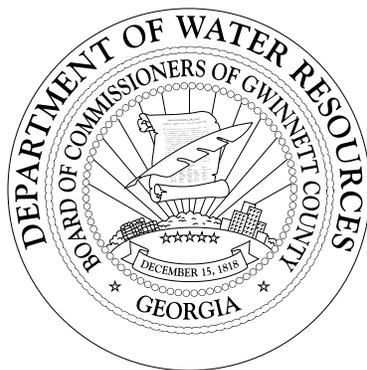


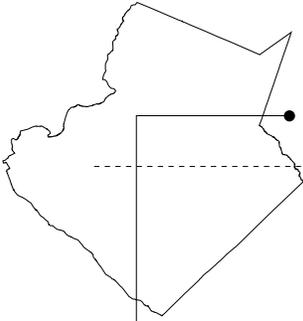


department of water resources annual report **2007**

• **gwinnett**county georgia

07





- department of  
water resources

customers  
**building on our reliability:**  
water, wastewater, and stormwater services  
environment



board of  
**commissioners**



Charles E. **Bannister**

---

CHAIRMAN



Lorraine **Green**

---

DISTRICT 1



Bert **Nasuti**

---

DISTRICT 2



Mike **Beaudreau**

---

DISTRICT 3



Kevin **Kenerly**

---

DISTRICT 4

county  
**administration**



Jock A. **Connell**

---

County Administrator



Michael D. **Comer**

---

COO/Deputy County Administrator



Susan **Lee**

---

Deputy County Administrator



water and sewerage  
**authority members**

Garland **Smith**  
 CHAIRMAN

---

Michael **Sullivan**  
 VICE-CHAIRMAN

---

Tommy **Hunter**  
 SECRETARY

---

Charles **Ashworth**  
 MEMBER

---

Kevin **McOmber**  
 MEMBER

---

Scott **Batterton**  
 CHAIRMAN

---

Ed **Sullivan**  
 VICE-CHAIRMAN

---

Jay **Puckhaber**  
 MEMBER

---

Jimmy **Orr**  
 MEMBER

---

Chad **Baker**  
 MEMBER

---

Louis **Young**  
 MEMBER

---

stormwater  
**authority members**

table of **contents**

introduction	4
2007 at a glance	4
water and wastewater planning	5
water service	6
wastewater service	8
stormwater management	10
financial stability	15
gwinnett county water map	19
gwinnett county sewer map	20

## introduction

This annual report provides an overview of the operation, condition, and growth of Gwinnett County's water, water reclamation, and stormwater programs for 2007; a description of the Department of Water Resources (DWR) management and facilities; a general assessment of operations; and highlights of significant events in 2007.

The County's water and water reclamation facilities were transferred to the Gwinnett County Water and Sewer Authority in 1985 and were then leased back to the County for operation.

## staffing and organization

The DWR staff numbered 609 at the end of 2007—up from 580 in 2006—and included 17 registered Professional Engineers. There were eight divisions in the department: Finance, Planning and Permitting, Water Reclamation, Water Production, Field Operations, Stormwater Management, Infrastructure Systems, and Engineering and Construction.



*Max Foote Construction Company added a mural to the four-million gallon storage tank at the Lower Big Haynes Creek Pump Station*

2007 at a Glance	
Water customers	234,447
Sewer customers	141,807
Water meters connection permits sold	3,962
Miles of water main installed	80.5 miles
Water main totals*	3,345.77 miles
New sewer connections	4,440
Miles of sanitary sewer installed	115.51 miles
Total miles of sanitary sewer	2,595.06 miles
Fire hydrants installed*	1,139
Total fire hydrants	40,038
Water treatment capacity	225 mgd
Water use – average day	86.9 mgd
Water use – maximum day	126.3 mgd
Raw water storage (mg)	45
Wastewater treatment capacity**	71.62 million gallons
Wastewater treated – average day	49.36 million gallons

\* Total number equals amount installed and subtracted amount abandoned

\*\* Including contracted capacity in other jurisdictions



## water and wastewater planning: ensuring a sustainable future



*No Business Creek Tunnel construction*



*Deep underground wetwell storage tank under construction for the new Level Creek Pump Station*

The Planning Division reorganized this past year into four sections with responsibilities as follows:

1. **Long-Range Planning:** Long-range planning of water and wastewater infrastructure and regional planning issues
2. **Current Planning:** Coordinating short-term development needs such as wastewater capacity certifications, fire flow testing, variances, betterments, and utility locates
3. **Data Services:** Developing and improving departmental data access to facilitate the use of accurate and reliable information in decision making
4. **GIS/Records:** Maintaining water and wastewater GIS records

The department is currently in the process of updating the Gwinnett County Water and Wastewater Master Plan. Extensive work has been done internally this past year to improve the water and sewer hydraulic models and develop wastewater flow and water demand projections based on future population projections. Public involvement in this process will begin in 2009 with the formation of a Citizen's Advisory Committee that will meet throughout the year to develop plans and policies for the next 50 years. Completion is anticipated in early 2010. All of this work has been, and will continue to be, closely coordinated with other County and regional planning initiatives.

