

Metropolitan North Georgia Water Planning District
Watershed Management Plan Update
List of Changes to Public Comment Draft Plan (December 2008)
Board Approved – April 2, 2009

Section/Page	Paragraph/Line	Recommended Change
ES-1	Paragraph 1	Change O.C.G.A. §12-5-571 to read O.C.G.A. §12-5-572
ES-1	Paragraph 2	Change text as shown “The Metro Water District includes 15 counties (Bartow, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Fulton, Forsyth, Gwinnett, Hall, Henry, Paulding, and Rockdale Counties) as well as 93 <u>91</u> municipalities partially or fully within these counties.” Change text as shown “The Metro Water District also has six <u>seven</u> authorities which provide water, sewer and/or stormwater services.”
ES-2	Bulleted list	Add bullets “Managing and maintaining public stormwater infrastructure;” and “Need for a regional approach to stormwater and watershed management.”
ES-4	Bulleted list	Change text as shown “ Studying the impact of fertilizer nutrient content ” to “ <u>Consider guidance for local government programs to manage fertilizer related to lawn use in watersheds where phosphorus loading is an issue.</u> ”
ES-6	Paragraph 2	Change text as shown “ The local management measures and provide the framework for evaluating implementation of this Plan. ” to “ <u>The Metro Water District conducts an annual survey that reports on the progress of implementation of the local management measures within this Plan. The Metro Water District summarizes the survey results in their annual report.</u> ”
1-1	Paragraph 2	Change O.C.G.A. §12-5-571 to read O.C.G.A. §12-5-572
1-1	Paragraph 3	Change text as shown “The Metro Water District includes 15 counties (Bartow, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Fulton, Forsyth, Gwinnett, Hall, Henry, Paulding, and Rockdale Counties) as well as 93 <u>91</u> municipalities partially or fully within these counties (Figure 1-1).” Change text as shown “The Metro Water District also has six <u>seven</u> authorities which provide water, sewer and/or stormwater services.”
1-2	Figure 1-1	Remove Corinth as a city; remove Loganville from the Metro Water District
1-3	Table 1-1	Alphabetize the list of cities; Remove Corinth as a city; remove Loganville from the Metro Water District Add Coweta County Water and Sewerage Authority to the list of Authorities
1-6	Figure 1-4	Show that all of Coweta County and Bartow County (unincorporated and incorporated) are in the process of having their future-conditions floodplains mapped.
2-1	Paragraph 1	Replace last sentence with “In addition, rapid population growth has resulted in increasing demands on the limited available water supplies while increasing the volume of treated wastewater being discharged to the region’s rivers, lakes and streams. Simultaneously, development associated with this rapid growth has impacted watersheds by changing the peak rates, volume, velocity, timing and quality of stormwater runoff affecting man-made infrastructure as well as the natural environment.”

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2-1	Bulleted list	Add bullets “Managing and maintaining public stormwater infrastructure;” and “Need for a regional approach to stormwater and watershed management.”
2-7	Figure 2-5	Add Sewell Mill and Cedar Creek drinking water supply watersheds
2-8	Paragraph 7	<p>Replace paragraph with: “Since 2003, the total number of stream miles is greater than that provided in the original Watershed Management Plan. This increase in listed waters does not necessarily reflect worsening water quality or show that the Watershed Management Plan has not been effective for a number of reasons:</p> <p>(1) The increase in number of impaired stream miles is due in part to an almost a 20% increase in miles of stream monitored; (2) Water bodies remain on the 303(d)/305(b) list until an active delisting procedure is undertaken; (3) Over 50% of the listed streams are for fecal coliform which is a parameter which may not meet state water quality standards due to natural background sources. This standard also does not accurately reflect the potential for human illness based on contact with surface water.</p> <p>Evidence provided by a recent USGS study in Gwinnett County shows that despite explosive population growth and land development within that county, water quality conditions have not declined in part though the implementation of an active watershed and stormwater management program.”</p> <p>Add footnote: “Watershed Effects on Streamflow Quantity and Quality in Six Watersheds of Gwinnett County, Georgia. USGS report 2007-5132. 2007.”</p>
2-9	Table 2-2	Change table header from “Total Miles of Listed Stream” to “Total Miles of Stream”
2-11	Paragraph 2	Change text as shown “At present, the Etowah subbasin of the Coosa Basin is a key federally designed critical habitat within the Metro Water District due to the is home to several federally-protected fish species. In addition, a portion of the Tallapoosa basin in Paulding County is proposed to be designated critical habitat for federally-protected mussels...The mainstem Oostanuala and Coosawatee Rivers <u>are</u> also are proposed as critical habitat for mussels, but the portions of these basins are not located within the Metro Water District.”
3-5	Paragraph 5, sentence 2	Change text as shown “Permittees must submit an NOI to Georgia EPD as well as the Local Issuing Authority (LIA), if applicable, which include an erosion, and sedimentation <u>and pollution</u> control (ES&PC) plan.”
3-5	Paragraph 5, sentence 3	Change text as shown “The ES&PC plan is reviewed and approved by the LIA, or Georgia EPD if the jurisdiction is not an LIA.”
3-10	Paragraph 5, sentence 2	Change text as shown “The Act requires permits for land-disturbing activities on sites one acre or larger as well as an erosion, and sedimentation <u>and pollution</u> control (ES&PC) plan for preventing and/or minimizing erosion and sedimentation from the activity.”
3-10	Paragraph 5, sentence 4	Change text as shown “Development is not allowed within 25-feet of most streams in Georgia and for trout streams, the buffer is 50-feet for trout streams. ”
3-10	Paragraph 5, sentence 6	Change text as shown “Plan review checklists updated in 2007 8 , are available by development type on the Georgia Soil and Water Conservation Commission website.”
4-7	Figure 4-3	Add Sewell Mill and Cedar Creek drinking water supply watersheds

