



April 30, 2009

Angela Parker
Public Works Director
Fulton County
141 Pryor Street, SW
Suite 6001
Atlanta, GA 30303

Re: District Watershed Monitoring

Dear Ms. Parker:

As you are aware, the Metropolitan North Georgia Water Planning District (District) has recently revised the monitoring requirements in the District's Watershed Management Plan (WMP). The WMP encourages cooperation between the counties and cities in the District to determine the location of the required stations and the responsibility for operating the stations. You are also aware that the Fulton cities have a Stormwater Coordinating Committee and have discussed these monitoring requirements. We appreciate Fulton County's participation in those meetings.

This letter is to serve as a memorandum of understanding (MOU) between the cities of Alpharetta, Johns Creek, Milton, Roswell, Sandy Springs, and Fulton County regarding monitoring station locations and responsibilities.

Long Term Ambient Trend Monitoring

The latest draft of the WMP monitoring requirements was issued in April 2009 (copy attached). The Local Management Measure for Long Term Ambient Trend Monitoring (5.F.1) requires 6 stations in North Fulton. The City of Roswell has two stations; one on Hog Waller and one on Big Creek which are intended for their City monitoring use. The WMP states that long-term ambient monitoring within each county can follow the Georgia EPD monitoring requirements for an established and approved Watershed Protection Plan (WPP). Fulton County has an approved WPP with seven stations in north Fulton. A Water Quality Sampling Map showing the station locations and a list of parameters sampled at each station is attached.

As shown in Table 1, Fulton County has 7 water quality stations located in North Fulton (one more than required). These stations will fulfill the District's long term ambient trend monitoring requirements and Fulton County will continue to operate these stations.

Table 1: Fulton County Long-Term Ambient Trend Stations

City	Designation	Station Name
Alpharetta	BC-1	Long Indian Creek at Waters Road
Johns Creek	JO-1	Downstream point of Johns Creek
	CC-2	Downstream of discharge at Cauley Creek
Milton	LT-1	Little River at Arnold Mill Road
Roswell		No Fulton Co trend station in city
Sandy Springs	CK-1	Ball Mill Creek near Chattahoochee River
	MA-1	Marsh Creek at Brandon Mill Road
	LI-2	Long Island Creek at Northside Drive

Habitat and Biological Monitoring

The Local Management Measure for Habitat and Biological Monitoring (5.F.2) requires sampling at the same number of stations as required for the long-term ambient trend monitoring; six stations in North Fulton. The WMP again states that long-term ambient monitoring within each county can follow the Georgia EPD monitoring requirements for an established and approved Watershed Protection Plan (WPP). A summary of the stations where Fulton County performs biological monitoring located in North Fulton County broken into City boundaries is provided in Table 2.

Fulton County has two biological stations located in North Fulton. To meet the District's habitat and biological monitoring requirements for the area, four more stations are required. Fulton County will continue to operate the two biological stations in Table 2 and the cities agree to monitor habitat and biology at the four stations in Table 3.

Table 2: Fulton County Habitat and Biological Stations

City	Designation	Station Name
Johns Creek	JO 1	Downstream point of Johns Creek
Milton	LT 1	Little River at Arnold Mill Road

Table 3: City Habitat and Biological Stations

City	City Monitoring at	City Station	Station Name
Alpharetta		New	Foe Killer Creek, location to be determined
Johns Creek			None Required
Milton			None Required
Roswell			None Required
Sandy Springs	CK-1		Ball Mill Creek near Chattahoochee River
	MA-1		Marsh Creek at Brandon Mill Road
	LI-2		Long Island Creek at Northside Drive

Total Maximum Daily Load

The Local Management Measure for Total Maximum Daily Load (TMDL) Management (5.H.2) requires the development of a monitoring plan for 303(d) listed waters as required under existing permits and current TMDL implementation plans. There are several stream segments with TMDLs in north Fulton. The stream segments that have Fecal TMDLs and the monitoring stations that monitor for Fecal are identified in Table 4.

As shown in Table 4, Fulton County has four stations that monitor for Fecal on 4 different stream segments located in North Fulton. Fulton County will continue to operate the stations in Table 4 that monitor for Fecal TMDLs and the cities will provide monitoring of Fecal on the remaining impaired stream segments as identified in Table 5.

