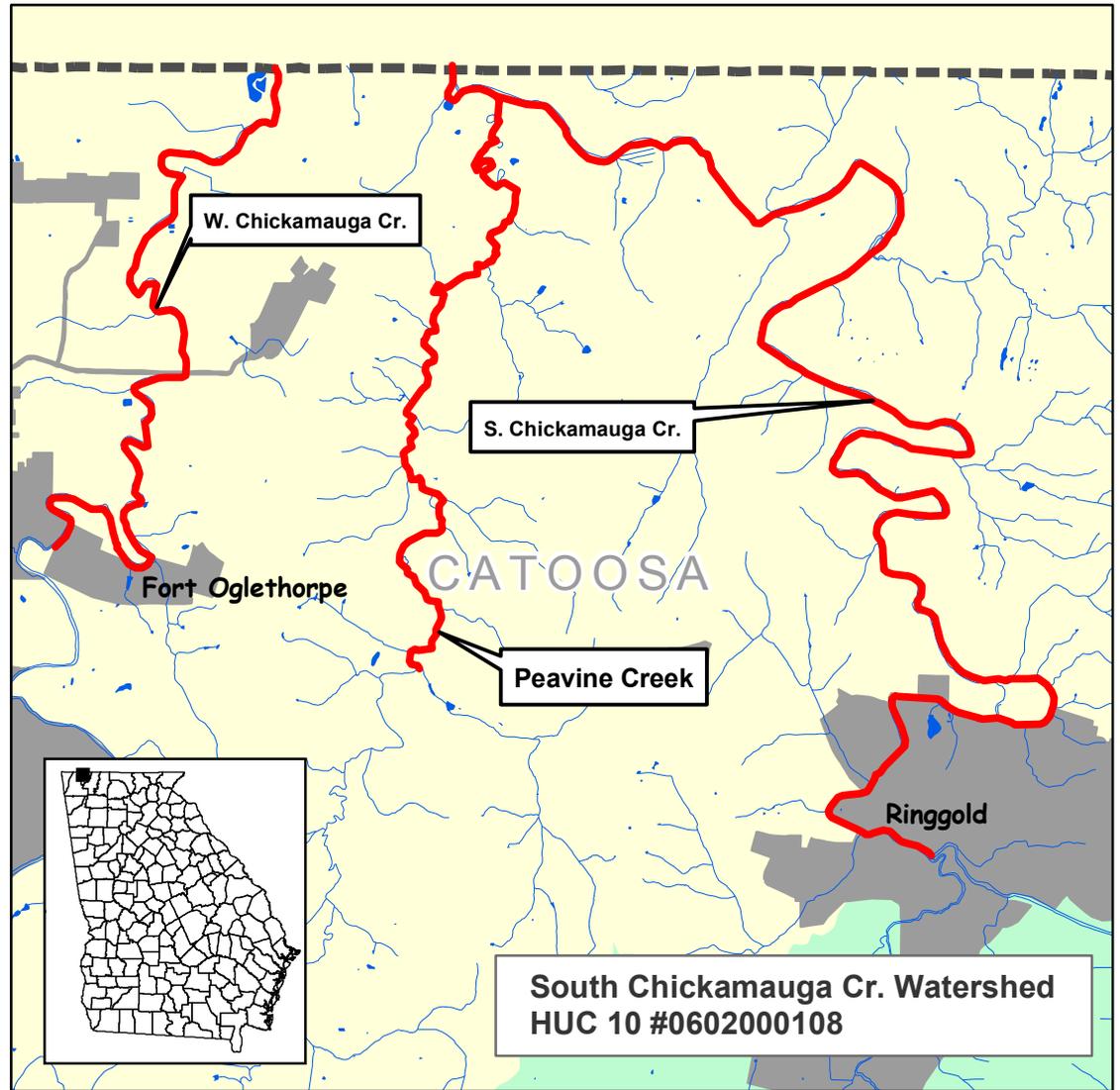


Table 1. IMPAIRMENTS

IMPAIRED STREAM SEGMENT	IMPAIRED SEGMENT LOCATION	IMPAIRMENT	TMDL ID
Peavine Creek	Upstream South Chickamauga Creek	Fecal Coliform Bacteria	TEN0000034
South Chickamauga Creek	Ringgold to State Line	Fecal Coliform Bacteria	TEN0000025
West Chickamauga Creek	Hwy 2 to State Line	Fecal Coliform Bacteria	TEN0000016
Peavine Creek *	Upstream South Chickamauga Creek	Biota (Sediment)	TEN0000017

* Plan will be written by GA EPD

II. GENERAL INFORMATION ABOUT THE WATERSHED

Write a narrative describing the watershed, HUC 10 #0602000108. 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.

South Chickamauga Creek flows north through Catoosa County skirting the southern edge of the City of Ringgold then meanders further to the northeast, draining the western slope of Taylor's Ridge. **Peavine Creek** flows through the center of Peavine Valley, an area known internationally for horse pastures and boarding ranches. The steep slopes of Peavine Ridge east of the valley contain the stream until it converges with South Chickamauga Creek less than a mile from the Tennessee State line. **West Chickamauga Creek** flows north through Walker County into Catoosa County in the western part of the watershed, entering South Chickamauga Creek just inside the State of Tennessee. The watershed drains a total area of 422 square miles.

