

## EXECUTIVE SUMMARY

The Metropolitan North Georgia Water Planning District (Metro Water District) was created by the Georgia General Assembly in 2001 (O.C.G.A. §12-5-572) to serve as the water planning organization for the greater metropolitan Atlanta area. The Metro Water District's purpose is to establish policy, create plans and promote intergovernmental coordination of water issues in the District from a regional perspective.

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 91 municipalities partially or fully within these counties. The Metro Water District also has seven authorities which provide water, sewer, and/or stormwater services. The Metro Water District's plans and policies work to protect water resources in the Chattahoochee, Coosa, Flint, Ocmulgee, Oconee, and Tallapoosa River Basins.

With the adoption of the Georgia State-wide Water Management Plan by the Georgia General Assembly in 2008, the Metro Water District is now one of eleven regional water planning councils in the state, and will continue to work within the integrated framework of state water resources planning.

The Metro Water District enabling legislation mandated the development of three long-term regional plans to address the water resources challenges:

- Water Supply and Water Conservation Management Plan
- Wastewater Management Plan
- Watershed Management Plan

The first plans were completed and adopted in 2003 and have been actively implemented by local jurisdictions in the Metro Water District.

This document serves as the first update to the original 2003 Long-term Wastewater Management Plan and details strategies and recommendations for comprehensive wastewater management efforts to meet future needs across the rapidly growing Metropolitan North Georgia Water Planning District. The Plan outlines a long-term implementation schedule for public wastewater treatment. It also provides for comprehensive wastewater planning to establish future sewer service areas and calls for more intensive management of privately owned septic systems.

## THE PLAN UPDATE PROCESS

The Metro Water District utilized an integrated planning effort for the plan updates similar to that used to develop the original plans in order to build consensus for long-term regional water resources management solutions. The Metro Water District water resources plans are the result of a collaborative

effort between the Metro Water District's local jurisdictions, the Georgia EPD, and numerous stakeholders.

As envisioned by the Metro Water District's enabling legislation, the planning process includes the Metro Water District Governing Board, a Technical Coordinating Committee (TCC), six Basin Advisory Councils (BAC), Georgia EPD, planning staff from the Atlanta Regional Commission and technical consulting firms.

### INTEGRATION OF PLANNING EFFORTS

The Metro Water District also prepared two other plans which together with the Wastewater Management Plan represent an integrated and holistic approach to water resources planning and management. The **Watershed Management Plan** details strategies and recommendations for both effective watershed and stormwater management and water quality protection. It includes specific tasks and milestones for implementing these recommendations for local governments as well as regional and state agencies. The **Water Supply and Water Conservation Management Plan** provides the framework for meeting local water supply demands over its planning horizon. It calls for intensive water demand management and an aggressive water conservation program. The plan includes recommended supply sources and facilities for the Metro Water District, as well as the interim sizing of water treatment plants required to meet local demands.

### KEY CHANGES TO THE PLAN

In this plan update, there are a number of changes from the 2003 Long-term Wastewater Management Plan, as amended, including a reorganization of the document. The most notable organizational change involved providing simple implementation summaries for each measure that have more background and implementation guidance than were included in the 2003 document.

Additionally, key elements of updating the 2003 Long-term Wastewater Management Plan include a review and update of wastewater management measures, wastewater flow forecasts, existing and future wastewater treatment facilities and ensuring compatibility with the State-wide Water Management Plan.

### EXISTING WASTEWATER MANAGEMENT

Existing wastewater conditions in the Metro Water District are characterized by the use of large publicly owned treatment facilities covered by Georgia EPD's permitting process, smaller private systems including land application systems and decentralized systems, and the use of septic systems in less densely populated areas. Increased demand for wastewater treatment has been met by first seeking permit increases, building or expanding treatment facilities, and relying on septic systems in areas not yet served by sewer.

