

# River Basin Profiles



The River Basin Profiles (RBPs) are intended to provide watershed-based information and perspectives on potential management issues within each of the Metro Water District's HUC-8 watersheds. Each profile contains information regarding physical and natural features, land use, impaired waterbodies, management issues, and strategies to address those issues. While the strategies contained within the RBP are *not* required for implementation, they serve as a guide for the types of actions that can be used to address water management issues, primarily within the realm of nonpoint source management.

Action Item [WATERSHED-8](#) requires that local governments carry out Watershed Improvement Projects and many jurisdictions develop watershed improvement plans to help direct where and what kinds of projects they carry out. Jurisdictions should look to the RBPs as a starting point for local watershed planning. Additionally, jurisdictions can use the information in the RBP as a foundation for 9-Element Watershed Plans, which are required for a Section 319(h) Implementation Grant.

In addition to being a foundational source of information for localized planning, RBPs also provide a high-level perspective of each basin. This high-level perspective further reinforces the interconnectedness of the various water sectors (supply, waste, storm, etc.) and brings in additional elements such as land use. The RBPs do not get into specific details on each subwatershed, allowing for a high-level integration to guide local planning and management. Local sub-watershed planning is typically handled at the local level, with District support as needed.

Each RBP contains the following information:

- Physical and Natural Features (geography, hydrology and soils, and protected species)
- Land Use and Impaired Waterbodies Characteristics (water supply, land cover/land use, effective impervious areas, combine sewer overflows, and impaired waters). Impaired waterbodies described in each RBP reference the Final Georgia 2014 303(d)/305(b) List of Impaired Waters as the 2016 List of Impaired Waters had not yet been finalized.
- Management Issues and Recommendations (priority areas, issues and strategies, and indicators of success)

At the end of the RBP section there is a collection of success stories that are intended to highlight programs and project local governments have implemented to address management issues. These stories may or may not be directly as a result of District requirements, but they are included to give a clearer understanding for the kinds of activities that can be used to address known issues.

## Overview of District Watersheds

The Metropolitan North Georgia Water Planning District (Metro Water District) is located on the eastern subcontinental divide and is composed of three distinct river systems, six river basins and nine separate 8-digit Hydrologic Unit Code (HUC-8) Basins as outlined in Table A-1 and illustrated in Figure A-1. Unlike most other major metropolitan areas in the United States that drain to a large (from a volume perspective) water body such as an ocean, lake or river, the region primarily drains to smaller headwater tributaries with

limited or no groundwater capacity, making water resource management more challenging. These major river systems and their outlets include the following:

- **Apalachicola, Chattahoochee and Flint (ACF):** Almost half, 48 percent, of the Metro Water District drains to the ACF, which ultimately flows to the Gulf of Mexico at Apalachicola Bay in Florida
- **Alabama, Coosa, Tallapoosa (ACT):** Twenty-eight percent of the Metro Water District is part of the ACT, which drains to the Gulf of Mexico at Mobile Bay in Alabama
- **Altamaha River:** The remaining 24 percent of the Metro Water District is part of the Altamaha River system including the Upper Ocmulgee and Upper Oconee River Basins, which drain to the Atlantic Ocean in Georgia

The Metro Water District is within six major river basins: the Chattahoochee, Coosa, Flint, Ocmulgee, Oconee and Tallapoosa River Basins. Each river basin within the Metro Water District is described in this appendix by breaking them out into their corresponding HUC-8 as defined by the U.S. Geological Survey (USGS) and U.S. Department of Agriculture (USDA) – National Resource Conservation Service (NRCS) Watershed Boundary Dataset (WBD). The WBD provides a uniquely identified and uniform method of subdividing large drainage areas for progressively smaller areas, such as HUC 8, 10, and 12 (USGS, 2015). This approach provides consistency with other water resource studies to further characterize their unique watershed characteristics and challenges. River Basin Profiles for each of the nine river basins identified in Table A-1 are included as Attachments 1 through 9 of this appendix. HUC-12 watersheds are listed by number and description in Attachment 10.

**Table A-1. Metro Water District Basins and Terminology**

River System	Major River Basin	HUC-8 River Basin	HUC-8 #	% of Metro Water District	% of HUC-8
<b><i>Apalachicola, Chattahoochee and Flint (ACF)</i></b>					
	Chattahoochee	Upper Chattahoochee River	3130001	18	57
	Chattahoochee	Middle Chattahoochee River (to Lake Harding)	3130002	19	30
	Flint	Upper Flint River	3130005	11	21
<b><i>Alabama, Coosa Tallapoosa (ACT)</i></b>					
	Coosa	Etowah River	3150104	24	63
	Coosa	Coosawattee River	3150102	2	12
	Coosa	Oostanaula River	3150103	1	6
	Tallapoosa	Upper Tallapoosa River	3150108	1	3
<b><i>Altamaha River</i></b>					
	Oconee	Upper Oconee River	3070101	4	7
	Ocmulgee	Upper Ocmulgee River	3070103	20	33

Figure A-1. Metro Water District Major River Basins

A profile for each HUC-8 Basin is included in Attachments 1 through 9 of this appendix. Table A-2 lists the attachment number for each; the HUC-8 Basin; and the abbreviations used for table, figure, and page numbering.

