STATE OF GEORGIA
TIER 2 TMDL IMPLEMENTATION PLAN REVISION 1
Oostanaula River Watershed
Coosa River Basin
April 28, 2006

Floyd County and City of Rome Governments

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
Big Dry Creek	Rome	Fecal Coliform Bacteria	CSA0000061
Oostanaula River	Hwy 140 to Coosa River	Fecal Coliform Bacteria	CSA0000088
Woodward Creek	Oostanaula River Tributary	Fecal Coliform Bacteria	CSA0000068
Little Dry Creek *	Rome	CFB (PCBs)	CSA0000034
Oostanaula River *	Hwy 140 to Coosa River	CFB (PCBs)	CSA0000025
Woodward Creek *	Oostanaula River Tributary	CFB (PCBs)	CSA0000053

IMPAIRED STREAM SEGMENT	IMPAIRED SEGMENT LOCATION	IMPAIRMENT	TMDL ID
Dozier Creek *	Oostanaula River Tributary	CFB (PCBs)	CSA0000063
Big Dry Creek *	Rome	CFB (PCBs)	CSA0000092
Burwell Creek *	Rome	CFB (PCBs)	CSA0000062
Oostanaula River *	Hwy 156 to Hwy 140	Fecal Coliform Bacteria	CSA0000118
Oostanaula River *	Hwy 140 to Coosa River	FCG (PCBs)	CSA0000083
Oostanaula River *	Hwy 156 to Hwy 140	FCG (PCBs)	CSA0000103

* Plan will be written by GA EPD

II. GENERAL INFORMATION ABOUT THE WATERSHED

Write a narrative describing the watershed, HUC 10 #0315010306. 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.

The **Oostanaula River** watershed occupies 550 square miles (excluding the Coosawattee and Conasauga land use areas) in Chattooga, Bartow, Floyd, Whitfield, Gordon and Walker counties. It begins at the confluence of the Conasauga and Coosawattee Rivers in Gordon County then flows southward towards Rome. The average width is about two hundred feet and banks range from fifteen to twenty feet high. The slope is relatively flat with a fall averaging about one foot per mile.

The City of Rome intake on the Oostanaula is the primary intake for the city's water supply (SWAP) USGS Water Quality Monitoring site #02388520 Oostanaula River @ Rome, GA.) Over one million gallons pass through this intake daily.

Land use : forest 74.3%, pasture/hay 4.9%, row crops 4.9%, low intensity residential 0.1%, high intensity residential 1.1%, high intensity commercial 1%, mining 0.2%, transitional 2.8%, other grasses 0.5% and wetlands 0.2%. Data on land use was taken from Georgia DNR EPD publication *Total Maximum Daily Load Evaluation for Fifty-Eight Stream Segments in the Coosa River Basin for Fecal Coliform* (2004). This is the most recent land use data available for this watershed.

Big Dry Creek is a tributary to the Oostanaula River. It headwaters within Berry College property, Mount Berry, Georgia and flows southeast to the river. Most of the watershed lies on Berry College property. Both dairy and beef cattle graze these lands as well as horses. In 2001 an Environmental Land Management Committee was formed to create a strategic plan for land use on the campus and surrounding properties. They currently maintain ponds on the grounds to absorb contaminated runoff before it can enter the stream. The horse barn has received some federal funding to fence out riparian buffers. A large portion of land is managed as a game preserve where hunting rights are leased and used to attract donors, etc.

Sinkholes appearing on Berry land over the years have been filled in with rock or dirt. The underlying karst topography may be responsible for the variable rates of flow for the stream at different locations and the unexpected appearance and disappearance of flow.
Mt. Berry Square Mall and parking area, directly adjacent to the stream, form a vast area of impervious surfaces in the watershed.

Opposite the mall, across Three Mile Rd., is a sewer line that extends along the bottom of the hill, running parallel to US 27 and coming within 50 ft. of the creek. During a heavy rain the sewer line has been observed overflowing. Those observations were not reported to EPD.
Primary land use: 75.6% forested, 8.6% pasture, 7.1% transitional followed by; 3.3% high intensity residential, 2.4% row crops, 1.5% other grasses, 1.3% high intensity commercial, and 0.1% open water. Data on land use was taken from Georgia DNR EPD publication *Total Maximum Daily Load Evaluation for Fifty-Eight Stream Segments in the Coosa River Basin for Fecal Coliform* (2004). This is the most recent land use data available for this watershed.