Table 4: Fulton Fecal TMDL Stream segments

City	Fulton - Station Designation	City Station	Stream Segment
Johns Creek	JO-1		Johns Creek
Sandy Springs	CK-1		Ball Mill Creek
	MA-1		Marsh Creek
	LI-2		Long Island Creek

Table 5: City Fecal TMDL Stream segments

City	Fulton - Station Designation	City Station	Stream Segment
Alpharetta		Joint Alpharetta – Roswell	Big Creek – Foe Killer Creek
Roswell		Joint Alpharetta – Roswell	Big Creek – Foe Killer Creek
		RBC-1	Big Creek Main Stem
		HWC-1	Hog Waller Creek
		RC-1	Lower Little River - Rocky Creek
		WC-1	Willeo Creek

There are two stream segments with biota TMDLs located in North Fulton: Long Island and Nancy Creek. The City of Sandy Springs will conduct habitat and biota sampling on Long Island Creek as identified in Table 3.

Data

The cities and Fulton County also agree that the monitoring data is to be shared between the parties and that a written request will be sufficient. An open records request is not necessary to obtain copies of the data.

Requirement Modifications

In the event that sampling requirements are necessary either by regulatory action or operational requirements, Fulton County may change the parameters sampled at the aforementioned stations. Fulton County will provide thirty (30) days notice to the other parties of this MOU prior to implementation of such changes.

Angela Parker
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Disclaimer

Any language in this document is not to be construed to obligate Fulton County to perform any sampling for any city above and beyond the requirements as set forth herein.

Sincerely,

A handwritten signature in blue ink, appearing to read "David Chastant". The signature is stylized and cursive.

David Chastant, P.E.
Stormwater Services Division Manager


cc: Lisa Perrett, Environmental Specialist, Georgia Environmental Protection Division
Emily Wingo, Environmental Specialist, Georgia Environmental Protection Division

Enclosures: City Representative Signature Page
Fulton Water Quality Sampling Map
MNGWPD WMP monitoring requirements

Angela Parker
April 30, 2009
Enclosure

The parties signed below agree that this letter accurately states the District monitoring responsibilities in Fulton County excluding the City of Atlanta.