**Table A-2. HUC-8 Basin Profile Guide**

<b>Attachment No.</b>	<b>HUC-8 Basin</b>	<b>Abbreviation</b>
1	Upper Chattahoochee River	UC
2	Middle Chattahoochee River	MC
3	Upper Ocmulgee River	UO
4	Upper Flint River	UF
5	Etowah River	ER
6	Coosawattee River	CO
7	Oostanaula River	OO
8	Oconee River	OC
9	Upper Tallapoosa River	UT

## Land-Use

Each RBP contains land-use information based on ARC's Land Pro 2012 data, the most recent year for which data is available. This information is intended to give a perspective on current trends. Section 3 of this plan also includes information on the Unified Growth Policy Map, which helps agencies create policies and strategies for directing future growth. As population increases, land-uses are more likely to intensify. While projecting where specific land-uses will change, conducting more localized watershed planning using these RBPs as a foundation and in consultation local comprehensive plans will allow for watershed management activities to better anticipate areas where land-uses are likely to change.

Due to discrepancies in data type, future land-use projections were not included in these profiles. However, using current land-use data and population projections, local jurisdictions can get a better sense of where attention should be paid within the context of land-use effects on watershed health.

## Watershed Planning Elements

The U.S. Environmental Protection Agency (EPA) delineated nine minimum elements to address in watershed plans that could ultimately be used to seek incremental Clean Water Act Section 319 and other funds intended to address water quality impairments (EPA, 2004). Grant applicants are expected to develop their own detailed, watershed-specific plans typically at the HUC-12 or smaller level. The River Basin Profiles, included as Attachments 1 through 9, were developed to provide a starting point for Metro Water District communities by providing details consistent with EPA's nine minimum elements. Table A-3 lists the nine elements and describes how the Water Resources Management Plan supports these local efforts by meeting these nine elements considered critical for achieving water quality improvements. Each element is annotated with additional references so that a grant applicant can use the RBP as a foundational watershed management plan on which to add more specific details from watershed protection plans, monitoring data and evaluation, comprehensive planning documents or other sources.

Table A-3. EPA 9 Minimum Elements of a Watershed Plan

Element	Element Description	References to RBPs and Additional Guidance
a.	Identification of causes of impairment and pollutant sources (or groups of similar sources) that need to be controlled to achieve needed load reductions.	The River Basin Profiles summarize causes of impairment and pollutant sources. They may be used as a basis to develop site-specific information for each local jurisdiction or permittee based on the current watershed guidance from the Georgia Environmental Protection Division (Georgia EPD).
b.	An estimate of the load reductions expected from implementation actions.	<p>See models and tools at <a href="http://water.epa.gov/type/watersheds/datait/watershedcentral/tool.cfm">http://water.epa.gov/type/watersheds/datait/watershedcentral/tool.cfm</a> and <a href="http://water.epa.gov/infrastructure/greeninfrastructure/gi_performance.cfm">http://water.epa.gov/infrastructure/greeninfrastructure/gi_performance.cfm</a>.</p> <p>For structural measures, if designed, constructed and maintained in accordance with the Georgia Stormwater Management Manual (GSMM), best management practices (BMPs) are expected to provide the design removal efficiencies listed in Table 4.1.3-1 of the GSMM. Use the Stormwater Quality Site Development Review Tool that accompanies the GSMM, Spreadsheet Tool for Estimating Pollutant Loads (STEPL), PLOAD GIS-based model or other tools to estimate the load reductions that would result from the implementation of various structural measures (Atlanta Regional Commission [ARC], 2001; TetraTech, 2015; CH2M HILL Engineers, Inc. [CH2M], 2001).</p> <p>For nonstructural measures that may reduce the amount of stormwater runoff or potential pollutant sources before they occur, load reductions can be estimated based on land use types, soil characteristics and stream channel stability for a specific drainage area or watershed. These watershed characteristics would be evaluated with information about the frequency and amount of the nonstructural activity, such as street sweeping or public education efforts. There are several techniques developed by states, Municipal Separate Stormwater System (MS4) programs and watershed protection groups around the country that provide methodology or references for nonstructural load reductions; however, EPA recognizes the many variables and performance uncertainty particularly associated with nonstructural measures. The emphasis has been on including nonstructural measures as an integral part of ensuring the success of a watershed management program.</p> <p>See Chapter 9, Set Goals and Identify Load Reductions, of the <i>Handbook for Developing Watershed Plans to Restore and Protect Our Waters</i> for more information (EPA, 2008).</p>
c.	A description of the nonpoint source implementation actions to achieve load reductions in element b, and a description of the critical areas for implementation of those actions.	<p>Critical areas for implementation are identified in the River Basin Profiles under Management Issues and Recommended Strategies. Additional site-specific information and analysis for each local jurisdiction or permittee may be needed to quantify reductions. See also EPA Recovery Potential Screening tools that are used by Georgia EPD's 319 grant program to prioritize areas (<a href="http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/recovery/index.cfm">http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/recovery/index.cfm</a>)</p> <p>See Chapter 9, Set Goals and Identify Load Reductions, of the <i>Handbook for Developing Watershed Plans to Restore and Protect Our Waters</i> for more information on identifying implementation actions for critical areas (EPA, 2008).</p>
d.	Estimate of the amounts of technical and financial assistance needed and authority for implementation.	This Plan outlines the general schedule and costs expected for implementation as well as suggestions for local funding sources. The Plan also addresses the authority for implementation and Federal and State Regulations.

