

TMDL IMPLEMENTATION PLAN FOR ANNE COURT BRANCH

Introduction

Anne Court Branch is in the Oconee River Basin. The stream segment is listed on the §303(d) list for the State of Georgia for not meeting the water quality standard for fecal coliform to support its designated use of fishing. It is one of eight stream segments being addressed within Athens-Clarke County simultaneously. The U.S. Environmental Protection Agency developed a total maximum daily load estimate (TMDL) for the creek, based on a prediction of a 30-day geometric mean of 454 cfu/100ml and suggested a reduction of 70% in both surface runoff and groundwater/interflow. The purpose of this implementation plan is to identify and eliminate sources of fecal coliform in the drainage basin in order to meet the fecal coliform water quality standard.

Overview

The drainage basin of Anne Court Branch lies wholly within the boundaries of the Unified Government of Athens-Clarke County. The drainage is a small part of the HUC 12-digit watershed, and defining the precise boundary will be an early task in the implementation plan.

The most common land use in the basin is residential with considerable commercial along its southern boundary. The branch drains Memorial Park, which includes a zoo and a large pond with a substantial population of domestic and wild ducks and geese.

The area is fully served by sewerage.

Possible sources of fecal coliform in the basin include overflows and failures of sewer lines; malfunctioning relict septic tanks; illicit direct discharge of residential or business wastewater into tributary streams; animal waste (pets and wildlife); and storm water runoff.

Pinpointing individual sources typically requires extensive analysis and monitoring of the stream and its tributaries during both wet and dry weather conditions.

Current Activities

Past development regulations in Athens-Clarke County (in place for some time) required detention ponds for large developments. However, these ponds have limited usefulness for water quality, because the ordinance is designed to address water quantity only. These ponds are inspected only during project construction. There is no program for periodic inspection of the ponds except in response to complaints.

Athens-Clarke County adopted a new land development code in December, 2000, that will require additional treatment of storm water runoff for water quality as well as water quantity. The ordinance at present calls for implementation through storm water management manuals to be adopted at a later date. These manuals are under development. However, the Anne Court Branch

drainage is fully developed, and future water quality guidelines will affect only new development.

Future Activities

Watershed Team Formation

A Clarke County Watersheds Task Force will be formed to work on fecal coliform reduction in this basin as well as others in the county. Currently, the task force consists of representatives from the departments of Public Works (in charge of the storm water program), Utilities (in charge of sewerage), and Planning (in charge of land use planning and regulation). The Upper Oconee Watershed Network (UOWN), a public interest group interested in water quality in the Oconee River Basin, has volunteered to participate by linking its stream monitoring activities to the TMDL implementation plans. The Athens-Clarke County public health office will be added to the task force, as will the district and county offices of the Natural Resources Conservation Service.

In addition to the working task force, a stakeholders' group will be formed of persons with an interest in the watershed. One meeting has been held with stakeholders. The Upper Oconee Watershed Network, Georgia Legal Watch/Community Watershed Project, and interested members of the community attended and expressed interest in continuing to participate. Additional groups and individuals will be contacted and invited to participate in the overall county effort and the Anne Court Branch effort specifically. This group will identify areas of concern, offer input to and feedback on plans, participate in outreach and education, and recruit support from the community.

For the Anne Court Branch TMDL plan, the Athens-Clarke County Department of Leisure Services (which runs the zoo) will be added as a stakeholder.

Public Education

The task force and stakeholders' group will identify or develop materials to use in a public education campaign to inform citizens of the need to reduce sources of waste that might produce fecal coliform and minimize the exposure of storm water to these sources. The campaign will begin immediately and will inform the public of steps they can take to reduce possible sources. The task force will also decide where, when, and how to disseminate this information.

Compiling Additional Information

Among the first steps in implementing this plan will be to compile additional data. Information needed will include, but not be limited to: Accurate delineation of the drainage (first using 7.5 min. topographic data and later from the storm water study under way now); collection of existing stream sample data; a survey of wildlife populations in Memorial Park; collection of spill and leak reports connected with the sewer system; and collection of data from the utilities department to match addresses with sewer billing to determine if there are any extant septic tank

systems in the drainage..

Monitoring

All existing data on fecal coliform concentrations in Anne Court Branch will be compiled. Additional monitoring may be needed. The task force, with help from the stakeholders' group, will determine the specifics for baseline monitoring (such as selecting the locations, frequency, and conditions of monitoring), seek funding from local, state, and federal sources, and conduct the baseline monitoring as needed (provided that funding can be secured). Sampling costs, if carried out by county staff and tested in-house, are estimated to be approximately \$100 per sample. The purpose of the monitoring will be to identify the sources of fecal coliform in the basin in order to target them for abatement. The task force will consider setting up the BASINS/NPSF water quality model, with the assistance of the Northeast Georgia Regional Development Center, to incorporate and better analyze the monitoring data.