Woodward Creek headwaters in northeast Floyd County northwest of Highway 140 approximately two and a half miles from Shannon where it is a source of drinking water for the community. It is reported that the creek flows year 'round and there are never periods when water cannot be withdrawn. It flows southwest through primarily low-lying land then south to the Oostanaula River.
The City of Rome is the only municipality and Floyd the only county in this watershed.

Point Sources:

- Landfills: Jones Mill Rd. Permit # 057-011D.
- Mines: Florida Rock Quarry Permit #-GA0003956 - limestone
- Shannon Water Treatment Plant originally operated by Galey & Lord has been purchased by Floyd County using a GEFA loan of $1.3 million – adding capacity and securing a source of water for the community.
- There are no CAFOs in this watershed.

Big Dry 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
Big Dry Creek	Rome, Georgia	3	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	1000 per 100 ml (geometric mean	Wildlife	74 percent from all sources

bacteria	Nov-April) 200 per 100 ml (geo. Mean May-Oct)	Urban Development • Leaking septic systems • Urban runoff from impervious surfaces • Leaking sewer lines Agricultural/Livestock • Animal grazing • Animal access to streams • Application of manure to pasture and cropland	

Oostanaula River

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

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Oostanaula River	Highway 140 to Coosa River (Floyd County)	14	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 for the water quality standards. Describe the sources and causes of each violation identified in the TMDLs.

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PARAMETER	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED REDUCTION FROM TMDL
Fecal coliform	1000 per 100 ml (geometric mean Nov-April) 200 per 100 ml (geo. Mean May-Oct)	Wildlife Urban Development • Leaking septic systems • Urban runoff from impervious surfaces • Leaking sewer lines Agricultural/Livestock • Animal grazing • Animal access to streams • Application of manure to pasture and cropland	33 percent for all sources

Woodward 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
Woodward Creek	Oostanaula River Tributary (Floyd County)	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	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 • Animal grazing • Animal access to streams • Application of manure to pastureland and cropland Urban Development • Leaking septic systems • Landfills	82 percent from all sources

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

SWAP The Coosa Valley Regional Development Center's Source Water Assessment Plan, "Inventory of Potential Pollution Sources" (Jan 2003) identified possible sources of fecal coliform bacteria in the watershed. They included livestock, wildlife, failing septic systems, cso's and overflows from municipal sources." p.9.

The City of Rome intake on the Oostanaula River is the primary intake for the City's water supply. The pump house is located in Ridge Ferry Park along Riverside Drive. Water is pumped through the Blossom Hill Filtration Plant, where it is delivered to settling basins and filtered and treated with chlorine, fluoride and lime before being released from the plant.

Review of land cover data: Low forest (70.4 – 75.6%) Woodward - high percent devoted to pasture/hay (19.5%). Big Dry - 7.1% transitional use and some devoted to high residential (3.3%) Data on land use was taken from Georgia DNR EPD publication *Total Maximum Daily Load Evaluation for Fifty-Eight Stream Segments in the Coosa River Basin for Fecal Coliform* (2004). This is the most recent land use data available for this watershed.

Field survey observations in general :

Oostanaula –

- Agriculture – row cropping is prevalent along the banks of the river. Trees form a riparian buffer along most of the banks although cattle sometimes have access to streams.
- A lot of the forested wilderness acreage directly adjacent to the river is managed by private organizations as wildlife hunting preserves.

Big Dry –

- Wildlife is prevalent along this segment of the watershed. Berry also manages a significant portion of their land as a hunting preserve to attract and entertain donors.
- Agriculture and cattle are present, although in far less numbers than past years.
- Natural conditions related to the karst topography of the watershed present a challenge to addressing non-point sources of bacteria in that the stream literally "appears and disappears" at different locations during different seasons.
- Urban runoff may be a source of bacteria as the impervious surfaces of the expansive parking area of Mt. Berry Square Mall drains to the creek.
- New sewer lines are being installed in the far northern edge of the watershed. As of October 2005, this Armuchee Sewer Outfall project reportedly had obtained easements, 2 miles of line is within Berry College property. Finalizing the Erosion and Sedimentation Plans to submit to EPD includes locating access roads. Berry hasn't given that final word yet. Construction is set to begin April 2006. Other issues with sewer include overflows that have occurred at the foot of the hill from the Nursing Home opposite the Mt. Berry Square Mall parking area.

