STATE OF GEORGIA TIER 2 TMDL Implementation Plan (Revision #01) Segment Name: Calls Creek Date: \_9.18.09\_ River Basin: Oconee Local Watershed Governments: Watkinsville, Oconee County

# 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 non-point pollution, stakeholders and public involvement, and education/outreach activities. In addition, the plan describes regulatory and voluntary practices/control actions (Best Management Practices, or BMPs) to reduce non-point sources of pollutants, milestone schedules to show development of the BMPs (*measurable milestones*), and a monitoring plan to determine BMP effectiveness.



Table 1. IMPAIRED SEGMENTS IN THE HUC 10 WATERSHED

| IMPAIRED SEGMENT | IMPAIRED SEGMENT LOCATION             | EXTENT<br>(mi/ac) | CRITERIA VIOLATED | EVALUATION |
|------------------|---------------------------------------|-------------------|-------------------|------------|
| Calls Creek      | Lampkin Branch to Middle Oconee River | 4.1               | Fecal Coliform    | NS         |
|                  |                                       |                   |                   |            |

# II. GENERAL INFORMATION ABOUT THE HUC 10 WATERSHED AND THE INDIVIDUAL IMPAIRED SEGMENT

This section reviews HUC 10 watershed characteristics followed by pertinent information on the drainage delineation of the individual stream segment. New conditions or changes to information contained in the TMDL study documents should be in **bold** and <u>underlined</u>.

#### HUC 10 Watershed

The HUC 10 #0307010103 encompasses parts of Oconee, Clarke, Barrow, and Jackson counties and Arcade, Winder, Statham, Bogart, and Watkinsville. The segment does not support its designated use of fishing due to fecal coliform impairment. Calls Creek, the impaired segment is a tributary to the Middle Oconee River, which is also listed for several impaired segments with established TMDLs. The HUC 10 watershed is 107,415.05 acres.

The Calls Creek TMDL segment is 4.1 miles in length and flows northeasterly from an area northeast of Bishop, through Watkinsville and Oconee County to its confluence with the Middle Oconee River. Because the watershed is located in 2 jurisdictions, TMDL implementation efforts must be shared by those counties

The topography of the watershed is deep river channels with high banks. Inside bends usually have wide, flat floodplains. Steep sloping ridges dominate the areas outside the floodplains. Slope in the watershed rarely exceeds 30° and 41% of the land has a slope of 10° or less.

| HUC 10 Land Cover 2001       | <b>Total Acres</b> | % Total |
|------------------------------|--------------------|---------|
| Barren Land (Rock/Sand/Clay) | 789.57             | 0.74    |
| Cultivated Crops             | 201.04             | 0.19    |
| Deciduous Forest             | 33,084.60          | 30.80   |
| Developed, High Intensity    | 653.44             | 0.61    |
| Developed, Low Intensity     | 7,786.41           | 7.25    |
| Developed, Medium Intensity  | 1,830.44           | 1.70    |
| Developed, Open Space        | 13,248.38          | 12.33   |
| Emergent Herbaceous Wetlands | 6.32               | 0.01    |
| Evergreen Forest             | 10,477.33          | 9.75    |
| Grassland/Herbaceous         | 7,024.28           | 6.54    |
| Mixed Forest                 | 1,137.62           | 1.06    |
| Open Water                   | 710.50             | 0.66    |
| Pasture/Hay                  | 26,734.18          | 24.89   |
| Shrub/Scrub                  | 164.89             | 0.15    |
| Woody Wetlands               | 3,566.04           | 3.32    |
| TOTAL                        | 107,415.05         |         |

Deciduous Forest, Pasture/Hay, and Developed are the dominate land cover within the HUC 10 watershed accounting for 30.80%, 24,89%, and 21.89% respectively.

Major land uses within the watershed include agricultural (41.32%), undeveloped/unused (27.27%), and residential (20.68%). Undeveloped/unused land is usually land within platted or existing developments that have not been built on. Generally, it is most associated with residential development, though, in Clarke County, large agricultural tracts are identified as undeveloped. Residential development associated with the cities is to some degree on public sewerage systems; however, most of the scattered residential development in the counties is on private septic systems. The greatest concentration of subdivision is in Clarke and Oconee counties.

2008 Agricultural data for Oconee County shows a no reduction in row crops, an 8% reduction in beef cattle since, a 6% reduction in poultry houses, and an 11% reduction in broiler production 2001. On horses increased, 46. (Source: <u>www.georgiastat.uga.edu</u>). Livestock contributes high sediment and nutrient loads, as well as high loads of oxygen-demanding chemicals and bacterial and microbial pathogens, which affect human health, including fecal coliform bacteria. With respect to cultivation of crops, nonpoint source pollution can originate from bare soil, excessive fertilizer, or pesticides. Pesticides can be insoluble or soluble, and include herbicides, insecticides, matricides, and fungicides, be transported directly through surface runoff and can cause acute and chronic toxicity problems in the water and throughout the entire food chain.

**Potential Non-point Source Pollutants**: Common possible non-point source pollutants include livestock, crop cultivation, and urban runoff. Nonpoint source contamination from urban runoff can impair streams due to extensive commercial and industrial area, unauthorized discharges, and accidental spills. All the jurisdictions in the HUC 10 watershed have public sewerage service though, none are jurisdiction-wide and there is still a reliance on private septic systems.

Within the HUC 10 watershed, 25 Developments of Regional Impact have been submitted since 2001 in Barrow, Athens-Clarke, Jackson and Oconee counties. Because DRIs are submitted prior to a zoning decision and are advisory only, a DRI determination does not in of itself affect whether a rezoning or development is permitted or whether it is constructed. It does, however, provide a measure of large-scale projects planned for a jurisdiction. Of the 25 submitted, 22 were determined to be in the best interest of the state though a negative determination will not prohibit the construction of the proposed development. Detailed information was available on only 16 projects. Those 16 projects proposed 3,569 housing units, over 200 acres of retail, 1,18-hole golf course, 1 sewer treatment plant expansion, over 2 million sq. ft. of commercial/office space, and 9,000,000 sq. ft. for warehouse/industrial/distribution. Of these, only the 3 projects in Athens-Clarke County could be served by a public sewerage system.

According to the Oconee County Unified Development Code, stream buffers on this stream and its tributaries are the state-mandated 25 feet.

The watershed is in the Oconee River RC&D region, which provides training in Erosion and Sedimentation Control that is available to all member counties.

#### Significant activities:

### Permitted Water Pollution Control Facilities and Land Application Systems:

There are 6 permitted WPCF in the watershed as of June 2009; Statham WPCP, Blue Circle Materials, Arbor Glenn Mobile Home Park, Athens-Clarke County Middle Oconee River WPCP, Oconee County Calls Creek WPCP, and Southwire.

#### NPDES-permitted Municipal Separate Storm Water Sewer Systems (MS4):

Both Watkinsville and Oconee County have permitted systems.

NPDES-permitted Municipal Separate Storm Water Sewer Systems discharge points within the watershed are located in Statham Water Pollution Control Plat (tributary to Barber Creek), Athens Clarke County (Middle Oconee River), Oconee County Water Pollution Control Plan (tributary to Calls Creek), Oconee County (Rocky Branch Road), (Southwire (tributary to Middle Oconee River), and AmeriPride Uniform Service,

Stormwater management programs are active in Barrow, Clarke, Jackson, and Oconee counties. The purpose of these programs is to stop pollution at its source. Programs consists of six elements: public education and outreach; public participation; illicit discharge detection and elimination; construction site runoff control; post-construction runoff control; and, pollution prevention and good housekeeping.

#### Water Supply Watershed Protection Activities:

Part V ordinances adopted that impact the HUC 10 watershed: Oconee County Groundwater Recharge Protection Ordinance; Wetlands Protection ordinances adopted by Athens-Clarke, Barrow, Jackson, and Oconee counties and the cities of Winder, Statham, Arcade, Bogart, and Winterville; and River Corridor Protection in Oconee, Jackson and Athens-Clarke counties.

#### Permitted Concentrated Animal Feeding Operations:

According to the Stakeholders, there are no permitted concentrated animal feeding operations in the watershed.