The watershed is part of the Ridge and Valley physiographic province. The most common underlying rocks here are shale, slate (Southern Slate Ecoregion), dolomite, and limestone. Dolomite and limestone are porous rocks that can be found in aquifer forming layers that have cracked and faulted in the mountain building process. The high level of meander may be due to the streams need to negotiate rock formations. Valley streams of the Ridge and Valley province flowing over beds of exposed limestone have been found to have "high levels of conductivity" – '84 TN Basin Report.

The main source of drinking water in Catoosa County is localized ground water from Yates Springs. The springs have a constant flow and cool temperature year 'round. Catoosa County has purchased acreage in the watershed to protect the springs, most recently ninety acres. To supply the remainder of the county's drinking water they purchase a million gallons per day from Tennessee American Water Company. The City of Ringgold has its' primary intake for the city's water supply on South Chickamauga Creek. They are the largest permitted water user. Ringgold also has a small water treatment plant on Depot St. with three pumps each able to pump one million gallons per day.

Land use –

This watershed has far and above more of its' land devoted to pasture and hay (26%, 22%, and 21% respectively) than other watersheds surveyed. Correspondingly, percent of acreage devoted to forest is lower than other watersheds (64%, 69% and 70%) Agriculture has traditionally not been a prominent player in the economy of the watershed although NCRS reports that row crops and poultry farming are on the rise. There are many new homes on large lots in the watershed that appear to have been constructed within the past 10 years (since this land use data was compiled).

The land use statistics given below represent the contributing watersheds as follows:

Peavine: forest 64.4%, pasture/hay 26.3%, row crops 4.3%, high intensity residential, high intensity commercial, industrial and transportation, combined 3.4%, other grasses 0.8%, transitional 0.6%, open water 0.1%.

South Chickamauga: forest 69.9%, pasture/hay 22.1%, row crops 3.9%, high intensity residential 1.7%, transitional 1.2%, high intensity commercial 0.7%, other grasses 0.5%, and open water 0.1%.

West Chickamauga: forest 70.3%, pasture/hay 22.3%, row crops 3.6%, high intensity residential 1.7%, other grasses 0.8%, high intensity commercial/ industrial 0.5%, transitional 0.4%, and open water 0.2%

Source: "Total Maximum Daily Load Evaluation for Nineteen Stream Segments in the Tennessee River Basin for Fecal Coliform" Submitted by The Georgia Department of Natural Resources. January 2004.

Point Sources:

- Ringgold WPCP – Permit #GA0025615 – South Chickamauga is receiving stream
- Walker Co. WPCP – Permit #GA0020478 – West Chickamauga is receiving stream
- DOT Sra #41/I-75 tourist welcome – unnamed tributary to Peavine (*difficulty finding permit#*)
- Morris Estates WP – Permit #GA0050130 to South Chickamauga Creek – they have a minor violation for exceedence of their permit in 2004
- Ft. Oglethorpe STP – Permit #GA0035301 on Hwy 146 directly adjacent to West Chickamauga Creek – This is a sewage treatment plant only now, waste is sent to Mocassin Bend Treatment Plant in Tennessee
 - City of Fort Oglethorpe sewer system was issued an Enforcement Order from EPD for unpermitted discharges/spills to waters of the state in January 2005. The requirements of the order were to secure a professional engineer to conduct a proper study of the entire collection system, and allow additional sewer connections only in areas upgraded.
- Reichold Chemicals – Permit #GA0000051 to West Chickamauga
- Shaw Industries (former Salem Carpet Mills acquired by Shaw in 2001) – to South Chickamauga (*difficulty finding permit#*)

Mines:

- Roy Young Estate Mining Site – 1030 Boynton Dr. Surface mining permit #1164-97
 - Cloud Springs Road Facility – Permit #1443-05 Was issued an enforcement order in February 2005, is now in compliance. Stakeholders remarked on unpermitted mining "from time to time" in the watershed.
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Peavine 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
Peavine Creek	Upstream South Chickamauga Creek	8	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	1000 per 100 ml (geometric mean Nov-April) 200 per 100 ml (geo. Mean May-Oct)	Wildlife Agricultural/Livestock <ul style="list-style-type: none"> • Animal grazing • Animal access to streams • Application of manure to pastureland and cropland Urban Development <ul style="list-style-type: none"> • Leaking septic systems • Landfills 	82 percent from all sources

South Chickamauga 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
South Chickamauga Creek	Ringgold to State Line (Catoosa County)	15	Fishing	NS

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West Chickamauga 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
West Chickamauga Creek	Highway 2 to State Line (Catoosa County)	7	Fishing	NS

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

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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

The land cover data indicates that, overall more land in this watershed is devoted to pasture and hay than all the other watersheds surveyed. In turn, the percent of watershed forested is lowest in this watershed indicating perhaps conversion of forestland to agricultural (pasture) or residential uses. During the field survey many horse farms and cattle pastures were noticed. Buffers do exist although there are breaks in them. New residential development is cited all along the streams and often grass is mowed clear to the banks.