The Upper Oconee Watershed Network, and possibly other citizens' groups, sample for fecal coliform as part of their activities. UOWN has indicated a desire to direct their activities specifically toward TMDL-related stream segments. However, the level of training, certification, and oversight of their citizen monitors is unknown. Volunteer fecal coliform sampling will be a part of the monitoring program for this basin. In order to ensure that the data collected is reliable, the program will include cooperative efforts to ensure that data are collected using trained personnel and approved protocols.

The Georgia EPD is scheduled to conduct monitoring of the Oconee Basin in 2004 in support of its 5-year River Basin Management Plan cycle. In addition, the task force may participate in additional monitoring in 2004 - 2005 to determine the effectiveness of implementation plan activities.

Source Identification

After analyzing the monitoring data, the task force will seek to identify and rank potential sources of fecal coliform. It is anticipated that the stakeholders' group will be valuable in this step. Possible sources in the drainage include illegal discharges, septic tank failures, animal waste from pets and wildlife, poorly sited and managed commercial solid waste receptacles, and miscellaneous surface runoff.

Pollution Reduction Strategies

Considerable data are available and will be tapped to identify any extant septic tank users and potential areas of concern. If failing septic tank systems are found, prompt action will be taken through the health department to eliminate them.

Public education and outreach will be an important part of the strategy. Informing residents and businesses about the fecal coliform violation is a necessary step to recruiting their support and changing individual behaviors. Outreach will include information about on-site septic systems, disposal of pet waste, and other non-point source pollution prevention. The Upper Oconee

Watershed Network is already very active in this area. Strategies could include a web page, mass mailings, attendance at civic clubs and homeowners' association meetings, stream walk\,s, and stream clean-ups.

Athens-Clarke County falls under the Phase II storm water regulations, and is currently undertaking a storm water study, conducted by the consulting firm of Arcadis, Geraghty, and Miller, in order to comply with the requirements of the general permit by 2003. Originally conceived as primarily a water quantity study, the scope of work has been amended to address water quality issues as well. Additional outcomes of this planning effort will be detailed drainage basin mapping at the 2-foot and 1-foot contour level, GIS mapping of all storm sewer lines of eight inches or greater, and the identification of specific problem areas.

One of the most likely suspects for this stream is the lake at Memorial Park and its substantial population of waterfowl. The monitoring program must determine the magnitude of fecal coliform contribution from this source. If it is significant, a strategy to decrease it will be necessary. Strategies might include removal or reduction of the bird population and treatment of the effluent from the lake.

Phase I Implementation

Funding options will be explored by the task force. The Clean Water Act §319 funds, state revolving loan fund, Georgia Environmental Facilities (GEFA) grants and loans, Community Development Block Grants, and local funds are sources to explore. Human resources are available through local water quality citizens' groups and will be explored, as well as the many services of the University of Georgia.

Once funding is established, the task force members will pursue measures to reduce the contributions of the sources identified.

Monitoring Progress

After implementation of the strategies has continued for a reasonable length of time, monitoring will be repeated to determine the extent of improvement. The purpose will be to have Anne Court Branch removed from the §303(d) list if monitoring shows compliance with the fecal coliform standard.

Subsequent Phases

If the second round of monitoring shows that the stream remains in violation of the fecal coliform standard, then the previous steps will be repeated until acceptable water quality is attained.

Reporting

The task force will write an annual report on progress on the TMDL implementation plan and will prepare a final report showing that water quality compliance has been achieved.

Ongoing Maintenance, Monitoring, and Follow-up

The task force will develop a strategy for maintaining the water quality standard in the future. It will also devise a method of monitoring to assure that standards are indeed maintained.

This plan may be modified according to experience and circumstances.

STATE OF GEORGIA
TMDL IMPLEMENTATION PLAN FOR: Anne Court Branch
(STREAM)