#### **Solid Waste Disposal Sites**

2005 data from EPD identifies four permitted solid waste disposal sites in the watershed, all in Barrow County; Barrow County Hwy 29E, Barrow County Ref Co. (inactive), Barrow County Jones Road (inactive), Statham.

#### Wastewater permit-drive Watershed Monitoring Plans and Assessment w/service areas and status

Monitoring Plan, Assessments, and Protection Plans have been completed as detailed in the following table.

| Jurisdiction        | Management Plan | Date   | Assessment | Date   | Protection<br>Plan | Date   |
|---------------------|-----------------|--------|------------|--------|--------------------|--------|
| Athens              | Yes             | Sep 04 | yes        | Aug.06 |                    |        |
| Arcade              | Yes             | Jun 07 |            |        |                    |        |
| Barrow County       | Yes             | Apr 06 | yes        | Jan.07 |                    |        |
|                     |                 |        |            |        |                    |        |
| Oconee              |                 |        |            |        |                    |        |
| County/Watkinsville | Yes             | Mar 00 | yes        | Jan.02 | yes                | May 05 |
| Statham             | Yes             | May 02 | yes        | Aug.02 |                    |        |
| Winder              | Yes             | Jun 04 | yes        | Aug-05 | yes                | Feb 06 |

# Other ongoing or proposed watershed management plans or assessments None.

### Local Erosion and Sedimentation Control Programs

Erosion and Sedimentation Control plans have been adopted and permits are issued as detailed in the following table:

| Jurisdiction      | Erosion and Sedimentation Ord | Issuing Authority |
|-------------------|-------------------------------|-------------------|
| Arcade            | yes                           | City              |
| Athens-Clarke Co. | yes                           | Public Works      |
| Barrow Co.        | yes                           | Planning Dept     |
| Bogart            | yes                           | EPD               |
| Jackson Co.       | yes                           | Plan & Dev Dept   |
| Oconee Co.        | yes                           | Insp. Dept        |
| Statham           | yes                           | EPD               |
| Watkinsville      | yes                           | Mayor             |
| Winder            | yes                           | EPD               |

#### SWAP

Source Water Assessment Plans were developed for Athens-Clarke County (Middle and North Oconee rivers intakes and Sandy Creek intake) and Statham. The coverage areas for these plans include the Inner Management Zone (7 miles upstream from the intake) and the Outer Management Zone (13 miles upstream from the Inner Management Zone).

### Local Water Quality Management and Sampling Programs

Sampling programs within the watershed are conducted by Athens-Clarke County and Oconee County. The Upper Oconee Watershed Network regularly monitors streams in the watershed in Jackson and Clarke counties. Monitoring data can be found at <a href="http://www.uown.org/data.html">http://www.uown.org/data.html</a>. The Northeast Georgia Regional Commission (RC) is monitoring 3 sites in the watershed during 2009. Those sites are Kingswood Branch, Middle Oconee River, and N. Bypass Branch. Data is available by contacting Lee Carmon, <a href="http://carmon@negrc.org">Lcarmon@negrc.org</a> at the RC or Georgia EPD.

UOWN has monitored Calls Creek at least annually since 2000 with the exception of 2005. The monitoring site is Calls Creek at Hwy 15. Monitoring data is shown in Table XX.

### UOWN Quarterly Monitoring Data for MIDO 701

### Calls Creek at Hwy. 15, Watkinsville

#### \* Values indicative of degradation:

| Date        | Visual<br>Score | Biologica<br>I Index | Conductivity<br>(μs/cm) | Turbidity<br>(NTU) | Phosphorous<br>as PO4<br>(mg/l)*** | Nitrate as<br>NO3<br>(mg/l)*** | DO<br>(mg/L) | Temp<br>(°C) | рН        | Fecal<br>(CFU/100mL) | E. coli<br>MPN/100ml | Enterococci<br>MPN/100ml | T Coliform<br>MPN/100ml | Nitrate<br>as N |
|-------------|-----------------|----------------------|-------------------------|--------------------|------------------------------------|--------------------------------|--------------|--------------|-----------|----------------------|----------------------|--------------------------|-------------------------|-----------------|
| *           | <15             | <11                  | >80                     | >25                | 0.1 ppm                            | 1 mg/l                         | <5           | >32          | <6 - 8.5> | >400                 | 300                  |                          |                         |                 |
| Spring 2000 | 52              | 8                    | 43.7                    | 15.1               |                                    |                                | 8.70         |              | 6.2       | 100                  |                      |                          |                         |                 |
| 2000-07-08  | 39              | 18                   | 56.0                    | 15.0               |                                    |                                |              | 23.7         | 6.5       | 1600                 |                      |                          |                         |                 |
| Fall 2000   | 46              | 12                   | 54.3                    | 7.0                |                                    |                                |              | 16.6         | 6.2       | 180                  |                      |                          |                         |                 |
| Winter 2001 | 31              | 20                   | 50.7                    | 11.5               |                                    |                                | 11.70        | 6.0          | 6.1       | 160                  |                      |                          |                         |                 |
| 2001-04-28  | 39              | 10                   | 56.0                    | 7.0                |                                    |                                | 8.80         | 16.5         | 7.3       | 125                  |                      |                          |                         |                 |
| 2001-07-14  | 52              | 12                   | 63.6                    | 8.9                |                                    |                                | 6.6          | 22.7         | 7.0       | 340                  | 393                  | 960                      | 10462                   |                 |
| 2001-11-03  |                 | 14                   | 56                      | 5                  | bdl                                |                                | 7.4          | 14.7         | 7.2       |                      | 269                  | 141                      |                         | 0.0             |
| 2002-01-26  | 44              | 22                   | 43                      | 8                  |                                    | 0.5                            | 10.41        | 9.7          | 6.5       | 255                  | 233                  | 10                       | 907                     |                 |
| 2002-04-27  |                 | 24                   | 52                      |                    |                                    |                                |              |              | 6.7       | 250                  | 288                  | 889                      | 17328                   |                 |
| 2002-09-14  |                 |                      | 41                      | 23                 |                                    |                                | 7            | 21.9         | 5.7       |                      |                      |                          |                         |                 |
| 2003-02-08  |                 |                      |                         |                    | 0.01                               |                                |              |              |           | 0                    | 41                   | 0                        | 84                      |                 |
| 2003-04-05  | 50              | 22                   | 51                      | 10.5               | 0.06                               |                                |              |              |           | 800                  | 456                  | 40                       |                         |                 |
| 2003-07-12  | 42              |                      | 56.4                    | 12.5               | 0.03                               | 4.2                            | 7.4          | 23.9         | 6.4       | 430                  | 327                  | 405                      | 24192                   |                 |
| 2003-10-18  | 51              | 18                   |                         |                    |                                    |                                |              |              |           |                      |                      |                          |                         |                 |
| 2004-01-31  |                 |                      |                         |                    |                                    |                                |              |              |           |                      |                      |                          |                         |                 |
| 2004-04-02  | 27              | 11                   | 52                      | 10.7               | 0                                  | 1.3                            |              |              | 6         |                      | 211                  | 31                       | 15531                   |                 |
| 2004-07-17  | 47              | 20                   |                         |                    |                                    |                                |              |              |           |                      |                      |                          |                         |                 |
| 2006-10-14  | 40              | 23                   | 75.5                    | 9.1                |                                    |                                |              |              | 6.67      |                      |                      |                          |                         |                 |
| 2007-04-14  | 47              | 7                    |                         |                    |                                    |                                |              |              |           |                      |                      |                          |                         |                 |
| 2008-04-05* |                 |                      | 59                      | 24.8               |                                    | 0.30                           |              |              | 6.9       |                      | 1,497                | 7,701                    | >24,192                 |                 |
| 2009-03-28* | 45              |                      | 47.2                    | 26.0               |                                    |                                |              |              | 6.7       |                      | 740                  | 100                      | 11,120                  |                 |

\* rain before

sampling

|         | Visual | Bio  | Cond | Turb | PO4 | NO3 | DO   | Temp | рН   | Fecal  | E. coli | Entero | T Col   |
|---------|--------|------|------|------|-----|-----|------|------|------|--------|---------|--------|---------|
| Count   | 15.0   | 15.0 | 16.0 | 15.0 | 4.0 | 4.0 | 8.0  | 9.0  | 15.0 | 11.0   | 10.0    | 10.0   | 7.0     |
| Minimum | 27.0   | 7.0  | 41.0 | 5.0  | 0.0 | 0.3 | 6.6  | 6.0  | 5.7  | 0.0    | 41.0    | 0.0    | 84.0    |
| Median  | 45.0   | 18.0 | 53.2 | 10.7 | 0.0 | 0.9 | 8.1  | 16.6 | 6.5  | 250.0  | 307.5   | 120.5  | 11120.0 |
| Average | 43.5   | 16.1 | 53.6 | 12.9 | 0.0 | 1.6 | 8.5  | 17.3 | 6.5  | 385.5  | 445.5   | 1027.7 | 11374.9 |
| Maximum | 52.0   | 24.0 | 75.5 | 26.0 | 0.1 | 4.2 | 11.7 | 23.9 | 7.3  | 1600.0 | 1497.0  | 7701.0 | 24192.0 |

#### **Storm Water Utility Districts**

Only Athens-Clarke County has a storm water utility district.