City Of Alpharetta


Pete Sewczwicz, P.E.
Engineering / Public Works Director

City of Chattahoochee
Hills


*PKS
7/1/09*

Bob Simpson
City Manager

City of Johns Creek


Ken Hildebrandt, P.E.
Public Works Director


City of Milton


Carter Lucas, P.E.
Acting Public Works Director

City of Roswell


Stuart Moring, P.E.
Public Works Director

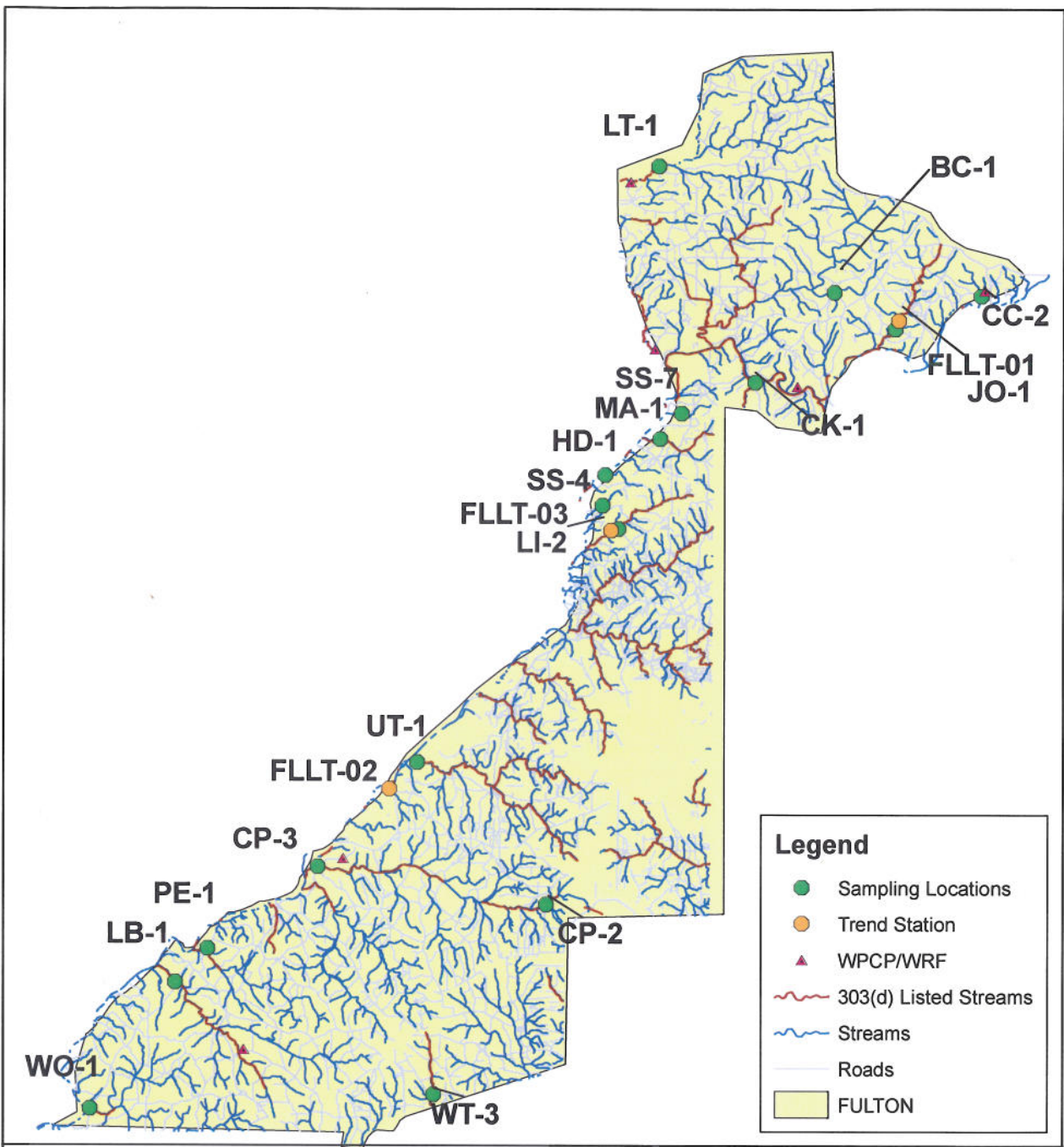
City of Sandy Springs


Angela Parham, P.E.
Public Works Director

Fulton County


Angela Parker
Public Works Director

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Legend

- Sampling Locations
- Trend Station
- ▲ WPCP/WRF
- ~ 303(d) Listed Streams
- ~ Streams
- Roads
- FULTON

Id	Station Name	Nickname	Permenant	Bacteria	Chemical	Heptachlor Epoxide	Biological
1	Downstream point of Johns Creek	FLLT-01/JO-1	Permenant	Bacteria	Chemical		Biological
X	Unnamed Tributary at Boat Rock Road	FLLT-02	Permenant				
2	Long Island Creek at Northside Drive	FLLT-3/LI-2	Permenant	Bacteria	Chemical	Heptachlor Epoxide	
3	Downstream end of White Oak Creek	WO-1		Bacteria	Chemical		Biological
4	Downstream of discharge at Camp Creek	CP-3		Bacteria	Chemical		Biological
5	Downstream of discharge at Cauley Creek	CC-2		Bacteria	Chemical		
6	Downstream of dischage at Bear Creek	LB-1		Bacteria	Chemical		Biological
7	Upstream point of Camp Creek	CP-2		Bacteria	Chemical		
8	Marsh Creek at Brandon Mill Road	MA-1		Bacteria	Chemical	Heptachlor Epoxide	
9	Ball Mill Creek near Chattahoochee River	CK-1		Bacteria	Chemical		
10	Downstream end of Uttoy Creek	UT-1		Bacteria	Chemical		
11	Little River at Arnold Mill Road	LT-1		Bacteria	Chemical		Biological
12	Downstream at Pea Creek	PE-1		Bacteria	Chemical		Biological
13	Whitewater Creek near Fayette County Line	WT-3		Bacteria	Chemical		Biological
14	Long Indian Creek at Waters Road	BC-1		Bacteria	Chemical		
15	Game Creek at Northside Drive	SS-4				Heptachlor Epoxide	
16	Heards Creek at Ferry Landing Drive	HD-1				Heptachlor Epoxide	
17	Powers Branch at Monterey Parkway	SS-7				Heptachlor Epoxide	