In the other areas are many older homes and trailers located extremely close to stream. The likelihood of leaking septic systems is high.

In 2003 The Coosa Valley Regional Development Center and the North Georgia Regional Development Center submitted their “Inventory of Potential Pollution Sources as part of their contract with Georgia EPD and The Georgia Environmental Facilities Authority to conduct Regional Source Water Assessments. The objective was to identify potential pollution sources upstream of a drinking water intake. Their report identified turbidity as the most notable pollution problem at the plant. Normal turbidity is about 5-7 NTU, but it can go to 400 or 450 following a heavy rain/ Since the watershed is mostly rural it is likely that fecal coliform levels spike following rainfall as well”.

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 effected, the stream miles effected, 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

PARAMETER 1	POTENTIAL SOURCES	ESTIMATED EXTENT OF CONTRIBUTION	ESTIMATED MAGNITUDE OF CONTRIBUTION	COMMENTS
Fecal Coliform Bacteria	Agricultural /livestock, hobby farms	Throughout	Moderate	Very high % pasture, known for horse farms

	Agricultural / pasture	Throughout	Moderate	Very high % pasture
	Leaking septic systems	Eastern Georgia region of watershed – Graysville area	Moderate	Sewer to be expanded in that area
	Wildlife	Rural areas of watershed	Moderate	

062705 – pictures #22-39

FIELD NOTES

6/22/05

Jill Joss

Wx : 92 degrees and Sunny, humid

SOUTH CHICKAMAUGA CREEK

I. Blackwell Cemetary at Tennessee/Georgia border approx. ½ mile NE of the confluence of Peavine Creek and South Chickamauga.

This is a possible tributary to stream Area of eutrophication, no flow here, unclear what source of algae growth is. Stream is to the south of this area.

II. After crossing Rd. Bridge @ Graysville, traveled west on road beside Graysville Elementary, past trailer park (possible source of fecal contamination) , down small road to right to get close to stream at this point, this was private property, not having access to stream.

III. & IV. Graysville – down unnamed road to right, across from Castlevew Dr.

#22.) High end homes, large lots, some under construction.

#23.) Swanson Mill gaging station on this bridge, slow flow and water slightly murky. Note well-buffered streambanks.

#24.) High end house on left - spillway to the stream extends across the creek here.

V. Ross Hollow Rd.

this area is floodplain, the buffer zone is very thick here. The east bank of the stream has extremely steep slopes while the west bank remains floodplain. Private drives with “no trespassing” signs prevented getting photos here but one can see the stream flowing just beyond backyards of homes.

VI. Road west of Hwy. 3 . Small roads extend north of this road and dead end within ½ mile of stream. The area is dominated by older trailers on both sides of the road possibly on septic systems or with straight pipes leading to stream.

VII. Camp Canaan – across from Goodson Bend in stream

#26.) Stream as seen from the dead end of this road, looking South, water is very murky, slow flow, but good buffer zone

Steep slopes, small tributary, beach ball is at bottom of hill to give perspective on slope.

VIII. Housing development ½ mile past Catoosa Church, many new driveways, increase in impervious area . New homes come within 50 ft of the stream without a buffer in places.

#28.) Example of drainage ditches paved in new development

IX. More subdivision activity

X. Just prior to rd bridge on outskirts of Ringold, many urban influences on stream. **#29.)** Large high pressure pipe – approx. 12 ft. tall, unclear of its' purpose. At this location a silt fence is buried by red clay.

XI. Hwy 151 1 mile S. of Hwy 41 – Candlewick Yarns and Salem Carpet Mills are approx . 1 and 2 miles southeast of stream respectively.

#30.) Looking upstream

#31.) Looking downstream

#32.) Same stretch of stream as viewed from embankment above in Sonic Restaurant parking lot.

#33.) Grease trap of Sonic restaurant

#34. & 35.) Indicating grease spill leading from dumpster area down to the drainage opening which spills out into stream.

XII. Hwy 151 and I-75 junction – rd. bridge

#36 - 39 Note individual doing some invertebrate sampling in photo. Water flowing well, photo taken looking downstream. Many urban influences on stream at this point

Disc 062705 – pictures #40 - 49

FIELD NOTES

6/22/05

Jill Joss

Wx : 92 degrees and Sunny, humid

WEST CHICKAMAUGA CREEK – Hwy 2 to Stateline

This segment of W. Chickamauga Creek has a wide floodplain on either side.

I. Hwy 2 road bridge over stream

#40). Upstream – water very murky, very thick buffer zone, influenced by urban runoff from highway.

#41 & 42). Downstream – good flow, vegetation along bank and in stream.

#43.) At top of hillside silt fence has partially failed.

Approx. 1 mile E. of Hwy 2 bridge, Sycamore Bend curves near the highway and then flows north. A pond is located just across Hwy 2 from the bend and appears to extend a small tributary to the stream.