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4-8	Paragraph 2	Delete sentence “ Temperature exceedances in the Chattahoochee River related to Georgia Power discharges that are in the process of being addressed. ”
4-10	Table 4-4	Add a management issues bullet “Managing and maintaining public stormwater infrastructure.”
4-11	Table 4-5	Add a management issues bullet “Managing and maintaining public stormwater infrastructure.”
4-12	Table 4-6	Add a management issues bullet “Managing and maintaining public stormwater infrastructure.”
4-13	Paragraph 3	Change text as shown “Georgia Power is installing <u>has installed</u> cooling towers on at all of its power production facilities <u>plants</u> in the <u>Metro Water District</u> to reduce the temperature of water <u>discharges to improve receiving stream</u> returned to lakes and rivers to improve fish habitat and water quality health. Additionally, through the “Renew our Rivers” effort, Georgia Power has removed over <u>14.5</u> 6 -million tons of trash from the Chattahoochee Basin.”
4-20	Table 4-10	Add a management issues bullet “Managing and maintaining public stormwater infrastructure.”
4-28	Table 4-14	Add a management issues bullet “Managing and maintaining public stormwater infrastructure.”
4-35	Table 4-18	Add a management issues bullet “Managing and maintaining public stormwater infrastructure.”
4-41	Table 4-22	Add a management issues bullet “Managing and maintaining public stormwater infrastructure.”
4-45	Table 4-26	Add a management issues bullet “Managing and maintaining public stormwater infrastructure.”
5-23	Paragraph 7	Change text as show “(1) the current 100-year floodplains are current <u>accurate</u> and effective,”
Section 5 following page 5-26	New Section 5.B.4	SEE ATTACHED NEW MEASURE 5.B.4
5-32	Sub-Task 1	Change text as shown “Review erosion, and sedimentation and pollution control (ES&PC) plans in compliance with Georgia ESCA.”
5-59 to 5-62	Section 5.F.1	SEE ATTACHED REVISIONS TO MEASURE 5.F.1
5-63 to 5-64	Section 5.F.2	SEE ATTACHED REVISIONS TO MEASURE 5.F.2
5-73	Table 5-10	Change title from “TMDL Pollutants of Concern and Possible Actions” to “Water Quality Parameters of Concern and Potential Actions” Change header from “Pollutants of Concern” to “Parameter of Concern” Change header from “Possible Actions” to “Potential Actions” Change text as shown “Atmospheric deposition (power plants)”
5-75	Paragraph 3	Replace paragraph with “Several protected aquatic species have been identified within the Metro Water District. Section 3 includes a summary of federal and state threatened and endangered species thought to be present within the Metro Water District’s watersheds. The federal