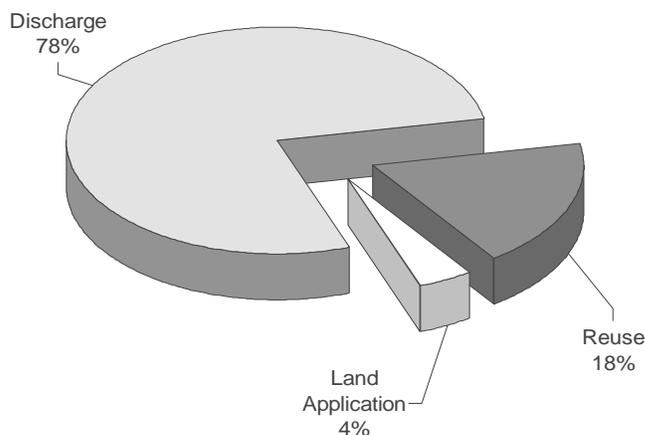
### WASTEWATER TREATMENT, DISCHARGE AND REUSE

The Metro Water District has 303 wastewater treatment facilities based on facilities in operation at the end of 2006. Of these, there are 92 publicly-owned facilities with a total capacity of 660 million gallons per day (MGD) and 211 private facilities (land application systems or decentralized systems). The majority (91%) of publicly owned treatment facilities have advanced levels of treatment.

Sixty-seven percent (67%) of the existing publicly-owned permitted capacity in the Metro Water District is located in the Chattahoochee Basin, including the five largest water reclamation facilities (WRFs). Three counties, Cobb, Fulton, and Gwinnett, have 67% of the treatment capacity of the Metro Water District.

Figure ES-1 displays the distribution of existing publicly-owned treatment capacity by type of discharge. The majority of the available treatment capacity, over 75%, is released to surface waters. Small amounts are discharged to land application systems, and reuse, both non-potable and indirect potable, is practiced as a discharge alternative.

**FIGURE ES-1**  
**Discharge Locations at Existing Publicly-Owned Treatment Facilities (2006)**



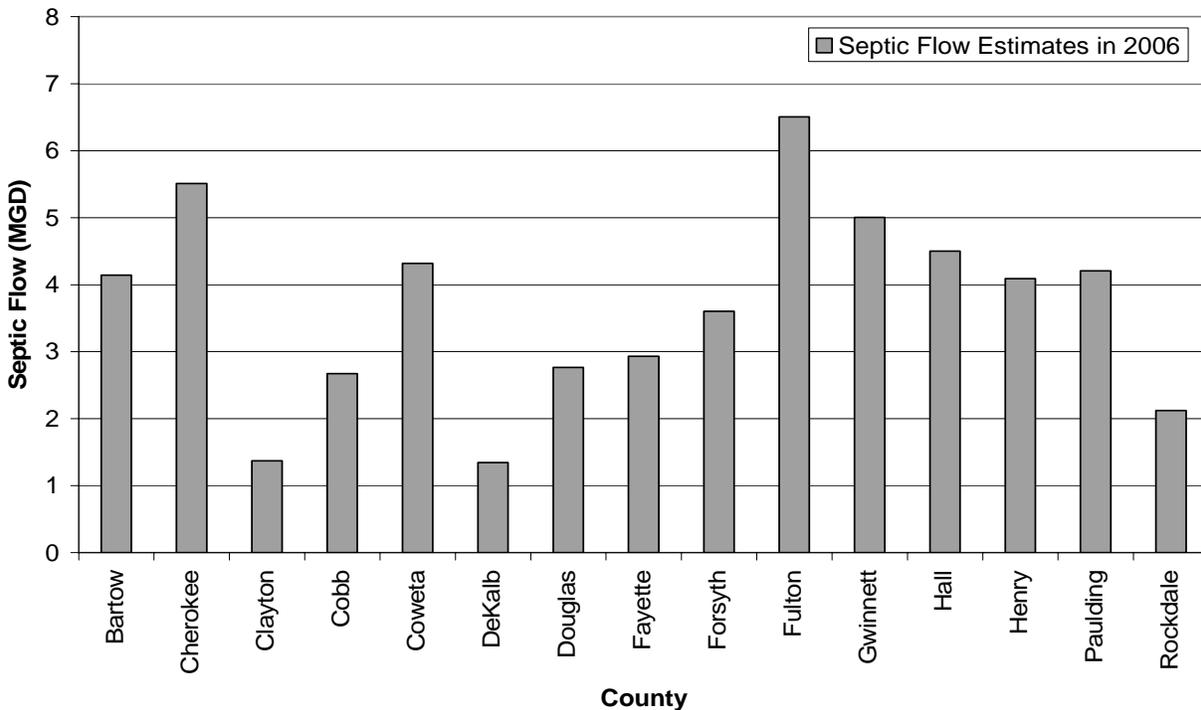
### **DECENTRALIZED WASTEWATER SYSTEMS AND LAND APPLICATION SYSTEMS**

Decentralized wastewater systems and land application systems are viable treatment options for some communities if the system is owned and operated by a Responsible Management Entity (RME). This entity must possess the technical, managerial, and financial capacity to ensure viable long-term, cost-effective, centralized management, operation, and maintenance of the system in accordance with appropriate regulations. Of the 211 privately owned wastewater facilities located in the Metro Water District, 30 are owned by public school systems, 98 are owned by industries, and the remaining 83 are owned by campgrounds, mobile home parks, and residential developments.