#### Watershed Associations and Adopt-A-Stream groups

The Adopt-a-Stream website, <u>http://aesl.ces.uga.edu/aascd/Get\_Involved/local\_coord.html</u> lists three Adopt-a-Stream organizations within the watershed: Athens, Keep Barrow Beautiful, and the Upper Oconee Watershed Network.

Georgia River Network (<u>www.garivers.org</u>) lists the following watershed associations within the Oconee Watershed: Athens Grow Green Coalition, Friends of Barber Creek, UGA Fisheries Society, and the Upper Oconee Watershed Network (UOWN). All are involved in community education and some coordinate river/stream cleanups. Only UOWN is involved in monitoring.

#### Impaired Stream Segment Watershed

The Calls Creek TMDL segment is 4 miles in length and in located in east-central Oconee County. The data that listed the segment were collected at Calls Creek at Hickory Drive in unincorporated Oconee County. Oconee County and Watkinsville are the only local governments within the HUC 10 watershed boundary for this segment. The Calls Creek segment watered is 2231.41 acres.

| 2001 Land Cover - Calls Creek TMDL<br>Impaired Segment Watershed | Acres    | % Total |
|--|----------|---------|
| Barren Land (Rock/Sand/Clay)                                     | 12.22    | 0.55    |
| Cultivated Crops   | 0.76     | 0.03    |
| Deciduous Forest   | 813.95   | 36.48   |
| Developed, Low Intensity   | 208.29   | 9.33    |
| Developed, Medium Intensity                                      | 30.89    | 1.38    |
| Developed, Open Space  | 378.29   | 16.95   |
| Evergreen Forest   | 137.98   | 6.18    |
| Grassland/Herbaceous   | 196.18   | 8.79    |
| Mixed Forest   | 38.08    | 1.71    |
| Open Water   | 11.32    | 0.51    |
| Pasture/Hay  | 387.54   | 17.37   |
| Shrub/Scrub  | 3.09     | 0.14    |
| Woody Wetlands   | 12.81    | 0.57    |
| TOTAL  | 2,231.41 | 100.00  |

| Existing Land Use Calls Creek<br>Impaired Segment Watershed | 1996<br>Sum<br>Acres | % Total<br>1996 | 2008<br>Sum<br>Acres | %<br>Total<br>2008 | % Change<br>1996 - 2008 | %<br>Total<br>2028 |
|---|----------------------|-----------------|----------------------|--------------------|-------------------------|--------------------|
|   |                      |                 |                      |                    |                         |                    |
| Agriculture/Forestry  | 713.51               | 31.97           | 629.8                | 28.22              | -13.29                  | 5.73               |
| Commercial  | 51.49                | 2.31            | 74.27                | 3.33               | 30.67                   | 10.69              |
| Industrial  | 8.96                 | 0.40            | 6.8                  | 0.30               | -31.76                  | 0.34               |
| Park/Recreation/Conservation                                | 0                    | 0.00            | 99.91                | 4.48               | 100.00                  | 2.32               |
| Public/Institutional  | 53.63                | 2.40            | 67.62                | 3.03               | 20.69                   | 8.73               |
| Residential   | 891.49               | 39.95           | 1,119.51             | 50.17              | 20.37                   | 64.54              |
| Transportation/Communication/Uti                            | 181.8                | 8.15            | 177.97               | 7.98               | -2.15                   | 6.25               |
| Undeveloped/Vacant  | 330.67               | 14.82           | 55.67                | 2.49               | -493.98                 | 0.00               |
|   |                      |                 |                      |                    |                         |                    |
| Total   | 2,231.55             | 100.00          | 2,231.55             | 100.00             |                         | 100.00             |
|   |                      |                 |                      |                    |                         |                    |

Source: NEGRDC GIS

Primary land cover in the impaired segment watershed: Deciduous Forest, Developed Open Space, and Pasture Hay. However, the primary land use in the segment watershed is residential. The watershed is primarily urban, having transitioned from agricultural to developed with a 30% increase in lands designated commercial and a 20% increase each in lands designated public/institutional and residential. The population of Watkinsville increased 34.7% from 2000 to 2007 and in 2008 had an estimated population of 2,825. Oconee County's population increased 19.6% for the same period.

The Oconee County Utility Department administers the county's water and sewerage system and this system serves the City of Watkinsville by contract. The Department's primary sewerage treatment facility, Calls Creek Wastewater Reclamation Facility (WRF), is located in Watkinsville, upstream of the EPD monitoring site that triggered the listing of this stream segment. Most of the city within the watershed is served by the public sewerage system; however, neighborhoods in the downstream-most part of the impaired segment are served by individual septic systems.

The Calls Creek WRF is located about 2.3 miles upstream of the monitoring point and the plant discharges directly into Calls Creek which is a tributary to the Middle Oconee River. This is the only NPDES discharge in the watershed.

The Oconee County Comprehensive Plan 2007-2030 notes that the county upgraded the WRF from 400,000 gpd to 0.667 mgd using the Membrane Filter Process in 2002, with additional membranes added in 2007 which increased capacity to 1.0 mgd. The County plans to increase its capacity to 2.0 mgd by 2010-2011.

Both Oconee County and Watkinsville passed the required Part V Environmental Protection Ordinances applicable to their respective jurisdictions; however, only wetlands occur within the impaired segment watershed. The wetlands ordinances passed by both jurisdictions

are consistent with the Georgia Department of Natural Resources protection criteria. Additionally, according to the Oconee County Unified Development Code, buffer requirements on all state waters are consistent with the state standards of 25 ft.

In 2004, Oconee County implemented a Stormwater Management Program as required under its NPDES Phase II. The program is designed to reduce pollutant discharge to the maximum extent possible, protect water quality, and satisfy the requirements of the Clean Water Act.

There are 2 developments of regional impact within the watershed, Presbyterian Village and Thornwood. Presbyterian Village is a proposed Continuing Care Retirement Village that will have 305 dwelling units and a 100,000 square foot administrative/institutional building. The estimated completion date for this development is 2010. Thornwood is a mixed-use development comprised of 57 dwelling units, 5.8 acres of retail, 30 acres dedicated for a school, 86.6 acres for offices, and 10 acres for a church. This DRI was submitted in 2001 with a proposed build-out date of 2004 for the residential portion only. To date, the residential portion has been constructed as well as one commercial lot. Plans were submitted on a second commercial lot but construction was suspended due to financing.

Oconee County is served by the Oconee River RC&D which provides Erosion and Sedimentation Control training to its members including Oconee County.

### 319(h) grants

No 319(h) funded projects have been conducted or are planned in the watershed.

#### Georgia Forestry Commission District, Water Quality Coordinator, Logging Activities

The Calls Creek watershed is in the Georgia Forestry Commission District 2, located in Gainesville, GA. The water quality coordinator is presently vacant. There is no special monitoring of logging activities; however, the Georgia Forestry Commission does conduct Best Management Practice exams for logging activities as they occur.