Dietz Rd. goes N. roughly paralleling the stream, area is heavily wooded between road and stream so that stream was not visible.

II. Dyer Bridge Rd. – Bridge over stream. South of the stream is pasture, North of the stream is a car wash, both of which may impact.

#44.) Upstream - heavily wooded area, good flow to stream, however murky in color, vegetation along banks on either side.

#45.) Downstream - same

III. Hwy 146 just W. of Dyer Bridge – sewage disposal pond to SW of stream.

- IV. Proceeded N. up Mack Smith Rd. to Elizabeth St.
#46.) Septic Service truck parked in driveway – access to stream very nearby. Elizabeth St. and Lillian Rd. are two gravel roads that each dead end within 500 yds. of stream. Along the roads is older housing, several outhouses were seen. A petroleum pipeline crosses the stream at this location.
- V. 1 mile N. up Mack Smith Rd. more older housing and trailers possibly on septic systems. End of street comes within 500 ft. of stream. Pumping station located on opposite side of stream.
- VI. **#47.)** Ft. Oglethorpe Sewage Treatment Plant -in operation?
- VII. Scruggs Rd. runs SW of the state line. On the E. side are the very steep slopes of Boynton Ridge. The stream flows N approx. .5 miles to the W. of Scruggs Rd.
#48.) Mud, land disturbance, marshy area, recent flooding
- VIII. Rd. to W. of Scruggs Rd. approx .5 miles NW of Hwy 146
Old housing and trailers line this road which extends down to dead end a ¼ mile from stream. Possible septic system influence
#49.) Similar to above, mud, land disturbance, race track at bottom, wetlands.

FIELD NOTES

6/17/05

Jill Joss

Wx : 92 degrees and SUNNY

#29 PEAVINE CREEK

I. Down Three Notch Road approx. 2 miles south of Hwy 2. A sedimentation pond is just opposite the road from creek.

1.) Upstream - water is cloudy and murky with a slow flow. Banks are heavily vegetated.

#2.) Downstream view – lily pads abound

#3.) Same area - overall muddy, heavily wooded buffer.

II. Intersection - Old Mill Rd. and Old Mill Ln.

#4.) Looking upstream - Water still murky here but very good flow. Rock rip-rap lines channel. Plant nursery approx. 500 ft. from stream.

#5 & 6.) Attempt at rip-rap leading from highway to stream

#7.) Road bridge – looking downstream from bridge – largely urban influences (impervious road surfaces, runoff problems)

#8 & 9.) Potential for runoff from highway.

#10.) Ditch carries runoff to stream approx. 50 ft. to east.

#11.) Sedimentation pond for runoff from local commercial activity.

#12.) Sanitary sewer approx. 20 ft. from the outfall shown in picture.

#13.) Looking d/s at creek, no tree buffer but grounds vegetated all the way to the creek bank.

#14.) Opposite end view of ditch pictured in #10

III. Highway 3 Rd. Bridge

#16.) Taken looking u/s, water is fairly clean with a good flow to it, vegetation lines the stream and its' banks

#17.) Unidentified pipes coming out of the ground approx. 30 ft, from stream.

#18.) Horse pasture

#19.) Downstream muddier, still flowing well, well-vegetated banks

IV. Wooten Rd.

#20.) Large horse pasture. Stream directly beyond trees at left .

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.

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

The mailing list for the first meeting included all officials from the cities and counties in the watersheds for the impaired streams. A notice about the 303(d) listed streams, a general handout on the TMDL process, and an RSVP form were mailed to each of the 136 individuals on the list (see attachment)

Outreach for the second meeting included over 200 poultry farmers in the watersheds added to the mailing list. A similar letter was sent to all of those notified of the first meeting as well as the added farmers, watershed groups, educators, and other stakeholders identified at the first meeting or by additional outreach.

The mailing for the third meeting in December was supplemented by posting of flyers in the watershed community. 10-15 flyers were posted/handed out for each 10-digit HUC in an attempt to attract and educate more of the public-at-large (see attachment). The meeting was purposely scheduled during evening hours to allow for broader participation. The Stakeholder Advisory Groups were formed, including individuals who had attended one or more of the past stakeholder meetings. Where we discovered key stakeholders that had not yet participated, they were included even at the late date.

May 18, 2005 TMDL Stakeholder Meeting held at the Walker County Civic Center for the streams in the Tennessee Basin (17 attendees)

A powerpoint presentation introduced the TMDL process and contractor's responsibilities under the contract as well as milestones and timelines. The meeting was opened for general discussion afterward. Government officials were told that part of the process would be to review what management measures (i.e. ordinances, previous water planning efforts, etc.) are currently in place to address fecal coliform impairments in the streams. Stakeholders questioned how the requirements for stormwater planning coincide with the TMDL requirements. Watershed Protection Plans can go a long way toward fulfilling these requirements. Some questioned the State Legislature's passing of legislation that reduces the minimum requirements for stream buffers and measures threatening legal problems around the issue of easements as "takings issues". The agricultural community discussed some of the work that they do with buffers and fencing. They shared that they have been involved in this kind of

process before and hopes that the end result is not to decrease the agricultural development or input. Providing a buffer zone for row crop farmers may decrease their crop area and yield. Some wondered about methods to determine whether the source of bacteria is human or animal in origin. Geese and ducks are in abundance in some areas and contribute to the load. It would be easier to target best management practices if the source could be somehow narrowed down.