Field Survey

Jill Joss / Libby Ormes
6/9/05
Wx : 85 and partly cloudy, day following hard rain

OOSTANAULA RIVER – Hwy. 140 to Rome

This segment was surveyed by two teams on the same day. This survey is of the north and southwestern area of the watershed .

I. Beginning down Three Mile Rd. approx 2 miles N of Hwy 27 on the left are two large depressions around 75 ft. in diameter, each surrounded by a chain link fence. Perhaps sediment ponds or sinkholes.

Stream appears very rusty colored at road. Unclear where stream flows on the upstream side of this photo. Abandoned pasture to left and right of road, facing downstream from road.

Behind barn are row crops. Just beyond the crops is a healthy riparian zone bordering the river. Hardwoods seem to dominate and extend uninterrupted along the length of the channel . Row crops, possible use of chicken litter as fertilizer may be sources of fecal at this location.

DSC0003 Barn . No animals present, equipment does not appear to be in use at this time.

II. Hwy. 140 – Boat dock at R. Sidney Lowery Memorial Bridge. Slow-medium flow, water is high level after rains of previous several days. Good thick buffer with hardwoods.

Looking downstream from top of bridge. High flow may have caused undercutting of banks, several trees have fallen loose from the bank into the river

III.Approx. .75 miles down Troutman Rd. , NE of Old Dalton Rd. *Received verbal permission from landowner to approach river through the back of their property.* .

Access to Riverbank at back side of property Hay pasture provides floodplain/buffer zone between the river and their property. Healthy upstream and downstream buffers.

*Note: at and around Lowery Rd., 1st turn off Old Dalton Rd., south of Troutman Rd. – row crops on right in floodplain of Armuchee Creek. Large area of row crops.

IV**.** Armuchee Creek.

Crops left of River probably in the floodplain. Row crops all along the right bank of Armuchee Creek

V.@ Callier Rd (behind Richard Russell Airport) housing developments / ponds

***Note: Topo Map does not show Callier Rd. completely circling back to Old Dalton Rd, which it does. That connection was drawn in on the map.*

DSC00012). Small cow pasture and pond off Callier Rd. Cattle in pond

Small tributary low flow, cloudy, pasture and intermittent forest on both sides; approx. 2 meters wide.

Along Old Dalton Rd are small housing developments possibly on septic.(Birchfield Rd.).

Jones Bend Rd.

DSC00014). Sewer piping for new sewer line to be placed directly beside this tributary

Area of older residential. Hardwood buffer zone along both banks. Some abandoned pasture. Stream is approx. 3 m. wide on upstream side.

Gaming/shooting preserve extending halfway down Jones Bend Rd.– dense forest

VII. Ridge Ferry Park, Rome – Park is floodplain/ buffer zone. Wooded buffer on stream bank at left of photo. To right the buffer zone/floodplain is more sparse and cleared. River has slow-medium flow, is muddy, and is at medium high depth.

Tributary stream - Burwell Creek - loaded with debris, confluence with River

DSC00018). Oostanaula River at Ridge Ferry Park.

Field Survey

5/24/05
Jill Joss / Nancy Gribble
Wx: Sunny 75 degrees

Big Dry Creek

I.) Rawlins Center Rd. bridge @ Berry College approx .5 miles from Victory Lake. Stream bottom has been grouted under the bridge for stabilization purposes. Area beside stream had been pasture in previous years but has since been abandoned to allow for natural succession.

2.) Approximately one half mile downstream the flow increases (**DSC#00055**). Cattle, pasture prevalent, though fences and steep slopes prevent access to the stream. This area has experienced sinkhole activity over the years.

3.) Hwy 27 bridge over creek – **(DSC#00054)** pumping station across Hwy 27. On the opposite side of the highway there is a Nursing home at the top of a hill. A sewer line runs along the bottom of the hill, the manhole is shown in the photo. During a significant rain event, the sewer has been observed overflowing, the runoff washing down the 50 ft or so to the creek.

4.) On Berry property behind the silo – water stagnant again with practically no flow to it. **(DSC#00061)**.

Field Survey

Jill Joss / Nancy Gribble
5/23/05
Wx: Sunny 75 degrees

Woodward Creek - Oostanaula River Tributary

Headwaters are NW of Hwy 140 approx 2.5 miles from the community of Shannon. It flows southwest through low-lying land to the Oostanaula just downstream of Jones Bend beside the Cooperative Extension Service's NW Ga. Experimental Station.