DWR has continued to participate in the development of the Unified Plan by the Department of Planning and Development. This effort has been a three-year process that included planning and engineering personnel from various County departments. The Department of Water Resources provided extensive data analysis of various proposed scenarios to aid the overall planning process as well as review and input regarding proposed policies and plans. This planning process has greatly improved communications between County departments and will allow for better planning in all departments as time goes on.

The department has also been active in the updates of the three Metropolitan North Georgia Water Planning District Plans. Planning and engineering personnel have attended district meetings throughout the year and worked closely with district personnel and its consultants to ensure that the long-term interests of the citizens of Gwinnett and the entire district are fairly and accurately represented in the plans. The updates will be completed in early 2009.

An Asset Management Section was formed this past year and charged with the task of developing an advanced asset management program for the department. The overall goals of this effort are to instill an asset management mindset throughout the department, ensuring that the Gwinnett County Department of Water Resources continues to be recognized as an industry leader in its ability to make appropriate decisions based on risk, life cycle costs, and value to our customers. Much has been accomplished this past year, most notably the performance of several business case evaluations to help to solve identified problems and considerable compilation of increased data on existing assets (condition assessments, historical repair data, etc.). Future work will include the development of a methodology to be used to prioritize capital projects and strategic asset management plans for various types of assets.



**water service:**  
providing drinking water  
to our customers



*With the ongoing drought presenting challenges for water utilities, contingency plans were developed for continuous water supply*



*Lanier Raw Water Pump Station*



*Lanier Backwash Equalization Tanks and Pump Station*

**Raw Water Supply**

Gwinnett County's water source is Lake Sidney Lanier, a manmade lake created by Buford Dam on the Chattahoochee River. The Georgia Department of Natural Resources controls water withdrawals from Lake Lanier, with Gwinnett's monthly average withdrawal set at 150 million-gallons-per-day (mgd). This amount is also governed by a contract with the US Army Corps of Engineers, which operates Buford Dam and generates electricity there.

In 2007, Gwinnett County's average daily production was 86.9 million gallons (mg), down from 87.4 mg the previous year, due to outdoor water use restrictions put in place because of the extended drought. The population increased by an estimated 12,885 during the year. Maximum-day demand was 126.3 mgd compared to 129.8 mgd in 2007.

**Interstate Water Disagreements**

In 2003, negotiations towards an interstate compact between Georgia, Florida, and Alabama on use of the water in the Apalachicola, Chattahoochee, and Flint River basins ended. However, the interstate disagreements concerning that distribution continue. All the lawsuits in the federal district courts have been consolidated in the Jacksonville Federal District Court. The Settlement Agreement between the Corps of Engineers (COE), the power customers, and the water suppliers for storage contracts for the water in Lake Lanier was appealed in the Washington, DC, Circuit Court of Appeals. The appeals court ruled against the COE. While Gwinnett County will continue to have ample water to supply its customers from Lake Lanier, the liability as to what that water will cost continues to be uncertain. The schedule for trying these consolidated cases is uncertain but expected to occur within the next two or three years. The Mobile COE has been ordered to prepare a new Water Control Plan and an Environmental Impact Statement for the plan over the next several years assuming federal funding is supplied. In the meantime, the COE has revised its Interim Operating Plan to accommodate the severe drought occurring in the southeastern United States. The Interim Operating Plan, the accompanying biological opinion by the US Fish and Wildlife Service have also been the target of lawsuits in the federal court system and these suits have also been consolidated into the Jacksonville District Federal Court for resolution.

**Water Treatment**

The Shoal Creek and Lanier Filter Plants operated in conjunction to meet production needs. For much of the year, demand was evenly split between the two treatment facilities. End of year records show the two facilities producing almost 32 billion gallons of water.