Water Quality Sampling Map

August 2008



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PARAMETERS		METHOD/LOG/OLY		MONITORING		
	Parameter	Analytical Method	Detection Limit	Stream	Trend	Discharge
Bacterial	Fecal Coliform	SM 9222D	20 colonies/100ml	x		x
	<i>Escherichia coli (E. Coli)</i>	SM 9223		x		
Chemical	Total Dissolved Solids (TDS)	EPA 160.1	20	x	x	
	Total Suspended Solids (TSS)	EPA 160.2	5	x	x	
	Total Phosphorus	EPA 365.2	0.05	x	x	
	Dissolved Phosphorus	EPA 365.4	0.01	x		
	Total Kjeldahl Nitrogen (TKN)	EPA 351.3		x	x	
	Ammonia	EPA 350.2	0.2	x	x	
	Total Oxidized Nitrogen (nitrites/nitrates)	EPA 353.2	0.25	x	x	
	Biological Oxygen Demand (BOD5)	SM 5210B	2	x	x	
	Chemical Oxygen Demand (COD)	EPA 410.4	10	x	x	
	Total Cadmium	EPA 200.7	10	x	x	
	Total Copper	EPA 200.7	0.025	x	x	x
	Total Lead	EPA 200.7	0.01	x	x	
	Total Zinc	EPA 200.7	0.05	x	x	
	Dissolved Cadmium	EPA 200.7	0.7	x	x	
	Dissolved Copper	EPA 200.7	2	x	x	
	Dissolved Lead	EPA 200.7	1	x	x	
	Dissolved Zinc	EPA 200.7	10	x	x	
	Hardness	SM 314 A	1	x	x	
	Total Chlorine	EPA 330.5	1			x
	Total Phenol	EPA 420.1	0.05			x
	Heptachlor Epoxide	EPA 525.1	---	x		
	Surfactants	EPA 425.1	0.01			x
	In-Situ	Air Temperature	ambient	---	x	x
Water Temperature		YSI Model 556	---	x	x	x
pH		YSI Model 556	---	x	x	x
Instantaneous Flow		JDC Flowwatch	---	x	x	
Dissolved Oxygen (DO)		YSI Model 556	---	x		
Conductivity		YSI Model 556	---	x		x
Turbidity		Darton TN 100	---	x		x
Color		qualitative	---			x
Oil Sheen		qualitative	---			x
Odor		qualitative	---			x

~~NOTE: The Metro Water District monitoring provisions for local jurisdictions will be reevaluated in light of changes to Georgia EPD's MS4 monitoring requirements clarified in December 2008.~~

5.F.1 LONG-TERM AMBIENT TREND MONITORING

ACTION ITEM

Perform long-term ambient trend monitoring to track local watershed conditions and report the data annually to the Metro Water District.~~gain a greater understanding of watershed health.~~

OBJECTIVE

The objective of the water quality monitoring program is to provide comprehensive and consistent watershed-based water quality monitoring across the Metro Water District.~~The purpose of the monitoring is, and to consolidate data from the many current local long-term monitoring efforts~~ to better assess water quality and watershed conditions, as well as to evaluate the effectiveness of watershed protection and management activities.

DESCRIPTION OF MEASURE

~~The intent of the Metro Water District Water Quality Monitoring Plan is to consolidate the many current local monitoring requirements into a larger, comprehensive program that provides consistency in sampling methodologies and effort across the Metro Water District.~~

Monitoring for long-term ambient trends in water quality provides a means of demonstrating progress toward water quality goals as watershed management efforts are implemented. The objective of the long-term trend monitoring is to ~~establish the extent of the progress toward the goal of maintaining or improving~~ identify long-term trends in water quality and watershed conditions within ~~and downstream of~~ the Metro Water District.

Local jurisdictions are to perform long-term ambient trend monitoring ~~which includes wet weather, dry weather, and bacteria monitoring~~ at permanent stream stations. Specific guidance on approved procedures and sampling methodologies for performing long-term ambient stream monitoring ~~can be found in the~~ will either be outlined in the local Watershed Protection Plan approved by Georgia EPD or in the most recent Metro Water District's *Standards and Methodologies for Surface Water Monitoring* ~~(Second Edition 2009)~~.