#### **Significant Watershed Planning Activities**

The Watershed Protection Plan for Calls Creek, September 2005, identifies a number of protection programs, ordinances, regional projects, design standards, and public education initiatives to protect and restore water quality.

Protection programs include the county's acquisition of greenspace along floodplains of streams such as Calls Creek. In addition, 20% of a project site is reserved for greenspace under the Master Planned Development provisions in the county's Unified Development Code.

The remaining recommendations largely include initiatives presently implemented including erosion control certification, adherence to state regulations as they pertain to agricultural activities, preservation of stream buffers, and tree protection.

# III. CAUSES AND SOURCES OF SEGMENT IMPAIRMENT(S) LISTED IN TMDLs

Table 2. provides information contained in the current TMDL for the impaired water body. By definition, "wasteload allocations" (WLA) for municipal and industrial wastewater discharges and (WLAsw) for storm water outfalls are established in permitted areas, while "load allocations" (LA) are established for non-point sources of pollution. <u>Wasteload allocations are assigned by Georgia EPD during the NPDES permitting process</u> and are not part of the TMDL implementation planning process, which deals solely with non-point sources of pollutants.

### Table 2. WASTE LOAD AND LOAD ALLOCATIONS AND TMDLS FOR THE IMPAIRED SEGMENT

| STREAM SEGMENT<br>NAME | LOCATION                                 | CRITERIA<br>VIOLATED | WLA      | WLAsw    | LA       | TMDL     |
|------------------------|--|----------------------|----------|----------|----------|----------|
| Calls Creek            | Lampkin Branch to Middle Oconee<br>River | Fecal Coliform       | 7.03E+10 | 2.30E+13 | 1.92E+13 | 4.70E+13 |

Table 3. contains information presented in the TMDL study that this implementation plan addresses.

### Table 3. POTENTIAL NON-POINT SOURCES OF IMPAIRMENT INDICATED IN THE TMDLs

| CRITERIA<br>VIOLATED :_FC       | WQ STANDARD  | SOURCES OF IMPAIRMENT | NEEDED % REDUCTION<br>(FROM THE TMDL) |
|---------------------------------|--|-----------------------|---------------------------------------|
| Fecal Coliform<br>Bacteria (FC) | 1,000 per 100 ml (geometric mean<br>Nov – April)<br>200 per 100 ml (geometric mean<br>May – Oct) | M, UR, NP             | 56                                    |

# IV. IDENTIFICATION AND RANKING OF POTENTIAL NON-POINT SOURCES OF IMPAIRMENT

This section identifies and describes **in order of importance**, as determined through this TMDL implementation planning process, the extent and relative contributions from historic as well as current potential non-point sources of pollutants to the water quality impairment.

Sources in the Calls Creek TMDL segment watershed were identified by reviewing the *Watershed Protection Plan for Calls Creek, September 2005* and the watershed land use. Point data from the Georgia Environmental Protection Division were compiled and analyzed to determine the location of any point sources of pollution in the watershed. This data included the location of NPDES permitted facilities and landfills. Information was not available for LAS and CAFOs. In addition, 2007 aerial photos from the National Agricultural Imagery Program were used to determine possible sources of fecal coliform pollution within the watershed. 2007 land use data were also consulted to determine the extent of potential sources of fecal coliform.

#### **Point Sources**

There are no known point sources in the Calls Creek TMDL segment watershed.

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

### <u>Wildlife</u>

Based on 2007 NAIPS land cover data, 44.37% of the watershed land use is forested. Almost all of the land in close proximity to the TMDL segment is forested land. In forested areas it is likely that wildlife is the primary source of fecal coliform. The Georgia DNR Wildlife Resources Division's 2005-2014 Deer Management Plan calculates the actual, average deer population for Oconee County (Deer Management Unit 5) to be 44 deer per forested square mile. That would equate to about 68 deer in the watershed. Forested designates all areas that are not residential, commercial or industrial, cropland or open pastureland. Contributions from deer to coliform bacterial loadings in water bodies are considered less significant than contributions made from water flow, raccoon, and beaver. Stakeholders report that there are beaver in the stream.

### Animal Production

Based on land use data, Agricultural/Forestry accounts for 28% of the watershed. However, this does not correlate to the amount of the land in animal production. The Agricultural Research Station is comprised of 90 acres. Cattle are kept on the property and the farm is the sole farm in close proximity to the TMDL segment; however, the Station's cattle were fenced out of the wetlands and streams in 2000. There are no other animal production operations in the watershed. The majority of the land designated as agricultural in the land use plan is pasture and trees.

### Failing Septic Systems

Residential accounts for 50% of watershed land use; however, a significant portion of Watkinsville development is served by the public sewerage system. However, it is likely that there are failing septic systems in the watershed, because there is no ordinance requiring maintenance and people typically don't provide regular maintenance to their systems.

### Sanitary Sewer Overflows

The Oconee County Utility Department has experienced two sanitary sewer spills into Calls Creek in 2009. The most recent was on July 13 and the spill was estimated at 1290 gallons. According to the Utility Department, the spill was caused by an accumulation of roots in the sewer line. The Utility Department repaired the line and initiated water quality sampling. Initial sampling indicated fecal coliform levels below Ga EPD plant permitted effluent limitation. Spill sampling data is as follows:

| Watkinsville Sewer Spill Sampling |                    |               |               |  |  |  |  |  |  |  |
|-----------------------------------|--------------------|---------------|---------------|--|--|--|--|--|--|--|
|                                   | July 13, 2009      | July 14, 2009 | July 17, 2009 |  |  |  |  |  |  |  |
| Upstream of Spill                 | 12                 | 9             | 25            |  |  |  |  |  |  |  |
| Downstream of Spill               | 16                 | 14            | 27            |  |  |  |  |  |  |  |
| Source: Oconee County             | Utility Department |               |               |  |  |  |  |  |  |  |

The Oconee Utility Department is planning an expansion of the sewer line that follows Calls Creek. The elevation of the line will be lowered to eliminate aerial crossing and the size of the line will be increased. Construction is anticipated during winter 2009.

#### Urban Runoff

Imperviousness is the largest factor contributing to both water quantify and water quality degradation. Imperviousness increases the amount of runoff and the amount of pollutants to receiving water bodies, as well as the frequency of occurrence. Existing land use indicates that about 39% of the watershed is developed; however, within Watkinsville, the creek is protected by undisturbed buffers. By 2028, it is anticipated that 92% of the watershed will be developed. This translates to an estimated 14% imperviousness for existing land use and 32% for future land use. Imperviousness over 25% may leave the watershed vulnerable to water resources degradation; however, non-structural control can reverse the potential for degradation.

Table 4. offers a simple format to rank **in order of importance**, as determined through this TMDL implementation planning process, the extent and relative contribution to the water quality impairment from all the potential non-point sources of pollution identified in Section IV. A "rating scale" of 0.5 to 5 has been developed to rank the sources. The rating chart provides guidance for rating the estimated extent (Rating A) and portion of the contribution (Rating B) from each potential non-point source and cause:

| Rating A:  | Rating B:   |        |
|--|---|--------|
| Rating Chart to Estimate Geographic Extent of the Source | Rating Chart to Estimate Portion of Contribution from the | Rating |
| or Cause in the Contributing Watershed                   | Source to the Pollutant Load Causing the Impairment       |        |
| None or negligible (approximately 0-5%)                  | None or negligible (approximately 0-5%)                   | 0.5    |
| Scattered or low (approximately 5-20%)                   | Scattered or low (approximately 5-20%)                    | 1      |
| Medium (approximately 20-50%)                            | Medium (approximately 20-50%)                             | 3      |
| Widespread or high (approximately 50% or more)           | Widespread or high (approximately 50% or more)            | 5      |
| Unknown  | Unknown   | UNK    |