The year 2007 saw completion of the rehabilitation project of the Lanier Raw Water Intake/Pump Station. This is the County's original pump station on Lake Lanier, dating from 1977. The upgrade included six new 2000 HP motors, larger capacity pumps, new motor starters and switchgear, and new controls, as well as new telemetry. Also, installation of three new North Area High Service Pumps and motors was accomplished, improving service to about one-third of the county. This involved replacing pumps and motors installed in 1995 with larger capacity units. Work on the Backwash Equalization System for the Lanier Residuals Handling Facility was finished in December, with start-up planned for spring, 2008. An upgrade for the Ozone, Chlorine, and Fluoride Facilities started, with completion due in 2008.

Treatment consists of the following: a coagulant; dual-media filtration; disinfection with ozone and chlorine; and the addition of fluoride for dental health, lime to adjust acidity, and phosphates for corrosion control. Chemicals used in the treatment process include ferric chloride, liquid cationic polymer, ozone, chlorine, fluoride, liquid lime, and ortho/polyphosphate. The Shoal Creek Filter Plant received the Georgia Association of Water Professionals' Gold Award in 2007.



### Water Distribution and Storage

Pumps move finished water from reservoirs called clearwells through transmission mains to water-storage facilities in the distribution system. There are more than 3,300 miles of transmission mains and other pipes in the distribution system, ranging from two to 78 inches in diameter. Over 80 miles of new water lines were built in 2007. Up to 91.7 million gallons of stored water in the distribution system provide consistent line pressure, fire protection, and water availability during periods of high usage. With 1,139 new fire hydrants installed, Gwinnett County has again maintained a fire insurance rating of four.

### gwinnett county water system information • 2002 – 2007

Year	2002	2003	2004	2005	2006	2007
County population <sup>(1)</sup>	648,833	673,774	700,794	726,723	739,608	776,347
Water customers/meters	195,431	203,657	211,723	220,856	230,850	234,447
Water plant capacity (mgd)	150	150	150	225	225	225
Water customers added	10,108	8,226	8,066	9,133	9,994	3,597
Water use – average day (mgd)	83.4	76.4	82.7	80.7	87.4	86.8
Water use – maximum day (mgd)	122.5	106	112.8	113.3	129.8	126.3
Raw water storage capacity	37	37	45	45	45	45
Tanks and clearwell storage (mg)	91.7	91.7	120.7	120.7	120.7	120.7
Water mains – total miles*	2,951	3,025	3,091	3,185	3,269	3,346
Water meters connection permits sold	9,118	8,538	8,707	8,679	8,045	3,962
Water main miles installed	99.7	81.1	79.6	105.6	94.1	80.5
Customers per mile of water main	66.2	67.3	68.5	69.3	70.6	70.1
Permit withdrawal limits (mgd)	150	150	150	150	150	150
Fire hydrants – total	31,144	32,306	33,371	34,894	38,916	40,038
Fire hydrants installed	1,502	1,224	1,139	1,598	1,351	1,139
Fire insurance rating	4	4	4	4	4	4

<sup>(1)</sup> Source: Gwinnett County Department of Planning and Development

\* Total water main miles equals miles installed minus miles abandoned



**wastewater  
service:**  
reclaiming water,  
protecting the  
environment



Rehabilitation and expansion of the Yellow River Water Reclamation Facility by Pizzagalli Construction Company



Crooked Creek Water Reclamation Facility improvements

**Water Reclamation**

The County's six water reclamation facilities (WRFs), plus one operated by DeKalb County, treated 18.0 billion gallons of Gwinnett's wastewater in 2007.

**Wastewater Collection System**

More than 2,595 miles of sanitary sewers, ranging from eight to 72 inches in diameter, collect wastewater that flows by gravity to large-diameter interceptor sewers and then to the WRFs. Pump stations and force mains are used as necessary whenever topography does not permit gravity flow. The County has 230 active pump stations in service and more than 249 miles of force mains, ranging from 2.5 to 48 inches in diameter. There are nine new pump stations under construction and eight more being designed. Currently, 42 metering stations measure wastewater flow in the system and from certain large commercial and industrial customers, and from two wholesale wastewater customers, DeKalb County and the City of Norcross. In addition, there are 95 metering stations to monitor infiltration and inflow.

**Wastewater Treatment Capacity**

The total wastewater treatment capacity for Gwinnett County is currently 71.62 mgd. An additional 40 mgd of treatment capacity has been constructed at the F. Wayne Hill Water Resources Center. A 40-mgd discharge permit to Lake Lanier has been issued and construction of an effluent pipeline is expected to be complete at the end of 2009. At the end of 2007, the six water reclamation facilities ranged in size from 0.62 mgd to 29 mgd of permitted capacity. Gwinnett County has a contractual agreement with DeKalb County for five mgd of treatment capacity at the Pole Bridge Wastewater Treatment Plant.