### **EXISTING SEPTIC USAGE**

Approximately one-fifth of residential wastewater and one-tenth of all wastewater generated in the Metro Water District is currently treated by septic systems. Although the percentage of septic systems is anticipated to decline as population density increases and more sewer service is made available, local wastewater plans should include options for disposal of pumped septage. Figure ES-2 displays the estimated annual average day septic flows by county for 2006.

**FIGURE ES-2**  
**Estimated Annual Average Day Septic Flows by County (Year 2006)**



**EXISTING WASTEWATER TREATMENT PLANT IMPACTS ON STREAM QUALITY**

Despite progress since 2003, over 1,500 miles of stream within the Metro Water District currently do not meet state water quality standards according to the 2008 Georgia EPD list of impaired waters. The dominant parameter of concern creating these impairments is fecal coliform. The primary source of fecal coliform is listed as non-point runoff from urban areas. Discharges from Water Reclamation Facilities are considered to impair only a few streams, and programs outlined in the Watershed Management Plan and in Sections 7 through 9 of this Plan are intended to address these impairments and provide future protection to water quality.

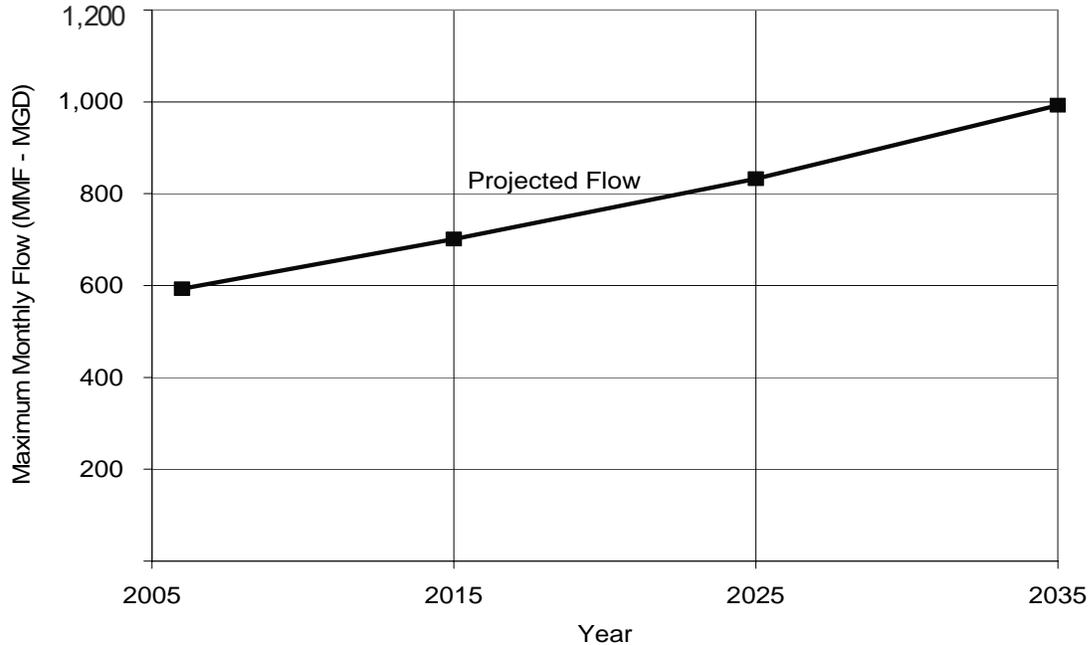
**WASTEWATER FLOW FORECASTS**

The population of the 15-county Metro Water District is expected to increase by over 3 million people during the planning period with a corresponding increase in economic activity. This increase in population and economic activity is forecasted to produce 993 million gallons per day of wastewater that will need to be managed during a maximum month in 2035. This forecast does not include flows from septic systems or decentralized systems.