Table A-3. EPA 9 Minimum Elements of a Watershed Plan

Element	Element Description	References to RBPs and Additional Guidance
e.	Public information and education component to enhance public's understanding of the plan and to encourage their early and continued participation in implementation.	Public information and education is described in this Plan.
f.	Schedule for implementing the nonpoint source management measures identified in this plan that is reasonably expeditious.	Specific implementation schedules should be developed based on individual needs, costs, budgets and available resources. The schedule should include parties responsible for implementation. Section 9 describes the schedule for implementing District-wide nonpoint source management measures; although many of these actions are ongoing and are evaluated annually through implementation surveys.  See Chapter 12, Design Implementation Program and Assemble Watershed Plan, of the <i>Handbook for Developing Watershed Plans to Restore and Protect Our Waters</i> for more information on developing implementation schedules.
g.	A description of interim measurable milestones for tracking implementation.	As with element f., interim milestones would be established by each community within their schedule based on available resources and goals. Review descriptions of implementation actions in Sections 5 and 6.
h.	A set of criteria to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining water quality standards.	This Plan includes watershed-specific action items that address criteria for establishing load reductions. This Plan also includes a description of the District's trackable milestones.
i.	A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established under element h.	This plan includes long-term monitoring requirements.

Each entity's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Stormwater System (MS4) program already implements many of these critical elements. Table A-4 summarizes the number of MS4 communities in the Metro Water District by County listed by Georgia EPD category (Phase I Large, Phase I Medium or Phase II Small MS4). EPA defines an MS4 as a conveyance or system of conveyances that are designed or used to collect or convey stormwater (including storm drains, pipes, ditches) that discharge to waters of the U.S.; are owned by a public entity such as a state, city or County and are not a combined sewer or publicly owned treatment works (sewage treatment plant) (EPA, 2015). Phase I permittees include medium and large cities or urbanized counties with populations of 100,000 or more while Phase II (Small) communities include entities within an urbanized area or that are outside of an urbanized area, yet are designated by Georgia EPD, as the permitting authority, to obtain NPDES permit coverage for their stormwater discharges. Over three quarters of the MS4 communities (counties, cities, and towns) in the Metro Water District are either a Phase I or Phase II regulated entity. The balance of those entities not covered are the less densely populated cities located outside of the official Atlanta Urbanized Area or are towns that are not incorporated; therefore, they do not provide stormwater services.

Table A-4. MS4 Communities in the Metro Water District

	Bartow	Cherokee	Clayton	Cobb	Coweta	Dekalb	Douglas	Fayette	Forsyth	Fulton	Gwinnett	Hall	Henry	Paulding	Rockdale	Totals	Percent of Total
Not Covered	6	3			6		1	2		1	2	3	1	1		27	25
Phase I Large MS4s			7	7		9				10	12					45	42
Phase I Medium MS4s									1							1	1
Phase II Small MS4	2	4	1		2	2	2	4	1	4	1	4	4	3	2	35	32
<b>Totals</b>	<b>8</b>	<b>7</b>	<b>8</b>	<b>7</b>	<b>8</b>	<b>11</b>	<b>3</b>	<b>6</b>	<b>2</b>	<b>15</b>	<b>15</b>	<b>7</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>108<sup>a</sup></b>	

<sup>a</sup>Total does not include Georgia Department of Transportation.

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