**WRF Operation**

Wastewater passes through various stages of screening, clarification, biological and chemical treatment, filtration, and disinfection before being discharged into streams and rivers. De-watered biosolids are buried in municipal landfills. Each reclamation facility has a National Pollution Discharge Elimination System permit issued by the Georgia Environmental Protection Division.

The operation and compliance of Gwinnett County Water Reclamation Facilities has led to many state and national awards. In 2007, Gwinnett County was awarded two Gold and four Platinum Awards from the Georgia Association of Water Professionals and two Platinum Awards from the National Association of Clean Water Agencies for 100 percent compliance with permit effluent requirements.

**Ensuring Water Quality**

The Water Resources Laboratory at the F. Wayne Hill Water Resources Center analyzes drinking water and wastewater to ensure compliance with state and federal standards. The lab performs about 17,500 tests annually to comply with *Safe Drinking Water Act* regulations and approximately 35,300 tests annually to ensure that all six WRFs comply with the pollution control requirements of the *Clean Water Act*. Process Control Labs at each of the WRFs and at the Lanier and Shoal Creek Filter Plants also perform regular tests to monitor each facility.

The American Association for Laboratory Accreditation (A2LA) accredited the labs as meeting the requirements of the new *International Organization for Standardization Guide 17025* (ISO 17025).



**wastewater system information • 2002 – 2007**

Year	2002	2003	2004	2005	2006	2007
Sewer customers	113,336	120,967	128,212	135,311	138,289	141,807
Total sewer miles*	2,010	2,101	2,209	2,368	2,480	2,595
Sewer miles installed	99.7	91.8	95.4	105.6	111.5	115.5
Treatment capacity (mgd)	64.1	64.1	64.1	63.6	71.6	71.6
Maximum month daily average	55.3	55.8	56.6	55.3	53.8	52.8
Actual average day	46.9	50.4	50.7	52.1	51.2	50.8

\* Total number equals amount installed and subtracted amount abandoned

**wastewater treatment capacity at the end of 2007 (mgd)**



72-inch pipe along Hillcrest Drive before its installation as part of the nine-mile pipeline that will return reuse water from the Hill Water Resources Center to Lake Lanier

Facility	Permitted	Average Daily Flow in Maximum Month	Average Daily Flow
F. Wayne Hill	29.0	19.2	17.8
Crooked Creek	16.0	12.3	13.7
Yellow River	13.5	10.2	9.1
Pole Bridge*	5.0	4.9	4.2
Beaver Ruin	4.5	3.3	3.1
Jackson Creek	3.0	2.8	2.5
Jacks Creek	0.6	0.5	0.4

Actual Maximum is Average Daily Flow During Maximum Month (ADMMF)

Average Daily Flow is Annual Average Daily Flow (AADF)

\* DWR's portion of a facility operated by another utility



**stormwater management:**  
flooding, drainage,  
and water quality



*The \$1 million stream restoration and stormwater pond retrofit at Collins Hill Park received joint funding from Water Resources, Gwinnett County Parks and Recreation, and the Georgia Environmental Facilities Authority*

The Stormwater Management Division protects and promotes the health, safety, and welfare of the public by providing programs and services to prevent flooding, provide adequate drainage, and protect and enhance water quality in the county's streams and lakes.

**Stormwater Utility Planning and Implementation**

Gwinnett County set up a stormwater utility in 2005 to improve drainage problems, fulfill regulatory requirements, and reduce pollution carried to waterways by stormwater.

Previously, there was no dedicated funding for the stormwater system so the County used general funds from taxes to maintain the system. Increasing costs demanded a more fair and equitable funding mechanism. A stormwater user fee provides revenue to maintain and improve existing stormwater infrastructure and to implement a comprehensive stormwater management plan as required by the Georgia Environmental Protection Division.

The terms of Gwinnett County's state issued wastewater permits require that Gwinnett's streams be brought into compliance with applicable water quality and habitat standards. The need to improve customer service and responsiveness also affects the need for increased funding. Some residents with drainage problems had been on a waiting list for over three years. Since the advent of the utility, the County has been able to substantially reduce the number of projects remaining on this waiting list.

The stormwater utility fee is based on impervious surface area, which is correlated to the quantity of stormwater runoff a site generates. Basing the fee on this measure is the most fair and equitable method of distributing the costs of maintaining and operating the stormwater system. A stormwater utility is a government-owned enterprise, producing separate revenues designated for stormwater programs exclusively.