It is a source of drinking water for Shannon. Water Treatment Plant Operator we spoke with reported the creek runs year-round and there are never periods where water cannot be withdrawn, although the flow the day of this survey seemed very low. Soils are high in clay and highly erodable

I.. Minshew Rd. approx. ¼ mile E. of Bell's Ferry Rd.
Looking upstream, indicating runoff from the road
Downstream - same location. Bivalves, minnows spotted.
DSC00043 Standing water extremely muddy and cloudy, copper/rust in color. Source undetermined.

II. Gaines Rd./ culvert
DSC00045 Stream flowing right to left in photos. Cattle have open access to either side of the stream. Grass is mowed completely along the bridge, leaving no buffer zone
. Possible headwaters of stream

III. Crowder Rd. – dense buffer zone

IV. Enoch Rd. – flowing left to right. Indicating vegetated stream bed, well-buffered area

V. Bells Ferry – cows having access to the stream, A fence of empty 55-gallon drums keeps cattle from going under road through the culvert.

VI. Pumping station – taken from the stream and pumped uphill to the filtration plant

Involvement of stakeholder group: A forester from Berry College Forestry Dept. conducted a stream walk of strategic locations accessible only to staff on the property. He noted that sewer overflows had been seen at the foot of the hill from the Nursing Home on a few occasions.

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

POTENTIAL SOURCES	ESTIMATED EXTENT OF CONTRIBUTION	ESTIMATED MAGNITUDE OF CONTRIBUTION	COMMENTS
Big Dry Creek			
Urban Runoff	Lower 10% of watershed east of Hwy 27	Moderate	Mt. Berry Square mall parking lot, vast impervious area slightly uphill from creek
Agricultural/Livestock	Throughout watershed west of Hwy 27 (Berry College pastureland)	Moderate	Reportedly less livestock than in past years
Wildlife	Throughout Berry College property	Moderate	Berry College forested holdings and hunting preserve
Contamination from city sewer overflows		Moderate now but expected to be less in future due to new sewer system	New sewer is being installed in watershed.
Oostanaula			
Leaking septic systems, leaking sewer lines	Throughout	Large	
Agricultural/fertilizer from row	Row crops not as extensive	Moderate	Crops that are there often extend clear on up

crop runoff			to the riverbank . For the most part there is good tree buffer
Agricultural/Livestock	Not widespread	Small	Banks are too steep in most places for cattle to be able to access river
Woodward			
Wildlife	Throughout	Moderate	
Leaking septic systems	Throughout	Moderate	
Agricultural/Livestock	Those farms using poultry litter as fertilizer	Small	

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 17, 2005 TMDL Stakeholder Meeting held at the Forum in Rome, Georgia for the streams in the Coosa Basin (27 attendees)
A powerpoint presentation was given concerning TMDL s and the TMDL process, responsibilities under the contract and the timeline involved.

Comments were made concerning how the TMDL process fits together with watershed assessments, stormwater requirements, and other water quality programs. Standards for bacteria monitoring were discussed, concerning whether e-coli or fecal coliform is the best indicator of threats to human health. For the purposes of the TMDL process as it stands we are working with data indicating impairment due to fecal coliform. Some participants had expected that these meetings would be concerning phosphorus and dissolved oxygen issues and wondered where things stood with that process. There was confusion surrounding the issue of quantifying and identifying and subsequently addressing non-point sources of pollution given the fact that non-point sources are, by their very definition, unable to be pinpointed
One stakeholder questioned the EPD and Contractors' commitment to the TMDL process. They recall having participated in other TMDL meetings in the past and never heard anything more. One stakeholder suggested that approval of Phase II Stormwater plans would give some authority to certain groups to be responsible for runoff pollution.

September 1, 2005 TMDL Stakeholder Meeting held in Rome, Georgia for the Floyd/Chattooga County areas (24 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 8, 2005 Stakeholder Meeting held at the Sara Hightower Regional Library in Rome, Georgia for Floyd and Chattooga Counties (12 attendees)

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

The Stakeholder Advisory Group for Floyd and Chattooga Counties met at the Coosa Valley Regional Development Center on February 14, 2006.
(7 attendees).