RIVER BASIN: Oconee
(PARAMETER) PLAN DATE: 3/27/01

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|---|--|--|--|-------|-------------------|
| Prepared by: Joseph Tichy Northeast Georgia Regional Development Center Address:305 Research Drive City:Athens State: Georgia Zip: 30605 e-mail: jtichy@negrdc.org Date Submitted to EPD: _____ | | Or Prepared By: _____ Address: _____ City: _____ State: _____ Zip: _____ e-mail: _____ Date Submitted to EPD: _____ | | | |
| <p style="text-align: center;">General Information</p> Obtain this information from the TMDL document or other information. When completed, this document will be a self-contained report independent of the TMDL document. | | <p style="text-align: center;">Significant Stakeholders</p> Identify local governments, agricultural organizations or significant land holders, commercial forestry organizations, businesses and industries, and local organizations including environmental groups with a major interest in this water body. | | | |
| TMDL ID (to be entered by EPD) | OCO0000002 | Name/Organization | Unified Government of Athens-Clarke County | | |
| Water body name | Anne Court Branch | Address | P.O. Box 1868 | | |
| HUC basin name | Upper Oconee River | City | Athens | State | GA Zip 30603-1868 |
| HUC number | 030701010307 | Phone | 706-613-3470 | | e-mail |
| Primary county | Clarke | Name/Organization | Also see accompanying list. | | |
| Secondary county | N/A | Address | | | |
| Primary RDC | Northeast Georgia | City | | State | Zip |
| Secondary RDC | N/A | Phone | | | e-mail |
| Water body location | Athens (Clarke County) | Name/Organization | | | |
| | | Address | | | |
| Miles or area impacted | 1.1 mi. | City | Athens | State | GA Zip 30601 |
| Parameter addressed in plan | Fecal coliform | Phone | | | e-mail |
| Water use classification | Fishing | Name/Organization | | | |
| Degree of impairment | Partially supporting use <input type="checkbox"/> | Address | | | |
| | Not supporting use <input checked="" type="checkbox"/> | City | | State | GA Zip 30603 |
| Date TMDL approved by EPA | | Phone | | | e-mail |
| Impairment due to | Point sources <input type="checkbox"/> | Name/Organization | | | |
| | Nonpoint sources <input checked="" type="checkbox"/> | Address | | | |
| | Both <input type="checkbox"/> | City | | State | Zip |
| Point source-Form A; Nonpoint source-Form B; Both-Form A+B+C | | Phone | | | e-mail |

If more, add to comments on last page.

FORM B

SUMMARY OF ALLOCATION MODEL RESULTS FROM TMDL DOCUMENT (existing load, target TMDL, and needed reduction)

| EXISTING LOAD | TARGET TMDL | NEEDED REDUCTION |
|---------------|---------------|---------------------|
| 454 cfu/100ml | 150 cfu/100ml | 304 cfu/100ml (70%) |
| | | |

I. IDENTIFY **NONPOINT SOURCE** CATEGORIES AND SUBCATEGORIES OR INDIVIDUAL SOURCES WHICH MUST BE CONTROLLED TO IMPLEMENT LOAD ALLOCATIONS:

List major nonpoint sources contributing to impairment including those identified in TMDL document.

| SOURCE | DESCRIPTION OF CONTRIBUTION TO IMPAIRMENT | RECOMMENDED LOAD REDUCTION (FROM TMDL) |
|------------------|---|--|
| Urban Pervious | Pet and wildlife waste from runoff; dumpsters; miscellaneous urban. | 70% |
| Urban Impervious | As above; sewer leakage and overflow; possible relict septic tanks | 70% |
| Forest Pervious | Wildlife waste runoff | 70% |
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II. DESCRIBE ANY REGULATORY OR VOLUNTARY ACTIONS INCLUDING MANAGEMENT MEASURES OR OTHER CONTROLS BY GOVERNMENTS OR INDIVIDUALS THAT SPECIFICALLY APPLY TO THE POLLUTANT AND THE WATERBODY FOR WHICH THE TMDL WAS WRITTEN, THAT WILL BE ACCOMPLISHED THROUGH RELIABLE AND EFFECTIVE DELIVERY MECHANISMS, AND THAT WILL HELP ACHIEVE THE LOAD ALLOCATIONS IN THE TMDL:

See the attachment for more instructions.

Existing or required regulatory actions

| RESPONSIBLE GOVERNMENT, ORGANIZATION OR ENTITY | NAME OF REGULATION/ORDINANCE | DESCRIPTION | ENACTED OR PROJECTED DATE (mm/yy) | STATUS |
|---|-------------------------------------|---|--|---------------|
| Clarke County Health Dept. | Septic Tank Permitting | Requires permitting of septic tanks, soil testing, installation code. | Unknown | Ongoing |
| Athens-Clarke County Planning Dept. | Land Development Ordinance | Require some storm water facilities on larger developments – driven by quantity, not quality. | Unknown | Ongoing |
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Existing voluntary actions

| RESPONSIBLE ORGANIZATION OR ENTITY | NAME OF ACTION | DESCRIPTION | ENACTED OR PROJECTED DATE (mm/yy) | STATUS |
|---|-----------------------|---|--|---------------|
| Community Watershed Project | Education & Research | Brochures, stream walks, Annual “River Rendezvous”; press articles | Ongoing | Ongoing |
| ACC Utilities Dept. | Maintenance | Regular clearing and inspection of sewer lines; continual inspection of known problem locations | Ongoing | Ongoing |
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Additional recommended regulatory or other measures which should be implemented to reduce the loads of the TMDL parameter