It was suggested that most of the cause of non-point pollution to the waters is urban runoff. Others recommended that counties that border one another gather information and work toward addressing these issues together. It was explained that this process is intended to foster partnerships within the watershed to work towards solutions.

August 31, 2005 TMDL Stakeholder Meeting held at Walker County Civic Center for the streams in the Tennessee Basin (24 attendees)

The meeting opened with the showing of two videos, "TMDLs in Georgia" and "When Red Clay Meets Blue Water". A powerpoint presentation followed and findings and photos from the field survey were shared. Discussion followed as a brainstorming session on sources and best management practices. The NRCS shared their efforts in the watershed to help farmers with funding for buffers, greenspace development, grasslands, and fencing livestock out of waterways. Currently the bulk of the funding is targeting poultry growers. The Georgia Soil and Water Conservation Commission spoke to the new requirements for those involved in land disturbing activities to become certified in Soil and Erosion control. This will need to be accomplished by the end of 2006.

Discussion moved to the challenges faced by leaking and failing septic systems as sources of bacteria. The local water utility tests well water samples for the public and they see well water failures due to neighboring septic systems. The county health departments have records on recent permitting for septic tank installation but no records indicate those in need of maintenance or pumping out. Homeowners are usually not aware of the problem until it fails. TVA has done pollution inventories by arial infrared photography to help identify failing systems. Local officials would like to get more customers on sewer systems, but cannot get the permitted output needed to accommodate the increased flow. One stakeholder suggested a state law be passed mandating sewer line connections if a home is located so many feet from sewer service. A TVA official discussed the concept of on-site wastewater treatment systems as alternatives and stated that The State of Tennessee is very receptive to these systems if they are managed properly.

The meeting was adjourned and participants were told they would be notified about the next meeting.

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 6, 2005 Stakeholder Meeting held at the Walker County Civic Center (14 attendees).

Stakeholders were also contacted individually to introduce the TMDL implementation process and to invite input into the implementation plans as members of the advisory committee.

The Catoosa County Stakeholder Advisory Group (SAG) met on February 16 at the Walker County Civic Center (6 attendees) to review the plans prior to turning in the rough drafts. Due to inadequate representation from the County, an additional meeting has been scheduled and the Catoosa and Walker Counties will convene as one Tennessee Basin Stakeholder Advisory Group.

The Catoosa County SAG combined with the Walker County SAG to form the Stakeholder Advisory Group for each of the 10 listed streams in the Tennessee Basin in Georgia. The group met at the Walker County Civic Center February 23 from 6:00 pm to 8:00 pm. Present were: Brandon Whitley with Walker County Water and Sewer, Kelia Kimbell, Walker County Planning and Development, Allen Ridley, Catoosa County Building and Inspection, Suzanne Cobos, Catoosa County Special Projects Coordinator, Linda Harris, TVA, Mrs. Dee Collins Parker, Chattanooga Valley Residents' Association, Jill Joss, and Julie Meadows, Coosa Valley RDC.

Representatives from each county discussed the new sewer and where it is being located in the watershed. In each case if an older system can be used it will be pumped out, but if they are failing or crumbling they will be taken out. Environmental education on non-point sources of pollution was discussed among stakeholders with sharing of initiatives and a willingness to work together to discuss new opportunities. The group discussed the different land development regulations, i.e. requirements to hook up to sewer when available, requirements for building on floodplains, wetland building requirements, etc. and challenges of implementing them and lessons learned. The new Erosion and Sedimentation Certification required of those involved in land-disturbing activities was discussed and stakeholders felt it will help. Funding availability through the 319 grant program was discussed. Group was informed that the contractor will meet with EPD to discuss the types of activities expected to receive funding this cycle. The meeting concluded with the announcement that the contractor would like to hold monthly meetings between March and June to continue the process. All agreed and the meeting was adjourned.

Stakeholder input on sources: Cindy Askew – USDA/NRCS. Reported that there are virtually no row crops to speak of in Catoosa County, only annual food plots. The agricultural industry is expanding, although more in the areas of pastureland and poultry production. This combined with the reality of there being less and less land for litter application means there will be more pressure on poultry farmers in terms of managing their waste.

Allen Ridley, Chief Building Inspector and Director of Stormwater Management in Catoosa spoke to pressures from rapid development of the area. The City of Fort Oglethorpe and City of Ringgold are competing for lands in between. Fort Oglethorpe has been aggressively annexing based on the promise of sewer. The City of Fort Oglethorpe's WPCP is reportedly over capacity and being scrutinized for violations and so is possibly not well-positioned to assimilate the new growth it is courting.

Although new sewer line is being installed in the county (9 miles of new sewer line in City of Ringgold is currently underway) , they are discovering that many of the sewer lines running from individual homes to connect with the new sewer are old, corroding, and allowing seepage of stormwater into the system. This places an additional burden on the treatment plant.