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
Leigh Ross		Rome	GA	30165		
Sheri Teems - NRCS	1401 Dean St. Suite I	Rome	GA	30161-6494	(706) 291-5651 x3	Sheri.Teems@ga.usda.gov
Eric Lindberg – Rome/Floyd Co.	P.O. Box 1433	Rome	GA	30162	(706) 236-4674	elindberg@romega.us
Joe Cook or Katie Owens – Coosa River Basin Initiative	408 Broad St.	Rome	GA	30161	(706) 232-2724	jcook2coosa.org or keady@coosa,org
Keith Gilmer – Ga. Soil	700 E. 2nd Ave. Suite J	Rome	GA	30161	(706) 295-6131	Kgilmer@gaswcc.org

& Water Conservation Commission						
John Bagwell – Bagwell Dairy	100 Bagwell Rd.	Cave Spring	GA	30124	(706) 777-3333	
Tim Allee – Environmental Health Supervisor	1305 Redmond Circle Bldg. 614	Rome	GA	30165	(706) 295-6651	tcallee@gdph.state.ga.us
Debra Gunnells – Greater Rome Chamber of Commerce	1 Riverside Pkwy.	Rome	GA	30161	(706)	dgunnells@romega.com
Jennifer Odom – NRCS	1401 Dean St. Suite I	Rome	GA	30161-6494	(706) 291-5651 x3	Jennifer.Odom@ga.usda.gov
Jim Dixon – City of Rome	P.O. Box 1433	Rome	GA	30162	(706) 236-4400	
John Boyd – City of Rome Utilities Supervisor	P.O. Box 1199	Rome	GA	30162-1199	(706) 233-0062 or (706) 252-5176 cell	jboyd@
Johnny Massingill – City of Rome WPCF	P.O. Box 1711	Rome	GA	30162-1711	(706) 236-4591	Jmassingill@romega.us
Clay Cochran – Rome/Floyd Co.	109 38th Ave. NE	Birmingham	AL	35215		
Fred J. Pou – Coosa River Soil & Water Conservation District					(706) 375-2310 or (423) 290-5096	
Mike Hackett – City of Rome Water & Sewer Dept.	P.O. Box 1711	Rome	GA	30162-1711	(706) 236-4560	mhackett@romega.us
William T. Davin – Berry College Associate Professor of Biology		Mt. Berry	GA	30149-0430	(706) 290-2663	bdavin@berry.edu
Kirk Milam – City of Rome Water Dept.						

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

RESPONSIBILITY	MEASURE	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/ IMPLEMENTED	EFFECTIVENESS(Very Moderate, Weak)
Federal Clean Water Act, Section 305(b) and 303 (d)	USEPA, Georgia DNR EPD, Floyd 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 *National Water Quality Inventory*) 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	Federal, Georgia, Floyd County	Enforced	11/1964	

		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.				
Georgia Erosion and Sedimentation Control Act, Construction Permit, 2003 Amendment	Floyd County, Georgia DNR/ EPD, Georgia Soil and Water Conservation Commission	Floyd County, City of Rome 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	Floyd County, City of Rome	Enforced		

		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				
Georgia Mountain and River Corridor Protection Act	US Corps of Engineers, US EPA	Mountain and River Corridor Protection Act requires local governments to provide a 100-foot buffer on large rivers.				Very if enforced
Georgia Planning Act	US Corps of Engineers, US EPA	Water supply watershed protection requirements including stream buffer requirements and SWAPs. The Georgia Planning Act calls for protection of streams that flow into reservoirs or are upstream from drinking water intakes.	State	Enforced	1989	Very if enforced
Erosion and Sedimentation Control Training and Certification	Georgia Soil and Water Conservation Commission, GA EPD, Rolling Hills RC&D	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-	Georgia Soil and Water Conservation Commission, GA EPD	Enforced, certification by end of 2006		Very

		disturbing activity in Georgia (Georgia Soil and Water Conservation Commission, 2005). The GSWCC also has updated requirements for E&SC plans to be submitted with each project. Three levels of certification are offered through the Rolling Hills Regional Conservation and Development Council (RC & D) for Floyd County.				
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	State	Enforced		

		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.				
Phase II NPDES Storm Water Permit for Small MS4	Georgia DNR/ EPD, Floyd County	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.	Floyd County	Enforced		
Watershed Assessment and Protection Plan for Phase II NPDES Permitting	Floyd County	Required for new or expanding wastewater treatment discharge permits. Internal	Floyd County	Enforced		

		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; and design educational and outreach activities for intended audiences				

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
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	Very
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.