The County determines the fee for each property based on the total square footage of impervious area in units of 100 square feet. For 2008, the annual stormwater fee is \$2.01 per 100 square feet. In accordance with the rate resolution the annual unit charge will increase to \$2.46 per 100 square feet for the years 2009, 2010, and 2011.

To determine the impervious surface on a piece of developed property, the County uses computerized maps from its Geographic Information System (GIS) and digitized aerial photographs. In order to maintain as much accuracy as possible in the billing database, the areas of impervious surface on each parcel must be updated regularly. Aerial photography is collected annually to accomplish this.

The City of Lilburn joined the stormwater utility in 2007. Residents of Lilburn will now receive the same services as those in unincorporated Gwinnett.

Additionally, the City of Grayson signed an agreement with the County in 2007 which provides the city with assistance in maintaining compliance with various federal, state, and regional stormwater management mandates. Residents of Grayson are not billed a stormwater utility fee. Instead, the city is charged an annual fee for services provided.

The Gwinnett County Stormwater Authority Act signed by Governor Perdue on May 18, 2007, established Gwinnett County's Stormwater Authority. This legislation provided that the Stormwater Authority consist of a seven-member board. Members one through five are selected at large and appointed by the Gwinnett County Board of Commissioners.



Members six and seven are nominated by a majority vote of a committee composed of the mayor of each municipality that receives stormwater services from the County and shall be appointed to the Stormwater Authority by the Gwinnett County Board of Commissioners.

The Gwinnett County Board of Commissioners appointed the following members to the Stormwater Authority on February 5, 2008:

Member Number	Member Name	Appointment Expiration
1	Ed Sullivan	December 31, 2009
2	Jay Puckhaber	December 31, 2008
3	Jimmy Orr	December 31, 2009
4	Chad Baker	December 31, 2008
5	Louis Young	December 31, 2009
6	Vacant	December 31, 2008
7	Scott Batterton	December 31, 2009

### Public Education

Staff members have developed several programs to encourage environmentally responsible behavior at home, school, and work. *Gwinnett Adopt-A-Stream* is a leader in educating Georgians about water quality. Protecting our natural environment also plays a key role in coordinating public programs. Activities include river cleanups, facility tours, Adopt-A-Stream workshops, storm-drain stenciling, and water-quality monitoring. In addition, annual events such as Rivers Alive, Clean Water Week, and Watershed Improvement Project Tours contribute to public education about water quality.

The Gwinnett Environmental and Heritage Center plays a key role in partnering with the Stormwater Utility in these public education efforts.

### Public Participation

Opportunities for citizen participation in processes that influence stormwater regulations include the Development Advisory Committee, Tree Advisory Committee, Growth Issues Steering Committee, and Revitalization Task Force.

Utility customers are also encouraged to assist in protecting the county's waterways by adopting or implementing various stormwater best management practices. These practices, which can be structural or operational, assist the utility in meeting established goals. For this assistance customers are offered credits on their stormwater utility fee. Full details are contained within the Stormwater Utility Fee Credits manual.

### Water Quality Protection and Post Construction Stormwater Management

Reducing nonpoint source pollution is one of the major goals of the stormwater program. This is accomplished through the implementation of various pollution source identification efforts, which include illicit-discharge investigations, dry weather discharge monitoring, stream walks, and inspections of industrial and municipal operations for compliance with the Gwinnett County *Illicit Discharge and Illegal Connection Ordinance*.



An inventory of stormwater pipes has been completed. Information collected during this effort is stored in the County's GIS and assists investigators in identifying illicit discharges. At the end of 2007, 2,076 miles of storm sewer pipes had been inventoried.

To address pollution from new developments, the County requires the installation of water-quality best management practices (BMPs) and recorded maintenance agreements from the owners. Once accepted, they become part of the stormwater management system, and receive annual inspections to ensure proper operation and maintenance. In 2007, 2,114 BMP inspections and re-inspections were completed.

### Construction Site Pollution Control

Erosion control during construction is vital to protect water quality. The Department of Planning and Development provides stormwater management roles such as plan review and construction inspection. Planning and Development staff review erosion control plans to mitigate impacts of new developments on streams. Planning and Development inspectors also perform construction-site inspections as part of their duties, while the Department of Transportation ensures that County transportation projects address sediment and erosion control.