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		Endangered Species Act (ESA) prohibits any action that results in a “taking” (harassing, harming, or killing) of a listed species or adversely affects its habitat. An otherwise-lawful activity could result in an “incidental take” of a listed wildlife species, thereby requiring an incidental take permit from the U.S. Fish and Wildlife Service (FWS). Local jurisdictions should determine whether protected species are thought to reside in their watersheds and consult with the FWS and the Georgia Department of Natural Resources, and consider whether additional protection measures are needed.”
6-10	Bullet 1	Change text as shown “Directing growth towards the most suitable lands while intensive discouraging growth on environmentally sensitive lands.”
6-14	Paragraph 2, bullet 3	Add text “Current U.S. Fish and Wildlife Service’s design manual does allow perched culverts when used in combination with embedded culverts”
7-2	Paragraph 2	Change text as shown “ It is recommended that the Metro Water District foster additional dialogue and research to determine specific needs and recommendations for future actions. ” to read “ <u>Georgia EPD as part of the Comprehensive State-wide Water Management Plan will develop guidance for local government programs to manage fertilizer related to lawn use in watersheds where phosphorus loading is an issue. The Metro Water District should consider the benefits of these recommendations prior to conducting additional research or creating additional recommendations for future action.</u> ”
7-4	Bullet 1 under Streamline Reporting Requirements	Delete bullet as this activity already occurred in 2008: “ Participate the GAWP Streamlining Task Force and dialogue related to streamlining current regulatory requirements (2008). ”
7-5	Add a new section	Watershed Management Program Evaluation The Metro Water District should work through the Technical Coordinating Committee, and if necessary, a sub-committee of the TCC to discuss options for measuring progress to improve the Metro Water District annual progress reports. Metro Water District staff should facilitate discussions to establish additional methodologies for measuring progress of the Watershed Management Program (2009 – December 31, 2011).
7-5	Add a new section	Regional Monitoring Network Monitoring efforts—particularly those on inter-jurisdictional water bodies and main-stem rivers—can expand the assessment of the Watershed Management Plan and implementation efforts across the Metro Water District. The Metro Water District should explore leveraging existing real-time flow and water quality monitoring data currently performed by USGS and other entities within the region. The Metro Water District should also consider using USGS or other entity to perform more detailed analysis of the monitoring data to determine linkages between watershed conditions and the water quantity and quality data. As funding permits, the Metro Water District may consider supplementing the existing monitoring stations with additional stations and/or adding equipment to existing stations.
9-2	Local Government Implementation Schedule	Add row “5.B.4 Greenspace and Green Infrastructure Tools for Watershed Protection” with active implementation in 2009 and 2010 and ongoing implementation/ program maintenance through 2035.

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9-3	Regional Agency Implementation Schedule	Add row “7.9 Watershed Management Program Evaluation” with active implementation in 2009 and 2010 and ongoing implementation/ program maintenance through 2035.																																																																																			
9-5	Table 9-4	<p>See revised Table 9-4 Estimated Annual Implementation Cost by Program Category below:</p> <p>Table 9-4 Estimated Annual Implementation Cost by Program Category</p> <table border="1" data-bbox="581 478 1425 758"> <thead> <tr> <th rowspan="2">Management Measure</th> <th colspan="3">Per Capita Cost ¹ Level of Service</th> </tr> <tr> <th>Low</th> <th>Medium</th> <th>High</th> </tr> </thead> <tbody> <tr> <td>5.A Legal Authority</td> <td>\$0.50</td> <td>\$1.13</td> <td>\$1.75</td> </tr> <tr> <td>5.B Watershed Planning</td> <td>\$0.15</td> <td>\$0.38</td> <td>\$0.60</td> </tr> <tr> <td>5.C Land Development</td> <td>\$0.50</td> <td>\$0.88</td> <td>\$1.25</td> </tr> <tr> <td>5.D Asset Management</td> <td>\$3.10</td> <td>\$14.55</td> <td>\$26.00</td> </tr> <tr> <td>5.E Pollution Prevention</td> <td>\$1.30</td> <td>\$2.13</td> <td>\$2.95</td> </tr> <tr> <td>5.F Watershed Conditions Assessment</td> <td>\$0.30</td> <td>\$0.44</td> <td>\$0.58</td> </tr> <tr> <td>5.G Education and Public Awareness</td> <td>\$0.22</td> <td>\$0.29</td> <td>\$0.36</td> </tr> <tr> <td>5.H Resource-specific Measures</td> <td>\$0.25</td> <td>\$0.75</td> <td>\$1.25</td> </tr> <tr> <td>TOTAL</td> <td>\$6.32</td> <td>\$20.53</td> <td>\$34.74</td> </tr> </tbody> </table> <p>Notes: 1.Basis for costs includes: Metro Water District 2003 Watershed Management Plan, EPA NPDES MS4</p>	Management Measure	Per Capita Cost ¹ Level of Service			Low	Medium	High	5.A Legal Authority	\$0.50	\$1.13	\$1.75	5.B Watershed Planning	\$0.15	\$0.38	\$0.60	5.C Land Development	\$0.50	\$0.88	\$1.25	5.D Asset Management	\$3.10	\$14.55	\$26.00	5.E Pollution Prevention	\$1.30	\$2.13	\$2.95	5.F Watershed Conditions Assessment	\$0.30	\$0.44	\$0.58	5.G Education and Public Awareness	\$0.22	\$0.29	\$0.36	5.H Resource-specific Measures	\$0.25	\$0.75	\$1.25	TOTAL	\$6.32	\$20.53	\$34.74																																								
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10-4	Add a new section before Conclusion	<p>Annual Plan Survey and Reporting</p> <p>The Metro Water District performs an annual survey of local jurisdictions to appraise overall progress towards implementing the Watershed Management Plan. A summary of these survey results are published annually in the Metro Water Districts <i>Annual Activities and Progress Report</i>.</p>																																																																																			