Watershed Protection Tools Addressing Poor Riparian Buffers	Floyd County	Riparian Buffer Ordinance (Stream Buffer Protection Ordinance); Stream Restoration; Stream Mitigation Bank; Conservation Subdivision Ordinance				Very if enforced
Watershed Protection Tools Addressing Point Sources	Floyd County	Improved NPDES permits; Enforcement of existing permits				Very if enforced
Watershed Protection Tools Addressing Impervious Surfaces and Storm Water Runoff	Floyd County	Relevant Storm water Management and Conservation Subdivision Ordinances; Conservation Planning				Very if enforced
Municipal Ordinance	Floyd County Code Enforcement Office	Post-Development Stormwater Management Ordinance with stream buffer limits	General fund	On-going	January 2005	Very
Capacity, Management, Operations and Management (CMOM)	USEPA, City of Rome and Floyd County	USEPA regulation requires local utilities to increase operations and management reviews on sewer connection systems and lift stations. Applicable BMPs include frequent inspections and testing, back-up power facilities.	General Fund	Enforced	CMOM has been approved for Floyd/City or Rome – SSO Agreement Status:	Very
Municipal Ordinances	Floyd County	2005 Unified Land Development Code of Rome-Floyd County includes the following ordinances: Section 6.13, Erosion and Sedimentation Control including a requirement for E and S Plans by	Enforced		2005	

		developers; Section 6.14, Flood Damage Prevention (references the Flood Insurance Study of 2000); Section 3.3, Zoning regulations that include Planned Development zoning with a requirement for 20% of land within the residential development to be preserved as openspace, excluding recreational space; Section 6.15, Stormwater Management including a stormwater management plan required of developers; Section 6.18 addressing tree planting requirements; and Section 6.19, addressing watershed and wetlands protection, including setback restrictions and greenways, including buffers of 100 feet on river corridors and 40 feet on tributaries including Silver Creek, Armuchee Creek, and Big Cedar Creek.				
Stormwater Best Management Practices Public Involvement/Participation	City of Rome	Promote River Clean-Up Days		Yearly	April, October 2005	
Stormwater Best Management Practices	City of Rome	Promote Adopt-a-Stream		Ongoing	April-May 2005	

Public Involvement/Participation						
Stormwater Best Management Practices Public Involvement/Participation	City of Rome	Project WET Classroom Training		Ahead of schedule	June,October 2005	
Stormwater Best Management Practices Public Involvement/Participation	City of Rome	Promote River Clean-Up Days: distributed flyers and scheduled public announcements		Ongoing	2005	
Nursery	City of Rome	Once grown, trees from the nursery will be available for plantings in community. Room in the nursery for 2,000 trees, space can be expanded.		Ongoing	2005	
"Trees Rome" Program	City of Rome Tree Board	A planting and conservation program similar to "Trees Atlanta"		Ongoing		
Community clean-ups through "Rivers Alive" annual events and other sponsored activities	Coosa River Basin Initiative, City of Rome,	Volunteers participate in clean-ups around the basin, including a segment of the Armuchee Creek watershed.		Ongoing	.	
Berry College Environmental Land Management Plan	Berry College Environmental Land Management Committee	Guiding land-use decisions on Berry College properties		Ongoing		
Environmental Trust Fund Resolution	NERA, Local governments	Resolution calling for State of Georgia to fully appropriate fees collected from developers for erosion and sedimentation intended to fund additional inspectors to implement ordinances as intended	State			Very

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	
17 water quality parameters/month on Oostanaula	USGS	current	1974	present	To monitor intake site #02388520
Weekly sampling at Ridge Ferry Park d/stream of intake	City of Rome	current	2001		To monitor same drinking water intake
Sampling @ Big Dry Creek	City Sewer Dept.	current	2005	TBD	To monitor Armuchee Sewer Outfall project
D.O.	GAEPD and USEPA	current	2005	2006	Coosa River Basin monitoring in support of Coosa River Modeling project.