### Watershed Improvement Program

Gwinnett County developed a comprehensive watershed improvement program to protect and improve water quality and stream conditions. An assessment and modeling project, completed in 2000, documented the condition of the watersheds and developed a model to predict pollutant levels based on land use. It identified the need to protect and improve stream health including habitat, biology, and water quality. Gwinnett County's *Watershed Protection Plan* was developed in response to this study.

The *Watershed Protection Plan* identified major stressors of streams and water quality:

- Changes in hydrology as a result of development
- Pollutants released to streams
- Loss of natural riparian buffers

The plan also outlined strategies to address these stressors and protect and improve conditions in streams and lakes including:

- Adoption of new regulations to address water quantity and quality
- Improving areas that have been adversely impacted by stormwater runoff (Watershed Improvement Planning)
- Activities to promote watershed stewardship

### Watershed Improvement Planning

Watershed Improvement Planning is the first step toward improving affected areas. Since the County began comprehensive watershed planning in 2001, the objective has been to develop capital improvement plans aimed at watersheds and streams adversely impacted by stormwater runoff. This included detailed evaluations to identify locations and sources of impairments and developing and prioritizing capital improvement solutions. Work involved walking streams to evaluate and record conditions and GIS locations as well as developing concept-level plans. Typical projects include:



Yellow River Structure Y-15 received upgrades



- Best Management Practices (retrofitting existing BMPs and building new facilities to treat water quality)
- Stream bank/channel protection, stabilization, and restoration
- Drainage infrastructure repair and replacement

Watershed improvement planning has been completed for about two-thirds of the county (290 square miles) with Capital Improvement Plan recommendations estimated at \$150 million. Watershed improvement plans are currently being finalized for an additional 100 square miles and are anticipated to be completed in the late spring of 2008.

### **Watershed Improvement Implementation**

To begin implementing capital improvement plans, the County received a low-interest, State Revolving Fund loan from the Georgia Environmental Facilities Authority (GEFA) to construct nonpoint source pollution improvements in the amount of \$5 million. This was the first such loan in the state for stormwater improvements.

Construction of the first four projects under this GEFA loan (Collins Hill Park, Riverside Parkway, Martin Heights Stream and BMP Improvement, and Lake Haven) will be completed in 2008.

After completing the Sweetwater Creek Watershed Plan, Gwinnett County provided stream mitigation credits to satisfy the Georgia Department of Transportation (GA DOT) 404 Permit requirements for the Interstate 85/State Route 316 Interchange improvement project. To mitigate unavoidable losses of natural resources, GA DOT provided \$1.6 million for the McDaniel Farm Park Stream Restoration Project, which was completed in early 2007.

With continued vigorous growth in Gwinnett County, more unavoidable losses of natural resources will require mitigation. Through watershed improvement planning and the resulting capital improvement plans, the County has identified many projects that can provide mitigation for both wetland and stream impacts. The Army Corps of Engineers approved the Gwinnett County Umbrella Mitigation Bank in January 2006, allowing the County to provide stream and wetland mitigation credits resulting from watershed improvement projects. Funds that would have been spent on mitigation banks outside the county can now stay in Gwinnett to facilitate Gwinnett County watershed improvement plans.

Gwinnett County has received three Section 319(h) grants through the Georgia Environmental Protection Division for projects in the Crooked Creek, Lower Yellow River, and the North Fork Peachtree Creek watersheds with engineering and construction budgets of \$600,000, \$1 million, and \$1 million, respectively. All of these projects will implement recommended BMPs to improve and protect water quality and stream conditions. The engineering for the Lower Yellow River project began in 2007 with construction scheduled to begin in late summer of 2008, the Crooked Creek project construction is near completion, and the North Fork Peachtree Creek project is scheduled to begin in early 2009.

### **Operation and Maintenance**

The Operation and Maintenance program provides a functional, reliable storm sewer system that provides adequate drainage, identifies facilities that need to be upgraded, and makes improvements to existing infrastructure to protect and improve water quality. Three main tasks are investigating drainage concerns, constructing system upgrades, and maintaining the system.



*Stream bank restoration prevents erosion, maintains aquatic habitat for native species, and preserves the aesthetic integrity of Gwinnett's natural beauty*

**Flood Study Program**

Water Resources began a six-year program in 1999 to study and identify existing and future floodplains in the county using modeling based on land use and topography. Each year, hundreds of citizens request floodplain information by telephone or in person.

Countywide Digital Flood Insurance Rate Maps (DFIRM) were issued in September 2006. The result is new, detailed studies for approximately 340 stream miles in the county, which is an increase over the 230 stream miles of study on the previous maps. In addition, the updated models include future floodplain modeling and detailed studies that extend to at least the one square mile drainage point. The floodplain mapping data is available in digital format accessible to the public on the County's GIS online data browser.