In the process of a construction boom, land disturbance activity in the watershed is being monitored and ordinances enforced by the EPD. being at a fixed fee of \$1,000 per violation (below the threshold to be considered a major spill) most developers simply add them to the cost of doing business, pay the fines and continue work.

Ron Brown, the Assistant County Manager in Catoosa has reported that there are natural conditions in the watershed that contribute to low dissolved oxygen levels in the streams.

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
Allen Ridley – Chief Building Official – Catoosa County	184 Tiger Trail Ringgold, GA 30736	Ringgold	GA	30736	(706) 965-4226	allen.ridley@catoosa.com
Cindy Askew – Natural Resources Conservation Service	208 N. Duke St. Suite C Lafayette, GA 30728	Lafayette	GA	30728	(706) 638-2207 X3	cindy.askew@ga.usda.gov
Charles Lancaster – Cooperative Extension Service	43 Maple St.	Ringgold	GA	30736	(706) 935-4211	clancast@uga.edu
Bill Clark – Chairman, Catoosa County Board of Commissioners	P.O. Box 8	Ringgold	GA	30736	(706) 905-7438	bclark@catt.com
Ron Brown – Assistant County Manager – Catoosa County	7698 Lafayette St.	Ringgold	GA	30736	(706) 965-2500	ron.brown@catoosa.com
Dena Haverland – Regulatory – Water/Wastewater Engineering, Dalton Utilities	1200 V.D. Parrott, Jr. Parkway	Dalton	GA	30722-0869	(706) 529-1010	dhaverland@dutil.com
Keith Gilmer - Georgia Soil and Water Conservation Commission	700 E. 2 nd Ave.	Rome	GA	30161	(706) 295-6131	kgilmer@gaswcc.org
Denise Clopton or Frank Redmond – Field Representatives - Sen. Johnny Isakson	214 Magnolia St	Lafayette	GA	30728	(770) 661-0999	Denise Clopton@isakson.senate.gov
Linda Harris – Sr.	1101 Market St.	Chattanooga	TN	37402-2801	(423) 876-4178	lbharris@tva.gov

Water Resources Representative – Tennessee Valley Authority	PSC 1E					
Donnie Brown – Lab Analyst - Catoosa Utility District	1058 Old Mill Rd.	Ringgold	GA	30736	(706) 937-9370	n/a
Mike Cannon – Catoosa County Environmental Health Department	182 Tiger Trail	Ringgold	GA	30736	(706) 935-6322	
Bill Henderson – soil conservationist					(706) 935-5263	bill.henderson@catoosa.com
Suzanne Cobos – Catoosa Co. Government Project Administrator	208 N. Duke St.	Lafayette	GA	30728	(706) 965-2500	suzanne.cobos@gmail.com
Chris Rader – City of Fort Oglethorpe	500 City Hall Dr.	Ft. Oglethorpe	GA	30742	(706) 866-2544 ext. 12	ncrader@fortogov.com

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	FUNDING SOURCE	STATUS	ENACTED
Federal Clean Water Act, Section 305(b) and 303 (d)	USEPA, Georgia DNR EPD, Catoosa 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	
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,	Federal, Georgia, Catoosa County	Enforced	11/1964

		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.			
Georgia Erosion and Sedimentation Control Act, Construction Permit	Catoosa County, Georgia DNR/ EPD, Georgia Soil and Water Conservation Commission	County 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	Catoosa County	Enforced	
Georgia Mountain and River Corridor Protection Act	State and local governments	Mountain and River Corridor Protection Act requires local governments to provide a 100-foot buffer on large rivers.			
Georgia Planning Act	State and local governments	Water supply watershed protection requirements including stream buffer requirements and SWAPs. The Georgia Planning	State	Enforced	1989

		Act calls for protection of streams that flow into reservoirs or are upstream from drinking water intakes.			
Local ordinances	Catoosa County	Ordinance to protect the water supply watersheds in county	County	Enforced	
Local ordinances	Catoosa County	Ordinance to protect the groundwater recharge areas of county	County	Enforced	
Construction Storm Water Discharge NPDES Permit	Georgia DNR/ EPD	General storm water permit for stand-alone construction sites; infrastructure permits; and common developments. Requires implementation of Erosion, Sedimentation and Pollution Control Plan plus monitoring of discharge for compliance with Georgia's in-stream water quality standards.	State	Enforced	
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	
Phase II NPDES Storm Water Permit for Small MS4	Georgia DNR & EPD, Catoosa County	Requires local jurisdictions to develop a comprehensive Storm Water Management Program (SWMP) to include 1. Public	Catoosa County	Enforced	NOI submitted to EPD in Decem They have revised and resubmi outfalls are mapped (by Novem should have an approvable plan