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	Schedule Stakeholder Advisory Group Meeting and do additional outreach to encourage broader participation from stakeholders in the group.	Stakeholders	March 21, 2006 tentatively
CVRDC	Convene SAG to review final drafts of TMDL plans	Stakeholder Advisory Group	April 2006
CVRDC	Discuss possibility of monitoring to assess quantifiable improvements in water quality after installation of sewer is complete in 2007	Stakeholder Advisory Group	April 2006
City of Rome	Wetlands education in conjunction with Highlands College involving field trip to constructed wetlands site on property	Students in city schools	April 2006
CVRDC	Discuss possibility of additional non-point pollution programs for elementary . "Water Drop" program is one example.	David Wright with Georgia Youth in Science and Technology Center (GYSTC)	March 2006
CVRDC	Consider Comprehensive Plan process underway February 2006, Major revisions are in the works, will/should TMDL Implementation Plans be included to show level of commitment	Eric Lindberg/ Sue Hiller – City of Rome Planning Commission	March 2006
CVRDC	Discuss buffers; challenges, new guidelines from state, potential liabilities, etc.	Stakeholder Advisory Group	March 2006
CVRDC	Consult with "Trees Rome" planting and conservation program coordinator, could some plantings be done to help establish riparian	Tree Board of City of Rome Mr. Tom Saltino	March-Aprill 2006

	buffer/help protect water quality, targeted at impaired streams.		
CVRDC	Explore possibility of reconvening Stormwater Steering Committee established by CVRDC in 2001-2002 allowing counties to share experiences in complying with Phase II requirements	Local government representatives who were involved in Stormwater Steering Committee 2001-2002. David Howerin to locate list.	March-April 2006
Coosa River Basin Initiative (CRBI)	They have volunteered labor to assist farmers willing to implement bmp's on their land such as fencing-out, etc. This could contribute to farmers' cost-share in certain NRCS programs.	Agricultural community	March-June
Coosa River Basin Initiative – City of Rome Rivers Alive annual clean-up		Members and community	June 2006
Hands-On Rome		Community	

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

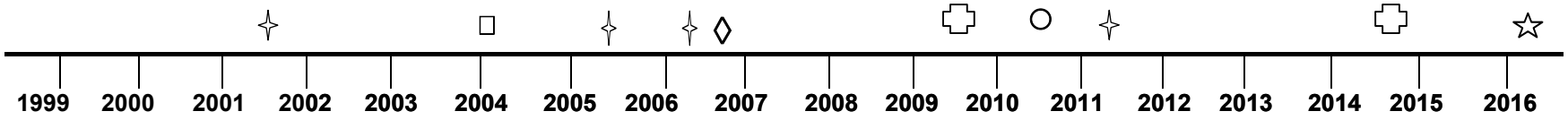
MANAGEMENT MEASURE	RESPONSIBLE ORGANIZATIONS	STATUS PROPOSED	STATUS INSTALLED	COMMENT
Stormwater Management Education and Outreach				
• Complete Center for Watershed Protection's Codes and Ordinances Worksheet	Local Governments	Summer 2006		
• Consider Adopting 22 Model Development Principles as discussed in Better Site Design: A Handbook for Changing Development Rules in Your Community where applicable	Local Governments	2007-2008		
• Implement education of community using After the Storm non-point source pollution video presentation on public access channels	Local Governments	Ongoing		

• Develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations	Local Governments	2006-2008		
• Reconvene Stormwater Working Group to include all counties, municipalities in Coosa Valley RDC area	Coosa Valley RDC, stakeholders	2006		
• Will investigate 319 h non-point source pollution grant possibilities regarding funding for development of stormwater management training for municipal employees	Coosa Valley RDC, stakeholders	2006		Application deadline May 31, 2006. Yearly deadline.
Septic System Maintenance Education and Outreach				
• Investigate expansion of district-wide outreach component to homeowners to include those with existing systems	Coosa Valley RDC, stakeholders	2006		
• Will investigate 319 h non-point source pollution grant possibilities regarding septic system maintenance and repair project	Coosa Valley RDC, stakeholders	2006		Application deadline May 31, 2006. Yearly deadline.
Riparian Buffer Education and Outreach				
• Consider adopting relevant principles as detailed in 22 Model Development Principles as discussed in Better Site Design: A Handbook for Changing Development Rules in Your Community	Local Governments	2007-2008		
• Continue education and outreach to local communities through USDA NRCS/FSA, County Extension Service	USDA NRCS/FSA, County Extension	Ongoing		

• Will investigate 319 h non-point source pollution grant possibilities regarding purchasing and distribution of education materials encouraging homeowners to develop, maintain riparian buffers	Service Coosa Valley RDC, stakeholders	2006		Application deadline May 31, 2006. Yearly deadline.