# Table 4. EVALUATION OF POTENTIAL SOURCES OF STREAM SEGMENT IMPAIRMENT

| IMPAIRMENT SOURCES         | ESTIMATED EXTENT OF CONTRIBUTION |            | ESTIMATED PORTION OF CONT  | RIBUTION   | IMPACT<br>RATING |
|----------------------------|----------------------------------|------------|--|------------|------------------|
|                            | Comments                         | Rating (A) | Comments   | Rating (B) | (A X B)          |
| Wildlife                   | Forest is 58% of watershed       | 5          | Wildlife likely to be abundant and<br>some in close proximity to stream.<br>Stakeholders report beaver in<br>stream.   | 5          | 25               |
| Animal Production          | Agriculture is 35% of watershed  | 1          | Animal production is limited to the<br>USDA-ARS and cattle have been<br>fenced out of wetlands and streams<br>since 2000. The remainder of the<br>'agricultural' land is pasture/forest.                   | 1          | 1                |
| Sewer Line Leaks/Overflows | Residential is 21% of watershed  | 3          | There have been periodic overflows<br>within the public system. Utility Dept<br>planning to upgrade sewer line that<br>follows creek.  | 5          | 15               |
| Septic Systems             | Residential is 21% of watershed  | 3          | The upper reach of the impaired<br>segment has public sewerage;<br>however, the lower reach is largely<br>on private septic.   | 3          | 9                |
| Urban Runoff               | Developed is 48% of watershed    | 3          | Based on existing imperviousness,<br>anticipated imperviousness, and its<br>impact on water quality, contribution<br>is high; however, the stream is well<br>buffered throughout most of the<br>watershed. | 3          | 9                |

# V. CURRENT AND ACTIVE MANAGEMENT MEASURES AND ACTIVITIES

Table 5A. identifies significant current and active Best Management Practices (BMPs) that have been installed to address potential non-point sources of impairment listed in Section IV, Table 4., and provides ratings of each management measure's estimated Load Reduction Potential (LRP) when applied to a specifically identified non-point source. The rating chart provides guidance for rating the BMP Load Reduction Potential applied to a specifically identified non-point source:

| BMP Load Reduction Potential Rating Chart | Rating |
|---|--------|
| (Percent Removal of Pollutant by the BMP) |        |
| None or negligible (approximately 0-5%)   | .5     |
| Low to medium (approximately 5-25%)       | 1      |
| Medium to High (approximately 25-75%)     | 3      |
| High (approximately 75% or more)          | 5      |
| Unknown                                   | UNK    |

# Table 5A. CURRENT AND ACTIVE MANAGEMENT MEASURES AND ACTIVITIES

# GENERAL AND SPECIFIC MEASURES APPLICABLE TO CRITERION 1: Fecal Coliform

| BMPs<br>(1)   | RESPONSIBILITY<br>(2)                     | DESCRIPTION OF MEASURES<br>(3)  | FUNDING &<br>RESOURCES<br>(4)    | IMPAIRMENT<br>SOURCES<br>(5) | DATE<br>(6)          | BMP LRP<br>RATING<br>(7)   |
|---|---|---|----------------------------------|------------------------------|----------------------|--|
| Georgia Planning Act  | Local/County<br>Government                | Coordinated Planning Program, managed by<br>Georgia DCA, assigns local governments<br>Environmental Planning Criteria (set by Ga<br>DNR) to include in local/long-term<br>comprehensive plans:<br>• Water Supply Watersheds<br>• Groundwater<br>• Wetlands<br>• Protected Rivers<br>• Protected Mountains<br>Program also requires local governments to<br>identify Developments of Regional Impact<br>DRI) and develop plans to protect and<br>manage Regionally Important Resources<br>(RIR). | Local/County Governments         | Livestock and<br>wildlife.   | 1999 –<br>present    | Effectiveness<br>varies with<br>the specific<br>BMPs<br>applied. LRP<br>rating: NA   |
| Regulation of On-<br>Site Sewage<br>Management<br>Systems,<br>IAW O.C.G.A. 290-5-<br>26 | Georgia DHR,<br>County Board of<br>Health | Rules and regulations for installation and<br>repair of on-site sewage management<br>systems.   | County Board of Health           | Human                        | In-place,<br>ongoing | Effectiveness<br>varies with<br>the specific<br>application<br>and must be<br>individually<br>determined.<br>LRP rating:<br>NA |
| Fence Cattle out of<br>Wetlands and<br>Stream   | USDA-ARS                                  | Cattle fenced from wetlands/streams effective 2000.   | NRCS                             | Livestock                    | 2000-<br>present     | Effectiveness<br>is estimated<br>at 4%. LRP<br>rating: 3.  |
| Wetlands Protection<br>Ordinance  | Watkinsville and<br>Oconee County         | Requires local permit for any activity conducted within 50' of wetland.   | Part of development review fees. | Livestock and wildlife.      | 1999 -<br>present    | Effective as<br>long as buffer<br>maintained.<br>LRP rating: 3   |

|   |                                   |   |                                  |                           | 4                    |   |
|---|-----------------------------------|---|----------------------------------|---------------------------|----------------------|---|
| Natural Resource<br>Conservation Areas<br>Ordinance             | Oconee County                     | Restricts allowed land uses in identified conservation areas  | Part of development review fees. | Livestock and<br>wildlife | 2008 -<br>present    | Varies<br>depending on<br>location of<br>conservation<br>area in<br>relations to<br>TMDL<br>segment and<br>its tributaries.<br>LRP rating: 1                                    |
| Conservation and<br>Natural Resources<br>Easements<br>Ordinance | Oconee County                     | Requires all greenways, wetlands, and<br>primary conservation areas in subdivision<br>development to be in either conservation or<br>natural resources easement.  | Part of development review fees. | livestock and wildlife.   | 2008 –<br>present    | Varies<br>depending on<br>location of<br>easement in<br>relations to<br>TMDL<br>segment and<br>its tributaries.<br>LRP rating: 1  |
| Soil Erosion and<br>Sediment Control<br>Ordinance               | Watkinsville and<br>Oconee County | Specific to runoff/stream bank erosion in<br>agricultural or forest areas where waste from<br>livestock/wildlife attach to soils particles.<br>Requires installation of BMPs to prevent<br>erosion of disturbed soils.  | Development Review Fee.          | Livestock and wildlife.   | In-place,<br>ongoing | >75%<br>reduction in<br>sediment<br>loads<br>delivered<br>from new<br>development<br>and<br>redevelopme<br>nt. LRP<br>rating: 1   |
| Illicit Discharge<br>Detection and<br>Elimination               | Oconee County                     | Includes inspection of storm drains and<br>mapping the storm sewer system. Initial<br>mapping completed 2006. Upon completion of<br>the inventory and mapping, 320 outfalls were<br>identified in the urbanized area of the County.<br>Oconee County GIS updates as new<br>developments are added. Routine dry weather<br>inspections will include a minimum of 64<br>outfalls to be inspected each year on a<br>rotational basis. This number represents 20%<br>of the total so that the entire system is<br>inspected within the 5-year life of the permit.<br>Outfalls observed with dry weather flows<br>and/or suspected illicit discharge will be<br>investigated immediately to determine the<br>source of, and eliminate, those discharges. | Oconee County.                   | Human, Wildlife,<br>Pets  | In place,<br>ongoing | 25-50%<br>reduction in<br>all major<br>contaminant<br>loads from<br>spills, illicit<br>discharges,<br>and<br>wastewater<br>leaks in<br>areas where<br>applied. LRP<br>rating: 3 |

| <ul> <li>Outfall inspections will be prioritized based on<br/>the following criteria: <ul> <li>Age of development (older<br/>developments will receive priority)</li> <li>Possible problem noted during<br/>outfall inventory data collection</li> <li>Citizen complaints or other<br/>indication of illicit discharge</li> <li>Outfall had previous illicit discharge</li> <li>Proximity to industrial or commercial<br/>facilities</li> </ul> </li> </ul> |  |  |
|---|--|--|

Work Sheet for Table 5B. is designed to evaluate the capacity of existing or installed BMPs described in Table 5A. that have been implemented to reduce pollutant loadings from significant non-point sources identified in Table 4. Apply this work sheet as a local guide to evaluate BMPs in achieving water quality goals, establishing priorities for grant or loan programs, and identifying priorities for local watershed assessments and management plans.