Local Implementation Responsibility

- Stormwater Management Staff
- Public Works
- Development/Site Planning Review
- Planning and Zoning
- City/ County Attorney
- Inspection Staff/Code Enforcement
- Local Water Provider
- Local Wastewater Provider
- County Board of Health
- Other: _____

Related Regulations

- NPDES MS4 (Phase I & II)
- NPDES Wastewater/ Georgia WPP
- TMDL
- NPDES Construction/ GESA
- Georgia Planning Act
- Safe Drinking Water Act
- Other: Georgia Erosion and Sedimentation Control Act

SPECIFIC SUB-TASKS

Sub-Task	Description
Select Evaluate long-term monitoring stations	Determine location of Compare the number of existing long-term trend monitoring stations within the county <u>to the required number in Table 5-5.</u> <u>Determine the location of additional stations as needed.</u>
Collect and analyze collected data	Collect and analyze data according to <u>the local Watershed Protection Plan approved by Georgia EPD or the</u> established Metro Water District protocols.
<u>Submit data to Metro Water District</u>	<u>Submit water quality data annually to the Metro Water District using the Georgia EPD Watershed Assessment Data Reporting template.</u>

IMPLEMENTATION GUIDANCE

Long-term monitoring involves ~~both wet weather and dry weather~~ water quality sampling at permanent stream sampling stations. The long-term ambient trend monitoring ~~requirements are consistent with~~ within each county can follow the Georgia EPD monitoring requirements for an established and approved Watershed Protection Plan(s). Those without an approved Watershed Protection Plan or Watershed Monitoring Plan are to develop a monitoring plan which includes the following ~~and consist of~~ three components:

- Wet Weather Monitoring:** A minimum of ~~one~~ three wet weather samples will be required during both the summer and winter seasons (May-October and November-April) – for a total of six wet weather samples annually.
- Dry Weather (Baseflow) Monitoring:** A minimum of ~~three~~ one dry weather (baseflow) samples will be required during both the summer and winter seasons (May-October and November-April) – for a total of two samples annually.
- Bacteria monitoring:** A minimum of two geometric means of bacteria grab sampling for fecal coliform bacteria annually for the period of May to October.

~~Note that bacteria monitoring may be conducted at a different time than the wet/dry weather monitoring to ensure sample hold times are observed. The~~ Monitoring parameters, collection methods, sample handling, and, sample documentation procedures, and laboratory analysis methods may follow either the approved local Watershed Protection Plan or the Metro Water District’s ~~are outlined in the~~ Standards and Methodologies document. ~~Both wet weather and dry weather baseflow samples will be analyzed for the parameters listed below using appropriate field methods and/or EPD approved laboratory analysis methods.~~

- ~~• Temperature (water and air)~~
- ~~• pH~~
- ~~• Dissolved oxygen~~
- ~~• Specific conductance~~
- ~~• Turbidity~~
- ~~• BOD5~~
- ~~• COD~~
- ~~• TSS~~
- ~~• Phosphorus (total and ortho)~~
- ~~• Nitrogen (TKN, Ammonia, Nitrate + Nitrite)~~

- ~~Metals (total and dissolved for Cadmium, Copper, Lead, and Zinc)~~
- ~~Hardness~~
- ~~Fecal coliform bacteria~~
- ~~Other sampling as required (E-coli, any 303(d)-listed parameters, etc.)~~

Number of Long-term Monitoring Stations: The number of required long-term trend stream monitoring stations is based on county population. One station is required per 50,000 persons (rounded to the nearest 50,000), as shown in Table 5-5.

Note that ~~Long-term trend monitoring is intended to be county-based~~ under this Plan. Therefore, local jurisdictions in each Metro Water District county will need to coordinate in terms of local responsibility, financial obligations, and appropriate siting of monitoring stations for their county. In the event that communities within a county cannot agree on a monitoring program, each community will be responsible for the number of stations, rounded up to the nearest whole number, based on their community population. As each local jurisdiction and the unincorporated areas will round the population based sampling stations up to the nearest whole number, an increased number of stations will be ~~sampled~~ required under this alternative.