| ENTITY/ORGANIZATION RESPONSIBLE | NAME OF PROPOSED REGULATION/ORDINANCE/ OTHER | DESCRIPTION | ENACTED OR PROJECTED DATE (mm/yy) | STATUS |
|---|--|--|-----------------------------------|--|
| Athens-Clarke County; volunteer organizations | Monitoring | Monitoring regime TBA to identify specific sources | 08/01 | Under discussion |
| Athens-Clarke County | Storm Water Ordinance/System Design | Incorporate water quality into design and operation of storm water facilities; incorporate storm water quality control into development ordinances | 2003 | Under study for general NPDES storm water permitting |
| ACC, Health Dept., other TF members | Illicit connections | Identify any illicit connections of fecal sources to drainage system | 2002 + | Under consideration |
| ACC Leisure Services | Lake management | Steps to reduce fecal coliform output from Memorial Park | 2001 + | Under consideration |
| | | | | |

III. SCHEDULE FOR IMPLEMENTING MANAGEMENT MEASURES OR OTHER CONTROL ACTIONS:

These must be implemented as expeditiously as practicable within five years of when the implementation plan is accepted by EPA.

| IMPLEMENTATION ACTION | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 |
|--|--------|--------|--------|--------|--------|
| Form stakeholders group | X | | | | |
| Organize implementation work with stakeholders and local officials to identify remedial measures and potential funding sources | X | X | | | |
| Identify sources of TMDL parameter | X | X | | | |
| Develop management programs to control runoff including identification and implementation of BMPs (Phase I): | | | | | |
| Agriculture | | | | | |
| Forestry | | | | | |
| Urban | | X | X | X | X |
| Mining | | | | | |
| Organize and implement education and outreach programs | X | X | X | X | X |
| Detect and eliminate illicit discharges | | X | X | | |
| Evaluate additional management controls needed | | | X | | |
| Monitor and evaluate results | | | | X | X |
| Reassess TMDL allocations | | | | | X |
| Provide periodic status reports on implementation of remedial activities | | X | X | X | X |

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|--|--|--|--|--|----------|
| and review/modify implementation plan | | | | | |
| If needed, begin process for Phase II (next 5 years) and subsequent phases | | | | | X |

IV. PROJECTED ATTAINMENT DATE AND BASIS FOR THAT PROJECTION:

The projected attainment date is 10 years from acceptance of the implementation plan by EPA.

V. MEASURABLE MILESTONES:

- Number of management controls and activities already implemented ___ 4 ___
- Number of management controls and activities proposed in five-year work program ___ 4 ___
- Number of management controls and activities actually implemented in five-year work period _____ (to be completed after 5 years)
- Stream sampled to identify areas of concern developed See monitoring pla to be
- Other _____ _____
- Other _____ _____

VI. MONITORING PLAN:

Describe previous or current sampling activities or other surveys to detect sources or to measure effectiveness of management measures or other controls.

| ORGANIZATION | TIME FRAME | PARAMETERS | PURPOSE | STATUS |
|---|-----------------|------------------|--|-----------|
| USGS | Mar – Nov, 1999 | PH, FC | General water quality monitoring | Completed |
| Athens-Clarke Co. (Utilities Dept.) | 1994 – 1995 | FC, Temp, pH, DO | Monitor in response to spills | Completed |
| Athens-Clarke Co. (Utilities & Public Works Depts.) | Continual | Uncertain | Various | Ongoing |
| Upper Oconee Watershed Network | Unknown | Unknown | General survey of water quality; uncertified samplers, did not necessarily use standard methods. | Ongoing |
| | | | | |

Describe any planned or proposed sampling activities or other surveys. (Scheduled EPD sampling can be found in the Basin Planning document.)

| ORGANIZATION | TIME FRAME | PARAMETERS | PURPOSE | STATUS |
|--|-------------------|-------------------|---------------------------------|--|
| EPD | 2004 | All | basin planning | |
| Upper Oconee Watershed Network | 2001 – 2005 | FC, other | Support for TMDL implementation | Under consideration |
| Athens-Clarke County (Utilities & Public Works Depts.) | 2001 – 2005 | FC | Support for TMDL implementation | TBD pending ability to secure funding from local, state, federal sources |
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VII. CRITERIA TO DETERMINE WHETHER SUBSTANTIAL PROGRESS IS BEING MADE:

- % concentration or load change (monitoring program)
- Categorical change in classification of the stream (delisting the stream is the goal)
- Regulatory controls or activities installed (ordinances, laws)
- Best management practices installed (agricultural, forestry, urban, park management)

COMMENTS