### Work Sheet for Table 5B. EVALUATION OF CURRENT AND ACTIVE MANAGEMENT MEASURES AND ACTIVITIES

| IMPAIRMENT<br>SOURCES<br>(1)<br>(From Table 4) | IMPACT<br>RATING<br>(2)<br>(From Table 4) | APPLICABLE BMPs<br>(3)<br>(From Table 5A)  | EVALUATION SUMMARY<br>(4)  | ADDITIONAL INFORMATION /<br>ACTIONS NEEDED<br>(5)  |
|--|---|--|--|--|
| Wildlife                                       | 25  | Georgia Planning Act<br>Wetlands Protection Ordinance<br>Natural Resource Conservation Areas<br>Ordinance<br>Conservation and Natural Resources<br>Easements Ordinance<br>Soil Erosion and Sedimentation Ordinance | There is no reasonable assessment of the<br>contributions of animal wastes from wild animals<br>in wooded areas, waterfowl, or wild or domestic<br>animals in or near stream corridors in urban or<br>suburban areas. Management of wild animal<br>wastes in wooded areas and urban stream<br>corridors may not be feasible, but there are<br>several management practices that may be<br>applied to control beaver and domestic animal<br>wastes. | Conduct a study to determine whether<br>contributions of fecal coliform bacteria<br>come from exclusively non-human<br>sources (BST monitoring) or "natural<br>conditions". Should the study show that<br>contributions from non-human sources<br>occasionally exceed 200/100ml<br>(geometric mean), submit data to EPD<br>requesting a change in the fecal coliform<br>standard to levels compliant with "natural<br>conditions" for the segment. |
| Animal<br>Production                           | 1   | Fence cattle out of wetlands and stream.   | NRCS- ARS completed fencing its cattle from wetlands and streams in 2000.  |  |

| Septic Systems                | 9 Regulation of On-Site Sewage Manageme<br>Systems,<br>IAW O.C.G.A. 290-5-26 | Regulation of On-Site Sewage Management<br>Systems,<br>IAW O.C.G.A. 290-5-26 | Effective enforcement of septic installation and<br>permitting requirements will minimize future<br>failures. Implementing and enforcing the<br>wetlands protection ordinance will reduce the                               | If loads from septic systems are not<br>being reduced, consider implementing a<br>septic maintenance education program                   |
|-------------------------------|--|--|---|--|
|                               |  | amount of polluted runoff being put into streams.                            |   | 319 (h) funds can be used to implement<br>a septic repair initiative in the watershed<br>to reduce inputs from failing septic<br>systems |
| Public<br>Sewerage<br>System/ | 15   |  | Oconee County anticipates replacing part of the<br>Calls Creek sewer line during Winder 2009. No<br>information is available on the extent of repairs<br>associated with recent overflows.                                  |  |
| Urban Runoff                  | 9  | Water Quality Ordinances   | Implementing and enforcing water quality related<br>ordinances that restrict use of impervious<br>surfaces and protect stream and wetland buffers<br>will reduce the amount of polluted runoff being<br>input into streams. |  |

Table 5B. identifies new management measures that could improve or supplement current Load Reduction Potential (LRP) ratings or enhancements to existing BMPs that have been judged inadequate for achieving the load reductions. Evaluations in the Work Sheet for Table 5B. have determined that additional or enhanced management measures are necessary to more effectively reduce pollutant loads from the most likely non-point sources of impairment. The rating chart provides guidance for rating the Load Reduction Potential (LRP) of a BMP applied to a specifically identified non-point source:

| New or Enhanced BMP                       | Rating |
|---|--------|
| Load Reduction Potential Rating Chart     |        |
| (Percent Removal of Pollutant by the BMP) |        |
| None or negligible (approximately 0-5%)   | .5     |
| Low to medium (approximately 5-25%)       | 1      |
| Medium to High (approximately 25-75%)     | 3      |
| High (approximately 75% or more)          | 5      |
| Unknown                                   | UNK    |

# Table 5B. RECOMMENDED NEW MANAGEMENT MEASURES AND ACTIVITIES

| NEW BMPs<br>(1)  | RESPONSIBILITY<br>(2)      | DESCRIPTION<br>(Identify whether new or enhanced)<br>(3)   | FUNDING &<br>RESOURCES<br>(4)         | IMPAIRMENT<br>SOURCES<br>(5)                             | TARGET<br>DATE<br>(6) | NEW BMP<br>LRP<br>RATING<br>(7)  |
|--|----------------------------|--|---------------------------------------|--|-----------------------|--|
| Recommendations<br>for BMPs following<br>targeted<br>monitoring. | Local/County<br>Government | Undertake targeted e-coli monitoring to determine<br>hot spots. Determine BMPs required to address<br>hot spots. New | Varies depending on<br>BMPs selected. | Wildlife, urban runoff,<br>septic systems, sewer<br>line | 2011                  | Effectiveness<br>varies<br>depending on<br>BMPs<br>selected.<br>LRP rating:<br>varies by<br>BMP<br>selected. |
|  |                            |  |                                       |  |                       |  |

# VI. MONITORING PLAN

This section describes parameters to be monitored, status, whether monitoring is required for watershed assessments or storm water permits, and the intended purpose. Submittal of a Sampling Quality Assurance Plan (SQAP) for Georgia EPD approval is mandatory if monitoring data is to be qualified to support listing decisions.

Water quality data used to evaluate the criteria violated are less than five years old? Yes [ ] No [ X ].

### Table 6. MONITORING PLAN

| PARAMETER (S)<br>TO BE<br>MONITORED  | RESPONSIBLE ENTITY<br>(2)   | STATUS<br>(CURRENT, PROPOSED, OR<br>RECOMMENDED)   | TIME FRAME<br>(4) |          | TIME FRAME<br>(4)  |  | PURPOSE<br>(If for listing assessment, date of<br>SQAP submission) |
|--|-----------------------------|--|-------------------|----------|--|--|--|
| (1)  |                             | (3)  | START             | END      | (5)  |  |  |
| E. coli  | NEGRC, Watkinsville         | Recommend targeted watershed<br>monitoring to identify potential<br>contamination sources. | Jan 2010          | Dec 2010 | Determine priority sources through targeted sampling.  |  |  |
| Turbidity, Conductivity,<br>Surfactants, pH,<br>Ammonia, Fluoride, E.<br>Coli (if presence of<br>bacteria suspected) | Oconee County Utility Dept. | Current  | 2006              | present  | Sampling required to meet the Illicit<br>Discharge Detection and Elimination<br>requirements of the County's Phase II<br>NPDES Permit. |  |  |

# VII. PLANNED OUTREACH FOR IMPLEMENTATION

Table 7. lists and describes local outreach activities that will be conducted to support this implementation plan or to help improve water quality in the segment watershed.

# Table 7. PLANNED OUTREACH FOR IMPLEMENTATION

| RESPONSIBILTY | DESCRIPTION   | AUDIENCE                | START OR        |
|---------------|---|-------------------------|-----------------|
| (1)           | (2)   | (3)                     | COMPLETION DATE |
|               |   |                         | (4)             |
| NEGRC         | Distribute TMDL Implementation Plan to Oconee County and Watkinsville.                | Stakeholders            | September 2009  |
| NEGRC         | Make water quality education materials available on NEGRC Planning Division web page. | Stakeholders, community | Fall 2009       |
|               |   |                         |                 |

### Plan for Calls Creek HUC 10 # 0307010103 VIII. MILESTONES AND BENCHMARKS OF PROGESS FOR BEST MANAGEMENT PRACTICES (BMPs) AND OUTREACH

Table 8. shows what milestones and benchmarks have been developed to validate the progress of local best management measures identified in Tables 5A., 5B., and other sections of this plan in reducing pollutant loads from identified non-point sources of impairment.