		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.			3 of these ordinances (Illicit discharge, Post-construction management, and Pollution Prevention Good Housekeeping have been being reviewed by the County A
Watershed Assessment and Protection Plan for Phase II NPDES Permitting	Catoosa 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	Catoosa County	Enforced	

		possible funding sources; establish current status and/or date measures will be initiated, and expected effectiveness; and design educational and outreach activities for intended audiences.			
Sanitary Sewer Maintenance Program	City of Ringgold	Program aimed at homeowners to find breaks in sewer lines using smoke testing. By monitoring for extra water in system they keep sewage treatment costs low	City of Ringgold	Enforced	Ongoing
Georgia Best Management Practices (Agriculture)	Georgia DNR/EPD	Informs those involved in the agriculture business of effective practices to minimize non-point sources of pollution	Georgia		
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 2002 Farm Bill.	Federal, State		Ongoing
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		Ongoing
Catoosa County Stormwater Management General	Catoosa County	Offering general guidelines, bmp's, stormwater management plan minimum requirements, design checklists, stormwater			August 2000

Standards and Guidelines		permits and fees, erosion control affidavit, post-development conditions drainage map and sediment and erosion control plan.			
Municipal Ordinance – Flood Damage control	Catoosa County Code Chapter 42 Section 119 through 125	To comply with requirements of National Flood Insurance Program. Stormwater planning requirements will encompass this ordinance			April 2001
Municipal Ordinance	Catoosa County/ Code Enforcement Office	Post-Development Stormwater Management Ordinance with stream buffer limits	General fund	Ongoing	January 2005
Community Greenspace Program	State of Georgia Catoosa County	Participation in Georgia Greenspace Program with the conditions that concentration be on lands that would not significantly impact the tax digest and would improve the quality of life		Ongoing	
S. Chickamauga Creek Land Treatment Watershed Project	USDA-NRCS, S&WCD	Consult to determine appropriate bmp's, TVA will monitor location of installation to assess effectiveness	USDA	Ongoing	
New sewer lines	Catoosa County – City of Fort Oglethorpe	New sewer system to be installed in the West Chickamauga Creek watershed from Highway 2 to the Tennessee line Funding for project and scope of project still under negotiation between Catoosa County and City of Fort Oglethorpe	Partially from 2004 SPLOST funds from county and City of Fort Oglethorpe Still under disagreement	Sewerage interceptor is on hold for time being	
Stream clean-up	Ringgold Middle School Eco Rescue	Remove debris from watershed area so in event of floods it will not reach waterways	Volunteers	Semi-annually	

Catoosa Sewage Program	Catoosa County and Catoosa Co. Environmental Health	Septic tank permitting, repair permits, existing system evaluations, site evaluations, subdivision plan reviews i.a.w. Rules & regs for on-site sewage management Ch. 290-5-26			
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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	
Fecal Coliform	TVA	Current	2003	2006	In their business plan
	State Wildlife Division ???? (Bill Clark suggested Catoosa streams may have similar problems as those tested in Conasauga)				

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

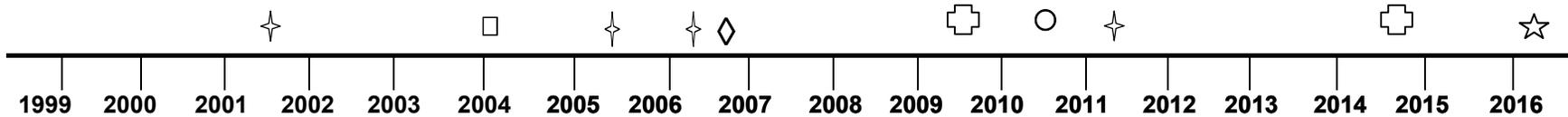
RESPONSIBILITY	DESCRIPTION	AUDIENCE	DATE
CVRDC	Look at data that may be available through TVA	Stakeholder Advisory Group	March-April 2006
CVRDC	Consider applying for 319H grant for septic education	Stakeholder Advisory Group	March-June 2006
CVRDC	Determine if “Jill at Ringgold High School is still working with the Ecology Club “EcoRescue”. Might their activities tie in with public education goals	Stakeholder Advisory Group	March-June 2006
CVRDC	Hold stakeholder advisory group meeting to outline recommended milestones and timetable	Stakeholder Advisory Group	April 2006

<p>Septic System Maintenance Education and Outreach</p> <ul style="list-style-type: none"> • Investigate expansion of district-wide outreach component to homeowners to include those with existing systems • Will investigate 319 h non-point source pollution grant possibilities regarding septic system maintenance and repair project 	<p>Coosa Valley RDC, stakeholders</p> <p>Coosa Valley RDC, stakeholders</p>	<p>2006</p> <p>2006</p>		<p>Application deadline May 31, 2006. Yearly deadline.</p>
<p>Riparian Buffer Education and Outreach</p> <ul style="list-style-type: none"> • 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> • Continue education and outreach to local communities through USDA NRCS/FSA, County Extension Service • Will investigate 319 h non-point source pollution grant possibilities regarding purchasing and distribution of education materials encouraging homeowners to develop, maintain riparian buffers 	<p>Local Governments</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"> • 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 	<p>Coosa Valley RDC, stakeholders</p>	<p>2006</p>		<p>Application deadline May 31, 2006. Yearly deadline.</p>

causes of non-point source pollution, importance of riparian buffers, and stormwater pollution prevention				
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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 ☆