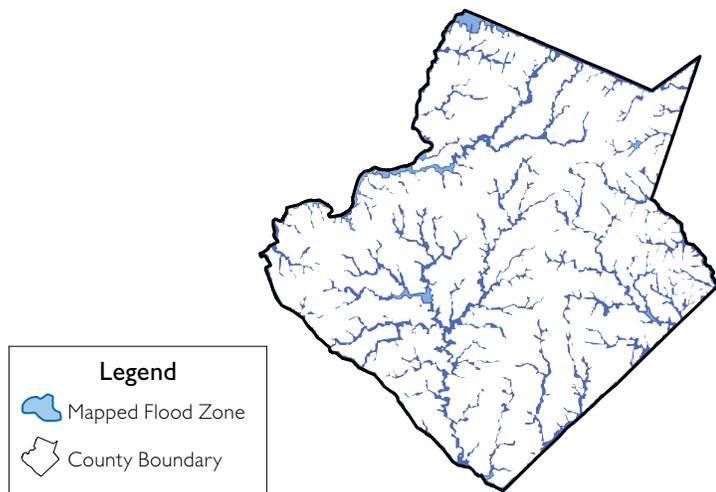
As a Cooperating Technical Partner with FEMA, Gwinnett has access to federal digital maps. Combined with city flood maps, this has produced seamless countywide floodplain maps.

**Watershed Dam Upgrades**

For 20 years beginning in the 1960s, Gwinnett County participated with the US Department of Agriculture to build 14 flood-control dams. Since then, regulations, watershed land use, and estimates of flooding magnitudes have changed. These dams need to be upgraded to meet stricter safety requirements. Construction was completed for three additional dams in 2007, bringing nine of the 14 dams into compliance with state regulations. Final design is under way for three more of the dams with construction pending for an additional two.

**Monitoring**

Four different sampling programs monitor water quality in the county. Dry weather screening, performed at least 118 times a year, identifies illicit discharges to streams. Fourteen long-term water quality trend-monitoring stations detect nonpoint source pollution. As part of the Total Maximum Daily Load Program (TMDL), quarterly fecal coliform sampling is performed to monitor streams that do not meet water quality standards for fecal coliform. Finally, the biological monitoring program involves monitoring of fish, macro invertebrate, and habitat conditions at 30 locations throughout the county.





## financial stability: a solid foundation for future growth



*Customer service representative Hina Patel speaks with a customer. DWR receives approximately 1,200 telephone calls each day regarding water and sewer service*



*Tiny Jackson assists a customer with a payment transaction and water bill inquiry at the DWR Central Facility. Water bills may be paid with automatic bank drafts, online, or in person*

### Rates and Charges

#### Water

The Administrative Division of DWR handles all metering and billing of retail and wholesale water customers. Retail includes residential, commercial, and industrial customers. The division reads all meters monthly. As of December 2007, there were 234,447 water customers.

In the 1990 Bond Resolution, the County pledged to maintain rates, fees, and charges at levels that will produce net revenues equal to at least 1.2 times the Authority's debt-service requirement each year. County policy has been to maintain a 1.5 debt-service coverage.

In 2007, retail water users paid \$3.47 per 1,000 gallons.

Gwinnett County also supplies water at wholesale rates to 11 customers including Barrow, Rockdale, and Walton Counties and the cities of Auburn, Braselton, Buford, Gainesville, Lawrenceville, Loganville, Norcross, and Suwanee.

Other charges, such as fire protection, connection charges, and water impact fees, may apply and vary based on pipe diameter or meter size. In 2007, these rates generated sufficient revenues for the County to meet bond resolution requirements.

#### Wastewater

The Administrative Division also services 141,807 wastewater customers, both retail and wholesale, metered at a monthly rate. Wastewater services are accessible throughout most of the county. The cities of Braselton, Loganville, and Buford provide wastewater services using their own facilities.

Retail wastewater customers in 2007 paid \$4.17 per 1,000 gallons of water use. Since sewer bills are based on water use, they usually increase during summer, which helps reduce discretionary outdoor water use. Customers can install irrigation meters, not subject to sewer charges, to measure outdoor water use.

Gwinnett provides wholesale wastewater service to two customers. DWR is the sole provider for the City of Norcross, while DeKalb County contracts with the department for supplemental treatment capacity. These customers shared initial capital costs and pay a percentage of operating and treatment costs.