| BMP  | MILESTONE / BENCHMARK   | RESPONSIBLE                            | METHOD / TIMELINE  | BMP                     |
|--|---|--|--|-------------------------|
| (1)  | (2)   | ORGANIZATION                           | (4)  | STATUS                  |
|  |   | (3)                                    |  | (5)                     |
|  |   |  |  | INSTALLED PROPOSED      |
|  |   |  |  | TABLE 5A. TABLE 5B.     |
| Recommendations for BMPs   | Varies depending on BMP selected.   | Local/County Government                | Varies depending on BMP selected.  | Proposed                |
| following targeted monitoring.   |   |  |  |                         |
| Georgia Planning Act   | Development that complies with the<br>Comprehensive Plan; no disturbance<br>of wetlands or their buffers. | Watkinsville and Oconee<br>County.     | Number of development<br>applications approved that comply<br>with Comprehensive Plan; number<br>and percentage of development<br>permits that do not allow<br>disturbance of wetlands or their<br>buffers. Ongoing. | Existing and Installed. |
| Regulation of On-Site Sewage<br>Management Systems,<br>IAW O.C.G.A. 290-5-26 | Further input from county Board of Health specific to permit records.                                     | Georgia DHR,<br>County Board of Health | Increase in contact with County<br>Board of Health.  | Existing and Installed. |
| Wetlands Protection Ordinance  | No disturbance of wetlands or their buffers.  | Watkinsville and Oconee County         | Number and percentage of development permits that do not allow disturbance of wetlands or their buffers. Ongoing.  | Existing and installed. |
| Fence Cattle out of Wetlands<br>and Stream                                   | Targeted sampling does not identify parcels with livestock as a hot spot.                                 |  | Monitoring data.   | Proposed.               |
| Natural Resource Conservation<br>Areas Ordinance                             | Location and number of acres and<br>number of stream miles protected in<br>watershed.                     | Oconee County                          | GIS data layer identifying location<br>and size of protected primary and<br>secondary conservation area.   | Existing and installed. |
| Conservation and Natural<br>Resources Easements<br>Ordinance                 | Location and number of acres and<br>number of stream miles protected in<br>watershed.                     | Oconee County                          | GIS data layer identifying location<br>and size of protected primary and<br>secondary conservation area.   | Existing and installed. |
| Soil Erosion and Sediment<br>Control Ordinance                               | Installation of Erosion and<br>Sedimentation Control plan<br>incorporating BMPs.                          | Watkinsville and Oconee County         | Number of enforcement actions.<br>Number of new "Qualified<br>Personnel" certified by program<br>adopted from Ga Soil and Water<br>Conservation Commission<br>Certification.   | Existing and installed  |
| Illicit Discharge Detection and<br>Elimination                               | Inspection of storm drains and mapping the storm sewer system.  | Oconee County                          | Percentage of system inspected, number of leaks identified and   | Existing and Installed  |

# Table 8. MILESTONES OF PROGRESS

repaired annually.

# IX. STAKEHOLDERS

This section describes outreach activities engaging local stakeholders in the TMDL implementation plan preparation process, including the number of attendees, meeting dates, and major findings and recommendations.

| February 26, 2009 | <ul> <li>Meeting at Watkinsville Community Center<br/>Attendees: 10</li> <li>Findings and Recommendations: <ul> <li>Concerns were raised about the age of the sampling data that led to the stream listing and the need for more current data.</li> <li>Long-time property owners indicated that many, many years ago, the city dumped sewage directly into the stream though that had<br/>stopped but they weren't sure whether there were any other pipes that fed directly into the stream.</li> <li>There is extensive erosion along the stream. One property owner takes every opportunity to protect the stream bank along his property<br/>with the installation of rip rap-like material.</li> <li>Children swim in the stream in the swimming hole in Harris Shoals Park. While this is upstream of the impaired segment, the Mayor is<br/>very concerned about the stream's water quality and the safety of the streams users. The Mayor as well as stakeholders feel there is<br/>an urgent need to conduct some stream monitoring to first identify the level of impairment and second, to try to target possible source(s)<br/>of contamination.</li> <li>Lee Carmon mentioned the e-coli monitoring that is being used on other streams in the RDC's region as a low-cost way of doing some<br/>monitoring to try to identify contamination sources. The Mayor indicated that he wanted to get moving on the monitoring and directed<br/>Ms. Carmon assist the city with implementing a program.</li> <li>Lee indicated that updates will be sent via e-mail throughout the process to keep members advised as to progress of the project. The<br/>next meeting will probably not be until May as the field work must be conducted</li> </ul> </li> </ul> |
|-------------------|---|
|                   | next meeting will probably not be until May as the field work must be conducted.  |

March 3, 2009 Calls Creek Watershed Map uploaded to <u>http://negplanning.org/documents/204</u> and stakeholders notified.

August 5, 2005: Draft of TMDL Implementation Plan posted at <u>http://negplanning.org/documents/204</u> and stakeholders notified..

#### August 25, 2009: Meeting at Watkinsville Community Center

Attendees: 2

Findings and Recommendations:

- Need to undertake targeted monitoring on main stem to narrow down locations of contamination. Based on results, initiate monitoring on tributaries and/or determine BMPs to address water quality issues.
- There are no CAFOs, crop farming, or livestock production in the watershed. Other than the USDA-ARS, livestock on any property is limited to a few animals.
- Agricultural land is pasture/forest.
- USDA-ARS fenced its cattle out of all steams and wetlands by 2000.
- Vegetative buffers along stream in Watkinsville.
- No illicit discharge/dumping in watershed.
- There are problems with beaver downstream of Christian Lake.
- Only older subdivisions are on septic.
- New sewer line will involve lowering elevation of line to eliminate aerial crossings and increase size of lines and capacity.
- Within Watkinsville, implementation of Soil Erosion ordinance is excellent.
- There have been 2 leaks of the sewer system in 2009. One was at the WWTP and one was a manhole cover near the creek and VFW Drive.

September 2, 2009 Final TMDL Implementation Plan posted at <u>http://negplanning.org/documents/204</u>, stakeholders notified, and comments solicited.

Following is a list of advisory committee or watershed group members who participated in this TMDL implementation planning process.

### Table 9. STAKEHOLDER ADVISORY GROUP MEMBERS

| NAME/ORG   | ADDRESS  | CITY         | STATE | ZIP   | PHONE        | E-MAIL                                |
|--|--|--------------|-------|-------|--------------|---------------------------------------|
| Alan Theriault,<br>Administrative Officer,<br>Oconee Co. Board of<br>Commissioners         | PO Box 145                                       | Watkinsville | GA    | 30677 | 706.769.5120 | atheriault@oconee.ga.us               |
| Amy Morrison,<br>Stormwater/Environmental<br>Coordinator, Oconee Co.<br>Public Works Dept. | PO Box 145                                       | Watkinsville | GA    | 30677 | 706.769.2937 | amorrison@oconee.ga.us                |
| Jim Luken, Mayor, City of<br>Watkinsville  | PO Box 27  | Watkinsville | GA    | 30677 | 706.769.5161 | mayor@cityofwatkinsville.com          |
| Julie Sanders, City Clerk,<br>City of Watkinsville   | PO Box 27  | Watkinsville | GA    | 30677 | 706.769.5161 | jsanders@cityofwatkinsville.com       |
| Mark Campbell, P.E.,<br>Carter Engineering<br>Consultants, Inc                             | 1551 Jennings Mill Road<br>Building 500, Suite B | Bogart, GA   | GA    | 30622 | 706.559.7430 | mark@carterengineering.net            |
| Jeff Carter, P.E., Carter<br>Engineering Consultants,<br>Inc.                              | 1551 Jennings Mill Road<br>Building 500, Suite B | Bogart, GA   | GA    | 30622 | 706.559.7430 | jeff@carterengineering.net            |
| Charles Grimes, President,<br>Oconee Co. Chamber of<br>Commerce                            | PO Box 348                                       | Watkinsville | GA    | 30677 | 706.769.7647 | cgrimes(at)occoc.org                  |
| Abbi Kobmann, Government<br>Affairs Director, Athens Area<br>Home Builders Association     | PO Box 1903                                      | Athens       | GA    | 30603 | 706.543.5760 | gac_aahba@bellsouth.net               |
| VSC Properties, LLP  | PO Box 3   | Watkinsville | GA    | 30677 |              |                                       |
| John S. Ivy  | 8240 Macon Highway                               | Athens       | GA    | 30677 |              |                                       |
| Mary Thomas  | PO Box 221                                       | Watkinsville | GA    | 30677 |              |                                       |
| Mrs. Edwin Verner  | 84 Thrasher Drive                                | Watkinsville | GA    | 30677 |              |                                       |
| Alice A Pallas   | 121 N. Main Street                               | Watkinsville | GA    | 30677 |              |                                       |
| James E. Palles  | PO Box 13  | Hull         | GA    | 30646 |              |                                       |
| Calls Creek Homeowner's<br>Association.  |  |              |       |       |              |                                       |
| Alan Franzluebbers,<br>Ecologist, Phil Campbell  | 1420 Experiment Station<br>Road                  | Watkinsville | GA    | 30677 | 706.769.5631 | alanfranz@gmail.com<br>afranz@uga.edu |