TABLE 5-5
Long-term Trend Monitoring Stations based on Population

County	Population (2006)*	Number of Stations
Bartow	91,300	2
Cherokee	183,700	4
Clayton	266,400	5
Cobb	648,800	13
Coweta	107,300	2
DeKalb	704,900	14
Douglas	119,600	2
Fayette	102,600	2
Forsyth	151,000	3
Fulton (North)	310,041	6
Fulton (South)	152,706	3
City of Atlanta	450,560	9
Gwinnett	707,100	14
Hall	173,300	3
Henry	171,100	3
Paulding	121,500	2
Rockdale	80,300	2

* Population estimates from U.S. Census Bureau

Selecting Long-term Trend Monitoring Stations: [Communities can use existing Watershed Protection Plan monitoring locations to meet the long-term trend monitoring station requirements in Table 5-5.](#) If additional ~~L~~ long-term trend monitoring stations are required, they may be selected to meet multiple requirements including ~~Watershed Protection Plans,~~ TMDLs, or to track the impacts of specific land use categories on water quality.

When ~~selecting~~ [developing a county](#) long-term trend monitoring site [networks](#), local jurisdictions ~~may~~ [should](#) consider the following steps:

Step 1: Identify Watershed Protection Plan monitoring ~~requirements~~ [locations](#) (if ~~they exist~~ [applicable](#))

Step 2: Identify any 303(d) listed waters to see if trend monitoring stations are applicable on 303(d) listed segments

Step 3: Look at the local land use map to identify areas of changing land use that might be appropriate for long-term trend monitoring

Step 4: Add additional sites as needed to provide good coverage of local conditions

In selecting additional monitoring sites, local jurisdictions may consult the guidelines in the Metro Water District’s Standards and Methodologies document.

Long-term Trend Monitoring Data Evaluation: Local jurisdictions are to track water quality data and annually look at water quality trends within the community. Several methodologies for the assessment of water quality monitoring data are outlined in the Metro Water District’s *Standards and Methodologies for Surface Water Quality Monitoring* document. [Local jurisdictions will also submit water quality data annually to the Metro Water District using the Georgia EPD Watershed Assessment Data Reporting template available on the Georgia EPD website.](#)

At a minimum, local jurisdictions must compare water quality data with State standards outlined in Table 5-6. Fecal coliform bacteria samples that are elevated may indicate a sanitary sewer overflow (SSO) or failed septic system. Documentation of these elevated occurrences of fecal coliform bacteria may be shared with the local wastewater provider and County Board of Health to identify potential leaks and failing septic systems, respectively (see Measure 5.B.3).

TABLE 5-6
Georgia EPD Water Quality Standards

Parameter	Designated Use	
	Drinking Water and Fishing	Recreation
Fecal Coliform Bacteria (geometric mean)	200 col./100 mL (May - Oct) ¹	200 col./100 mL ¹
	1,000 col./100 mL (Nov - Apr) ²	

Section 5: LOCAL MANAGEMENT MEASURES

WATERSHED CONDITIONS ASSESSMENT

Parameter	Designated Use	
	Drinking Water and Fishing	Recreation
Dissolved Oxygen (daily average)	6.0 mg/L	6.0 mg/L
pH	6.0 - 8.5	6.0 - 8.5
Temperature	≤ 90° ⁴	≤ 90° ⁴
Notes: 1. Not to exceed value of 300 col/100mL for Lakes and Reservoirs and 500 col/100 mL for streams 2. Not to exceed value of 4,000 col/100mL 3. No sample may be less than 5.0 mg/L 4. Temperature increases may not exceed 5° for streams, 0°F for primary trout streams, 2°F for secondary trout streams		

NOTE: The Metro Water District monitoring provisions for local jurisdictions will be reevaluated in light of changes to Georgia EPD's MS4 monitoring requirements clarified in December 2008.

5.F.2 HABITAT AND BIOLOGICAL MONITORING

ACTION ITEM

Perform habitat and biological monitoring to track local watershed conditions.

OBJECTIVE

The objective of habitat and biological monitoring is to ~~provide comprehensive and consistent watershed-based~~ identify long-term trends in water quality ~~monitoring and watershed conditions~~ across the Metro Water District. ~~The purpose of the monitoring is to assess water quality and watershed conditions.~~

DESCRIPTION OF MEASURE

Biological monitoring is important for identifying trends in stream and watershed integrity. Biological monitoring includes both habitat assessments, and benthic macroinvertebrates, ~~and fish sampling elements~~ sampling. Specific guidance on approved procedures and sampling methodologies for performing biological monitoring will either be outlined in the local Watershed Protection Plan approved by Georgia EPD or in the most recent edition of ~~can be found in~~ the Metro Water District's *Standards and Methodologies for Surface Water Monitoring* ~~(Second Edition 2009)~~ for communities without a local Watershed Protection Plan or Watershed Monitoring Plan.