To provide the treatment capacity required to meet this forecasted flow, the Metro Water District will primarily rely on the expansion of existing facilities. A total of 48 existing facilities are scheduled for expansion, 19 new facilities will be constructed, 20 existing facilities will continue to operate at their current capacity, and 24 facilities will be retired. This schedule will result in a total of 87 wastewater treatment plants either in operation, or under construction, in the Metro Water District by 2035. Figure

ES-3 displays the forecasted trend of wastewater flow to be managed by wastewater treatment plants (WWTP).

**FIGURE ES-3**  
Trend of Wastewater Flow to be Managed at WWTPs



Septic systems and decentralized systems will continue to be used as a wastewater discharge option in less densely populated areas not yet served by sewer. Most counties within the Metro Water District have experienced septic system and decentralized system failures, abandonment, or both. Once these systems fail, or are left to deteriorate by neglectful owners, the result can be damaging to the environment and expensive to correct. Continued emphasis on planning, management and maintenance of on-site wastewater systems is needed.

## WASTEWATER MANAGEMENT ISSUES

Water resource issues in the Metro Water District are driven by the geography of the region, dominated by headwater streams and reservoirs. These surface waters are used for multiple purposes including drinking water, recreation, fisheries, and discharge points for most wastewater treatment plants. Competing uses for the limited water resources create special Metro Water District-related issues, including:

- Limited assimilative capacity of local waterbodies and the potential impact of non-point source pollution which will require higher levels of wastewater treatment
- Consumptive losses from on-site sewage management systems and land application systems limiting future instream and off-stream uses by contemporary users
- Future development of additional Total Maximum Daily Loads (TMDL) to manage non-point sources of pollution which may influence future wastewater treatment requirements

- Increased biological loading as a result of water conservation measures, reduced inflow and infiltration, pumped septage, illicit discharges to the system, and an increased use of garbage disposals
- Increasing numbers of private facilities that provide less reliable performance, require greater manpower to operate, have a lowered ability to process sudden changes in influent flow, and often have absentee owners who are difficult to locate should problems arise
- Failing or non-functioning septic systems that are located outside of planned, future sewer service areas
- Aging wastewater collection systems that are susceptible to inflow and infiltration
- Future capacity to treat and dispose of residuals and pumped septage
- Water reuse needs in an area with limited future water supplies

## PLANNED WASTEWATER TREATMENT FACILITIES

One aspect of the Wastewater Management Plan is a vision of wastewater treatment infrastructure that will be in place in 2035. The infrastructure plan presents a long-term overview of where treatment facilities will be located and an estimate of their capacity. Because the treatment facilities are owned and operated by local wastewater providers, they will refine this Plan as time unfolds, optimizing it, and adding innovation. The significant features of the infrastructure component of the plan are:

- Construct 19 new wastewater treatment plants
- Expand 48 existing wastewater treatment plants
- Retire 24 existing wastewater treatment plants
- Upgrade wastewater treatment plants to protect water quality
- Enhance reliability of wastewater treatment plants and pumping stations
- Return reclaimed water to Lake Lanier and Lake Allatoona

## WASTEWATER COLLECTION SYSTEM INSPECTION AND MAINTENANCE PROGRAM

There are approximately 16,000 miles of sewers and more than 450,000 manholes within the Metro Water District. Sewers and manholes within the Metro Water District range in age from new to over 100 years old. As the system continues to age, proper inspections and maintenance are critical. Inspections and maintenance not only maintain a high level of customer service, but also protect water quality. Identifying and correcting collection system deficiencies in conjunction with overflow spill response programs may help local water bodies meet State water quality standards.

This plan contains measures for wastewater management including:

- Sewer systems inventory and mapping
- Sewer systems asset management
- Sewer system inspection program

- Sewer system maintenance program
- Sewer system rehabilitation program
- Capacity certification
- Grease Management Program
- Sewer System Overflow Emergency Response Program
- Sewer Systems Inspection and Maintenance Training

## SEPTIC SYSTEMS AND PRIVATE WASTEWATER SYSTEMS

This Plan discusses management recommendations for on-site sewage management systems serving a single family residence as well as recommendations to better manage the use of larger private decentralized systems that treat wastewater generated by more than one property or residence. While the County Board of Health is responsible for the siting, design and construction of onsite wastewater management systems, the Wastewater Management Plan focuses on the planning and policy frameworks to be established by the local governments and local wastewater providers in the Metro Water District in coordination with the County Board of Health. The most common on-site sewage management systems within the Metro Water District are septic systems; therefore this Wastewater Management Plan uses the terms septic system and on-site sewage management system interchangeably.