| Natural Resources<br>Conservation Center |                         |              |    |       |              |                              |
|--|-------------------------|--------------|----|-------|--------------|------------------------------|
| Harry Schomberg,                         | 1420 Experiment Station | Watkinsville | GA | 30677 | 706.769.5631 | Harry.Schomberg@ars.usda.gov |
| Ecologist, Phil Campbell                 | Road                    |              |    |       |              |                              |
| Natural Resources                        |                         |              |    |       |              |                              |
| Conservation Center                      |                         |              |    |       |              |                              |
| Luther Jones, Coordinator,               | PO Box 247              | Watkinsville | GA | 30677 | 706.769.7922 | luther.jones@ga.usda.gov     |
| Oconee River RC&D                        |                         |              |    |       |              |                              |
| Steve Hansford, Oconee                   | 22 North Main Street    | Watkinsville | GA | 30677 | 706.769.3907 | shansford@oconee.ga.us       |
| County Code Enforcement                  |                         |              |    |       |              | -                            |
| Director                                 |                         |              |    |       |              |                              |
| Henry Edwin Hibbs,                       | PO Box 107              | Watkinsville | GA | 30677 | 706.769.3946 | hhibbs@uga.edu               |
| Oconee County                            |                         |              |    |       |              |                              |
| Coordinator, UGA                         |                         |              |    |       |              |                              |
| Cooperative Extension                    |                         |              |    |       |              |                              |

# **PROJECTED IMPLEMENTATION TIMELINE**

The projected date to attain and maintain water quality standards in this watershed is 10 years from receipt of this TMDL Implementation Plan by Georgia E ᢤ

Projected EPD Basin Group Monitoring

- New TMDLs Completed
- Tier 2 TMDL Implementation Plan Received by EPD  $\Diamond$
- $\bigcirc$ Evaluation of Implementation Plan / water Quality Improvement
- Projected Implementation Timeline for Plans Prepared in 2003  $\ast$
- ★ Projected Implementation Timeline for Plans Prepared in 2008



Plan for Calls Creek

| Prepared By:   | _     | Lee A. Carm   | non, AICP  |        |      |         |       |  |
|--|-------|---------------|------------|--------|------|---------|-------|--|
| Agency:  |       | Northeast G   | eorgia Reg | gional | Comm | nission |       |  |
| Address:   | 305 F | Research Driv | /e         |        |      |         |       |  |
| City:  | Ather | าร            |            | ST:    | GA   | ZIP:    | 30605 |  |
| E-mail:  | lcarm | non@negrc.or  | rg         |        |      | -       |       |  |
| Date Submitted to EPD: September 18, 2009 Revision: 01 |       |               |            |        |      |         |       |  |

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### APPENDIX A: OUTREACH ATTENDANCE

Following is a list of the 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/ORGANIZATION  | ADDRESS  | CITY         | STATE | ZIP   | PHONE        | E-MAIL                          |
|--|--|--------------|-------|-------|--------------|---------------------------------|
| Alan Theriault,<br>Administrative Officer,<br>Oconee Co. Board of<br>Commissioners         | PO Box 145                                       | Watkinsville | GA    | 30677 | 706.769.5120 | atheriault@oconee.ga.us         |
| Amy Morrison,<br>Stormwater/Environmental<br>Coordinator, Oconee Co.<br>Public Works Dept. | PO Box 145                                       | Watkinsville | GA    | 30677 | 706.769.2937 | amorrison@oconee.ga.us          |
| Jim Luken, Mayor, City of<br>Watkinsville  | PO Box 27  | Watkinsville | GA    | 30677 | 706.769.5161 | mayor@cityofwatkinsville.com    |
| Julie Sanders, City Clerk,<br>City of Watkinsville   | PO Box 27  | Watkinsville | GA    | 30677 | 706.769.5161 | jsanders@cityofwatkinsville.com |
| Mark Campbell, P.E.,<br>Carter Engineering<br>Consultants, Inc                             | 1551 Jennings Mill Road<br>Building 500, Suite B | Bogart, GA   | GA    | 30622 | 706.559.7430 | mark@carterengineering.net      |
| Jeff Carter, P.E., Carter<br>Engineering Consultants,<br>Inc.                              | 1551 Jennings Mill Road<br>Building 500, Suite B | Bogart, GA   | GA    | 30622 | 706.559.7430 | jeff@carterengineering.net      |
| Charles Grimes,<br>President, Oconee Co.<br>Chamber of Commerce                            | PO Box 348                                       | Watkinsville | GA    | 30677 | 706.769.7647 | cgrimes(at)occoc.org            |
| Abbi Kobmann, Government<br>Affairs Director, Athens Area                                  | PO Box 1903                                      | Athens       | GA    | 30603 | 706.543.5760 | gac aahba@bellsouth.net         |

| Home Builders Association  |                         |              |    |       |              |                              |
|----------------------------|-------------------------|--------------|----|-------|--------------|------------------------------|
| VSC Properties, LLP        | PO Box 3                | Watkinsville | GA | 30677 |              |                              |
| John S. Ivy                | 8240 Macon Highway      | Athens       | GA | 30677 |              |                              |
| Mary Thomas                | PO Box 221              | Watkinsville | GA | 30677 |              |                              |
| Mrs. Edwin Verner          | 84 Thrasher Drive       | Watkinsville | GA | 30677 |              |                              |
| Alice A Pallas             | 121 N. Main Street      | Watkinsville | GA | 30677 |              |                              |
| James E. Palles            | PO Box 13               | Hull         | GA | 30646 |              |                              |
| Calls Creek Homeowner's    |                         |              |    |       |              |                              |
| Association.               |                         |              |    |       |              |                              |
| Alan Franzluebbers,        | 1420 Experiment Station | Watkinsville | GA | 30677 | 706.769.5631 | alanfranz@gmail.com          |
| Ecologist, Phil Campbell   | Road                    |              |    |       |              | <u>afranz@uga.edu</u>        |
| Natural Resources          |                         |              |    |       |              |                              |
| Conservation Center        |                         |              |    |       |              |                              |
| Harry Schomberg,           | 1420 Experiment Station | Watkinsville | GA | 30677 | 706.769.5631 | Harry.Schomberg@ars.usda.gov |
| Ecologist, Phil Campbell   | Road                    |              |    |       |              |                              |
| Natural Resources          |                         |              |    |       |              |                              |
| Conservation Center        |                         |              |    |       |              |                              |
| Luther Jones, Coordinator, | PO Box 247              | Watkinsville | GA | 30677 | 706.769.7922 | luther.jones@ga.usda.gov     |
| Oconee River RC&D          |                         |              |    |       |              |                              |
| Steve Hansford, Oconee     | 22 North Main Street    | Watkinsville | GA | 30677 | 706.769.3907 | shansford@oconee.ga.us       |
| County Code Enforcement    |                         |              |    |       |              |                              |
| Director                   |                         |              |    |       |              |                              |
| Henry Edwin Hibbs,         | PO Box 107              | Watkinsville | GA | 30677 | 706.769.3946 | hhibbs@uga.edu               |
| Oconee County              |                         |              |    |       |              |                              |
| Coordinator, UGA           |                         |              |    |       |              |                              |
| Cooperative Extension      |                         |              |    |       |              |                              |

### APPENDIX B.

# STATUS REPORTS / UPDATES TO THIS PLAN

If there are any revisions to an existing plan, this section will describe the date, section or table updated, and a summary of what was changed and why. A Status Report / Updates on Existing Local TMDL Implementation Plans and Watershed Remediation will be attached as a separate document.

No revisions.

# APPENDIX C.

# VISUAL FIELD SURVEYS, NOTES, PHOTOGRAPHS, AND MAPS.

No visual field survey required.

APPENDIX D.

INSTRUCTIONS