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Date Submitted to EPD:	04/22/06	Revision:	01

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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
Allen Ridley – Chief Building Official – Catoosa County	184 Tiger Trail Ringgold, GA 30736	Ringgold	GA	30736	(706) 965-4226	allen.ridley@catoosa.com
Cindy Askew – Natural Resources Conservation Service	208 N. Duke St. Suite C Lafayette, GA 30728	Lafayette	GA	30728	(706) 638-2207 X3	cindy.askew@ga.usda.gov
Charles Lancaster – Cooperative Extension Service	43 Maple St.	Ringgold	GA	30736	(706) 935-4211	clancast@uga.edu
Bill Clark – Chairman, Catoosa County Board of Commissioners	P.O. Box 8	Ringgold	GA	30736	(706) 905-7438	bclark@catt.com
Ron Brown – Assistant County Manager – Catoosa County	7698 Lafayette St.	Ringgold	GA	30736	(706) 965-2500	ron.brown@catoosa.com
Dena Haverland – Regulatory – Water/Wastewater Engineering, Dalton Utilities	1200 V.D. Parrott, Jr. Parkway	Dalton	GA	30722-0869	(706) 529-1010	dhaverland@dutil.com
Keith Gilmer - Georgia Soil and Water Conservation Commission	700 E. 2 nd Ave.	Rome	GA	30161	(706) 295-6131	kgilmer@gaswcc.org
Denise Clopton or Frank Redmond – Field Representatives - Sen. Johnny Isakson	214 Magnolia St	Lafayette	GA	30728	(770) 661-0999	Denise Clopton@isakson.senate.gov

Linda Harris – Sr. Water Resources Representative – Tennessee Valley Authority	1101 Market St. PSC 1E	Chattanooga	TN	37402-2801	(423) 876-4178	lbharris@tva.gov
Donnie Brown – Lab Analyst - Catoosa Utility District	1058 Old Mill Rd.	Ringgold	GA	30736	(706) 937-9370	n/a
Mike Cannon – Catoosa County Environmental Health Department	184 Tiger Trail	Ringgold	GA		(706) 935-6322	
Bill Henderson – soil conservationist					(706) 935-5263	bill.henderson@catoosa.com
Suzanne Cobos – Catoosa Co. Government Project Administrator	208 N. Duke St.	Lafayette	GA	30728	(706) 965-2500	suzanne.cobos@gmail.com
Chris Rader – City of Fort Oglethorpe	500 City Hall Dr.	Ft. Oglethorpe	GA	30742	(706) 866-2544 ext. 12	

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.
MAPS AND PHOTOS

SOUTH CHICKAMAUGA CREEK WATERSHED
HUC 10 # 0602000108

- West Chickamauga Creek – Highway 2 to stateline
- South Chickamauga Creek – Ringgold to stateline
- Peavine Creek

West Chickamauga Creek – Highway 2 to stateline



DSC00041 Urban influences may be observed in the background of this photo

DSC00043 From this Highway 2 road bridge new development can be seen in the background. Note the silt fence that has failed in the center of the photo.



West Chickamauga Creek – Highway 2 to stateline

DSC00046 Elizabeth St., off Mack Smith Rd. north. Both Elizabeth St. and Lillian Rd. are two unimproved gravel roads that dead end within 500 feet of the creek. This septic service truck was observed on Elizabeth St.



West Chickamauga Creek – Highway 2 to stateline

DSC00047 The now closed Ft. Oglethorpe Sewage Treatment Plant. Sewage is now sent to Mocassin Bend Treatment Plant in Tennessee.



West Chickamauga Creek – Highway 2 to stateline

DSC00049 Just west of Scruggs Rd., approximately one half mile northwest of Highway 146, this road extends to dead end about a quarter mile from the stream. Looks to be a dirt bike track. There is a lot of land disturbance in this area of wetlands.



South Chickamauga Creek – Ringgold to stateline

DSC00028 Housing development one half mile past Catoosa Church. New driveways and paved drainage ditches increase imperviousness in this watershed.



South Chickamauga Creek – Ringgold to stateline

DSC00032 Highway 151 one mile south of Highway 41. Looking at the creek from the back of a Sonic restaurant parking lot. The restuarants' grease trap is located near the dumpster next to this fence. Stains on the pavement indicate a possibility of runoff from this area to the stream just below.



Peavine Creek

DSC00009 At the intersection of Old Mill Rd. and Old Mill Ln, Significant potential for stormwater runoff from the highway.



Peavine Creek

DSC000013 This sanitary sewer is approximately twenty feet from the creek.



Peavine Creek

DSC00014 This downstream view at Old Mill Rd. and Old Mill Ln. indicates that some riparian buffers are healthier than others. The bank on the left is mowed clear to the creek.



Peavine Creek (following page)

DSC00015 From this road bridge on Highway 3 this ditch is easily identified as draining stormwater runoff from the highway directly to the creek.



Peavine Creek

DSC00021 This horse pasture on Wooten Rd. is just one of many in the watershed.