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		<p>Information that will be collected as part of the annual survey and evaluation of progress will include:</p> <ul style="list-style-type: none"> · Model Ordinances – adoption status of each model ordinance or equivalent · Future-Conditions Floodplain Delineation – status of modeling and mapping efforts · Integrated Development Review Process – collect each local government’s checklist or other review instrument · Asset Management – reporting of status of inventory efforts, as well as inspection/maintenance program · Pollution Prevention – status of local implementation programs · Watershed Conditions Assessment – collect long-term ambient trend monitoring program data, provide regional summary including map · Watershed Improvement Projects – collect list of project and locations, provide regional summary including map <p>As additional metrics for measuring progress are developed by the Metro Water District and TCC (see Section 7), they will be included in the annual survey and progress report.</p>
A-3	Appendix A-1	Correct that Buford had adopted the Stream Buffer Ordinance
Global		Update Table of Contents
Global		Typos, formatting errors and necessary corrections to maps based on changes made to text.

5.B.4 GREENSPACE AND GREEN INFRASTRUCTURE TOOLS FOR WATERSHED PROTECTION

ACTION ITEM

Implement one or more development and land use policies or practices which encourage the protection of greenspace and/or the use of green infrastructure within the community.

OBJECTIVE

Encourage and promote greener development for the purposes of watershed protection.

DESCRIPTION OF MEASURE

In addition to the comprehensive land use planning coordination to be undertaken in 5.B.1, there are a number of tools for local jurisdictions to directly address and mitigate the impact of future growth and development through the protection of greenspace and use of green infrastructure. The optional local measures in Section 6 include a number of methods for achieving the goal of protecting water resources through both land use planning and development policies.

Each city and county within the Metro Water District has its own unique set of attributes as well as watershed management challenges and opportunities, thus this measure allows local governments to select and implement a measure from a toolbox of possible options:

- **Conservation Subdivision / Open Space Development Ordinance** – Adoption of an ordinance or other local mechanism such as a zoning category or planned unit development (PUD) process to preserve open space and greenspace for watershed protection while accommodating development. More details can be found under Measure 6.A.3 in Section 6.
- **Greenspace / Green Infrastructure Plan** – Development and adoption of a formalized greenspace or green infrastructure plan for greenspace protection that prioritizes strategic greenspace acquisition activities by identifying key resources and critical habitats before they are developed. More details can be found under Measure 6.B.1 in Section 6.
- **Sustainable Growth Planning** – Development of a sustainable growth plan for the community to promote a compact, efficient, and environmentally sensitive pattern of development that influences travel, housing, and employment choices by directing new development away from rural or naturally sensitive areas and toward existing or planned activity centers and public facilities. More details can be found under Measure 6.B.2 in Section 6.

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: _____

Section 5: LOCAL MANAGEMENT MEASURES

WATERSHED PLANNING

- **Evaluation of Local Codes for Green Infrastructure Practices** – Undertake a process to evaluate local building codes, ordinances, and other regulations and provisions to identify impediments and barriers to the use of the green infrastructure and greener approaches to growth—including the use of infiltration, reuse and evapotranspiration—and the development site planning and design approaches described under Measure 6.B.3 in Section 6.
- **Locally Developed Program** – Other local management program for protecting watershed health through land use and/or growth management mechanisms.

SPECIFIC SUB-TASKS

Sub-Task	Description
Implementation of greenspace/green infrastructure option for watershed protection	Selection and implementation of one of the toolbox options for addressing growth management for the protection of water resources through encouraging the protection of open space, greenspace and the use of green infrastructure

IMPLEMENTATION GUIDANCE

Local jurisdictions are required to implement at least one of the toolbox options listed above. See Section 6 for more information and details on several of these options.

~~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
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- 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 ~~U~~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 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.~~