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 ☆

Prepared By:	**Jill Joss**				
Agency:	**Coosa Valley Regional Development Center**				
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Date Submitted to EPD: 04/2206				**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
Leigh Ross – Water Superintendent City of Rome	P.O. Box 1711	Rome	GA	30161		
Sheri Teems - NRCS	1401 Dean St. Suite I	Rome	GA	30161-6494	(706) 291-5651 x3	Sheri.Teems@ga.usda.gov
Kirk Milam – City of Rome Water Superintendent						
Eric Lindberg – Rome/Floyd Co.	P.O. Box 1433	Rome	GA	30162	(706) 236-4674	elindberg@romega.us
Joe Cook or Katie Owens – Coosa River Basin Initiative	408 Broad St.	Rome	GA	30161	(706) 232-2724	jcook2coosa.org or keady@coosa,org
Keith Gilmer – Ga. Soil & Water Conservation Commission	700 E. 2nd Ave.	Rome	GA	30161	(706) 295-6131	Kgilmer@gaswcc.org
John Bagwell – Bagwell Dairy	100 Bagwell Rd.	Cave Spring	GA	30124	(706) 777-3333	
Tim Allee – Environmental Health Supervisor	1305 Redmond Circle Building 614	Rome	GA	30165	(706) 295-6651	tcallee@gdph.state.ga.us
Debbie Gunnells – Greater Rome Chamber of Commerce	1 Riverside Pkwy.	Rome	GA	30161	(706) 291-7663 x303	dgunnells@romega.com
Jennifer Odom – NRCS	1401 Dean St. Suite I	Rome	GA	30161-6494	(706) 291-5651 x3	Jennifer.Odom@ga.usda.gov
Jim Dixon – City of Rome Assistant City Manager	P.O. Box 1433	Rome	GA	30162	(706) 236-4400	jdixon@romega.us
John Boyd – City of	P.O. Box 1199	Rome	GA	30162-1199	(706) 233-0062	boydj@floydcountyga.org

Rome					or (706) 252-5176	
Johnny Massingill – City of Rome WPCF	P.O. Box 1711	Rome	GA	30162-1711	(706) 236-4591	Jmassingill@romega.us
Clay Cochran – Rome/Floyd Co.	109 38th Ave. NE	Birmingham	AL	35215		
Fred J. Pou – Coosa River Soil & Water Conservation District					(706) 375-2310 or (423) 290-5096	
Mike Hackett – City of Rome Water & Sewer Dept.	P.O. Box 1711	Rome	GA	30162-1711	(706) 236-4560	mhackett@romega.us
Chris Collier – Floyd Co. Health Department	315 W. 10 St.	Rome	GA	30161	(706) 295-6123 Ext. 347	

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

OOSTANAULA RIVER WATERSHED HUC 10 #0315010306

Oostanaula River – Highway 140 to Rome
DSC00003 Three Mile Rd. approximately two miles north of Highway 27. Abandoned barn, no animals present, no equipment. The river is beyond this barn.

Oostanaula River – Highway 140 to Rome
DSC00008 Opposite side of the R. Sidney Lowery Memorial Bridge at beginning of segment on Highway 140. Photo taken the day following a hard rain. The accelerated flow may have caused undercutting of the banks. Several trees have fallen loose from the bank. (following page).


USGS

Oostanaula River – Highway 140 to Rome
DSC00012 Along Callier Rd. Small cattle operation with pond.

Oostanaula River – Highway 140 to Rome

DSC00015 Area along Jones Bend Rd. where new sewer is being installed

Oostanaula River – Highway 140 to Rome.
DSC00018 Ridge Ferry Park in Rome. Note the densely wooded buffer along the river.

Big Dry Creek

DSC00054 Photo taken from Highway 27 road bridge over the creek Mt. Berry Square Mall. This downstream section has no flow to it. (following page).

Plan for
HUC 10 #: 0315010306

Big Dry Creek
DSC00055 This location is upstream from the previous photo. Note the increased flow. This is on Berry College property to the west of Highway 27 (following page).

Plan for
HUC 10 #: 0315010306

Big Dry Creek
DSC00061 This location is further upstream on Berry College property behind the silo. The water is stagnant again with practically no flow.

Woodward Creek

DSC00043 Minshew Rd. approximately one quarter mile east of Bells Ferry Rd. Copper/rust color is only at this location, the source is undetermined.

Woodward Creek
DSC00045 Gaines Rd. – Cattle with access to the creek, bank failure.