Local Implementation Responsibility

- Stormwater Management Staff
- Public Works
- Development/Site Planning Review
- Planning and Zoning
- City/ County Attorney
- Inspection Staff/Code Enforcement
- Local Water Provider
- Local Wastewater Provider
- County Board of Health
- Other: _____

Related Regulations

- NPDES MS4 (Phase I & II)
- NPDES Wastewater/ Georgia WPP
- TMDL
- NPDES Construction/ GESA
- Georgia Planning Act
- Safe Drinking Water Act
- Other: _____

SPECIFIC SUB-TASKS

Sub-Task	Description
Select biological and habitat monitoring stations	Determine location of biological and habitat monitoring stations.
Collect and review data	Collect and analyze <u>habitat and benthic macroinvertebrate</u> data according to <u>the local Watershed Protection Plan approved by Georgia EPD or the established</u> Metro Water District protocols.

IMPLEMENTATION GUIDANCE

~~Local jurisdictions are to perform biological monitoring on a rotating basis such that all 12-digit Hydrologic Unit Codes (HUCs) are monitored once every 5 years using criteria established by the Metro Water District. Each station will be evaluated for physical habitat, benthic macroinvertebrates, and fish communities to detect trends in biotic integrity. In addition to habitat and biota monitoring, communities may be required to perform pebble counts and in-situ physical measurements to comply with Watershed Protection Plan requirements. Habitat and biological monitoring will be performed by qualified professionals. Communities with an approved Watershed Protection Plan may continue the habitat and biological monitoring outlined in that plan in lieu of these requirements. The three components of habitat and biological monitoring are outlined below.~~ Local jurisdictions with an approved Watershed Protection Plan (or an approved Watershed Monitoring Plan if the Watershed Protection Plan is not yet approved) will follow the biennial habitat and biological monitoring within the approved Watershed Protection Plan. Local jurisdictions that do not have an approved Watershed Protection Plan will perform biennial habitat and biological monitoring at the same number of stations as required for long-term ambient trend monitoring (see Table 5-5) and include the following components:

1. **Habitat Assessments:** Habitat assessments will be conducted following the latest Georgia EPD ~~2002~~-Standard Operating Procedure (SOP), which include an evaluation of the immediate watershed area, substrates (stream bed material), stream width, and general water quality conditions for riffle/run and glide/pool prevalent systems.
2. **Benthic Macroinvertebrate Sampling:** Benthic macroinvertebrate sampling will follow the latest Georgia EPD ~~2002~~-Standard Operating Procedure (SOP). The major habitat types (undercut banks, rocks, vegetation, sand, riffles, runs, and pools) at each site as well as the proportion of each habitat type sampled, will be recorded for each station. Samples will be preserved and sent to a laboratory for enumeration and identification.

Benthic data will be analyzed based on assessment metrics, metric evaluation criteria, and scores for the Georgia Piedmont or Ridge and Valley ecoregion. The metrics include parameters such as:

- Taxa richness
- Ephemeroptera, Plecoptera, Trichoptera (EPT) Index
- Indicator Assemblage Index (IAI)
- Percent contribution of dominant taxon
- North Carolina biotic index
- Percent shredders
- Total habitat score

3. ~~**Fish Sampling:** Fish sampling will be in accordance with the Georgia Wildlife Resource Division SOP for fish communities in the Piedmont ecoregion. Representative habitats, including riffles, runs, and pools, will be sampled in each study reach. Georgia DNR recommends sampling reaches (length of stream) equal to 35 times the mean width to decrease variability in scores. The principal sampling method will be electrofishing, supplemented by seining (both kick nets and downstream hauls).~~

~~Fish will be enumerated in the field to the greatest extent practical, with some voucher specimens being preserved in 10% formalin for laboratory confirmation of species identification. Other specimens will be released alive at the collection site. A data sheet that includes size, weight, and external abnormalities of the species collected will be completed at each station along with detailed~~

~~notes on habitat and surrounding watershed conditions. Fish evaluation metrics are generally region-specific.~~