The measures to better manage septic systems and private wastewater systems include:

- Septic System Planning
- Septic System Critical Area Management
- Septic System Maintenance Education
- Septic Tank Septage Disposal
- Private Decentralized Wastewater Systems Ordinance
- Septic System Coordination

## LOCAL WASTEWATER PLANNING

The Metro Water District's Wastewater Management Plan is regional in breadth; it covers a wide range of topics. The specifics will be developed and/or refined at the local level by the local jurisdictions through their local wastewater master plans. A local wastewater master plan typically evaluates the local system and facilities and recommends solutions to address the design, construction, and financing of facilities to meet anticipated regulatory requirements, residential and commercial growth, and system reliability needs. Local wastewater master plans are important for providing a dependable wastewater system for existing and future customers. Local wastewater master plans, at a minimum, must ensure that wastewater services are developed cost effectively, with a long-term regional perspective while providing good customer service.

## STATE AND REGIONAL POLICY RECOMMENDATIONS

State and regional policy recommendations are provided to further implementation of wastewater best practices in the Metro Water District. These recommendations are intended for State and regional agencies, and require no action on the part of local governments. The recommendations identify actions to be taken, including:

The Georgia Environmental Protection Division (Georgia EPD) should continue its current efforts to improve coordination and communication among the groups handling wastewater permits.

- Georgia EPD should facilitate the return of flows within the Metro Water District.
- Georgia EPD should consider requiring decentralized systems in the Metro Water District to comply with the same requirements as municipal wastewater permittees.
- The Georgia Department of Community Affairs should update the new Comprehensive Land Use Plan audit checklist and consider additional minimum planning requirements.
- The Georgia Department of Human Resources should coordinate with local governments in order to better manage the planning, siting, installation, maintenance, and removal of septic systems within the Metro Water District.

## EDUCATION AND PUBLIC AWARENESS

Education and public awareness is essential to effective water resources management. This Plan includes an education and awareness program specifically designed to:

- Raise public awareness of water issues and needs to foster support for solutions
- Educate the public and other identified target groups in order to increase awareness and encourage behavioral changes
- Coordinate with other public as well as private entities to maximize the visibility of the Metro Water District and its messages

The Metro Water District education and public awareness program is comprised of two elements: a regional program managed by the Metro Water District staff; and education activities undertaken by local governments. The Metro Water District provides a regional education and public awareness program, the *Clean Water Campaign*, which develops mass media content and educational tools and materials, including a comprehensive website, brochures and presentation materials. The local governments' role in education and public awareness is to reach out to specific groups in their communities, provide educational materials and share knowledge of subject matters with the public by undertaking specific education and outreach activities. Local governments in the Metro Water District are required to implement a minimum number of education, outreach, public participation, and involvement activities annually as part of their local education programs.

## PLAN IMPLEMENTATION

The Wastewater Management Plan provides implementation guidance and schedules for the management measures and actions included in the Plan. Local wastewater providers have a high level of accountability for implementing the Wastewater Management Plan's measures through the Georgia EPD audit process. Georgia EPD auditors conduct a thorough review of the local programs and

procedures to determine consistency with the Metro Water District Wastewater Management Plan. Communities must substantially comply with the Metro Water District plan provisions in order to modify or obtain new water withdrawal permits, wastewater discharges, GEFA loan funding, or the renewal of MS4 stormwater permits. Overall, this system has worked well to ensure implementation of the provisions of all three Metro Water District water resources plans.

### IMPLEMENTATION FUNDING

Successful implementation of the wastewater management action items located in this plan requires adequate funding. Local governments should develop a stable funding mechanism that will provide for complete implementation. There is only one appropriate primary funding method available to local governments, wastewater rates. In addition, there are a number of secondary sources of funding, including the local government's general appropriations, loans, bonds, service fees, and grants. A blend of funding mechanisms is recommended for most local governments.

### FUTURE PLAN EVALUATION

The Metro Water District enabling legislation identifies the need to periodically assess regional progress towards implementation of the specific actions identified in the Wastewater Management Plan and towards meeting the long-term goal of comprehensive water resources management. The action items provide the framework for evaluating implementation of this Plan.

There are two types of plan reviews and updates: annual reviews and plan updates that occur every five years. The reviews and updates are an important component of an adaptive management approach for all three of the Metro Water District's long-term management Plans (water supply and conservation, wastewater, and watershed).

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