# department of water resources annual report • 2007

## proprietary funds statement of net assets december 31, 2007 (in thousands of dollars)

	Water and Sewerage	Storm Water
<b>ASSETS:</b>		
Current assets:		
Cash and cash equivalents	\$ 39,754	9,409
Receivables, net of allowance:		
Accounts	22,408	2,100
Due from other funds	-	-
Due from other governments	-	1,249
Inventories	3,953	-
Prepaid items	11,703	3
Total current assets	<u>77,818</u>	<u>12,761</u>
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	37,305	-
Investments	54,627	-
Total restricted assets	<u>91,932</u>	<u>-</u>
Land and Construction in progress	271,864	9,945
Other capital assets, net of depreciation	2,534,579	409,331
Debt issuance costs	2,256	-
Other assets	898	-
Total noncurrent assets	<u>2,901,529</u>	<u>419,276</u>
Total assets	<u>2,979,347</u>	<u>432,037</u>
<b>LIABILITIES:</b>		
Current liabilities:		
Accounts payable	36,485	2,975
Payroll payable	1,713	216
Retainage payable	9,574	495
Other accrued	1	-
Estimated claims payable-current	-	-
Due to others	214	620
Notes payable-current	369	-
Accumulated leave benefits - current	1,498	193
Unearned revenue	100	731
Total current liabilities	<u>49,954</u>	<u>5,230</u>
Noncurrent liabilities:		
Payable from restricted assets:		
Customer deposits	6,466	-
Accrued interest	11,201	29
Revenue bonds payable-current	30,933	-
Total payable from restricted assets	<u>48,600</u>	<u>29</u>
Notes payable	7,567	2,238
Revenue bonds payable	751,500	-
Estimated claims payable-noncurrent	107	-
Accumulated leave benefits	33	4
Arbitrage payable	1,789	-
Total noncurrent liabilities	<u>760,996</u>	<u>2,242</u>
Total liabilities	<u>859,550</u>	<u>7,501</u>
<b>NET ASSETS:</b>		
Invested in capital assets, net of related debt	2,061,166	417,038
Restricted for debt service	25,199	-
Unrestricted	33,432	7,498
Total net assets	<u>\$ 2,119,797</u>	<u>424,536</u>

Adjustment to reflect consolidation of internal service fund activities related to enterprise funds.

Net assets of business type activities

The notes to the financial statements are an integral part of this statement.



**proprietary funds statement of revenues, expenses, and changes in fund net assets  
december 31, 2007 (in thousands of dollars)**

	<u>Water and Sewerage</u>	<u>Stormwater</u>
<b>OPERATING REVENUES:</b>		
Residential and commercial service	\$ 191,790	-
Wholesale service	9,135	-
Public fire protection charges	442	-
Connection charges	1,593	-
Operating lease income and rental income from individual hangars	-	-
Charges to other funds	-	-
Employee contributions	-	-
Intergovernmental	-	2,450
User fees and charges	-	16,045
Miscellaneous	3,490	60
Total operating revenues	<u>206,450</u>	<u>18,555</u>
<b>OPERATING EXPENSES:</b>		
Water production	14,082	-
Distribution and collection	25,990	-
Engineering	6,430	-
Reclamation	26,988	-
Vehicle maintenance and repair	-	-
Benefit claims	-	-
Insurance premiums	-	-
Depreciation and amortization	63,123	15,341
Transit operations	-	-
General and administrative	21,323	9,801
Total operating expenses	<u>157,936</u>	<u>25,142</u>
Operating income (loss)	<u>48,514</u>	<u>(6,587)</u>
<b>NONOPERATING REVENUES (EXPENSES):</b>		
Interest income	5,455	665
Investment Income (loss)	703	-
Interest expense	(33,986)	-
Gain (loss) on disposal of capital assets	(6,500)	(432)
Total nonoperating revenues (expenses)	<u>(34,328)</u>	<u>233</u>
Income (loss) before transfers and contributions	<u>14,186</u>	<u>(6,354)</u>
Capital contributions	89,210	22,750
Transfers in	881	-
Transfers out	(10)	-
Change in net assets	<u>104,267</u>	<u>16,396</u>
Net Assets – January 1	<u>2,015,530</u>	<u>408,140</u>
Net Assets – December 31	<u>\$ 2,119,797</u>	<u>424,536</u>

Adjustment to reflect consolidation of internal service fund activities related to enterprise funds  
Change in net assets of business type activities

*The notes to the financial statements are an integral part of this statement.*



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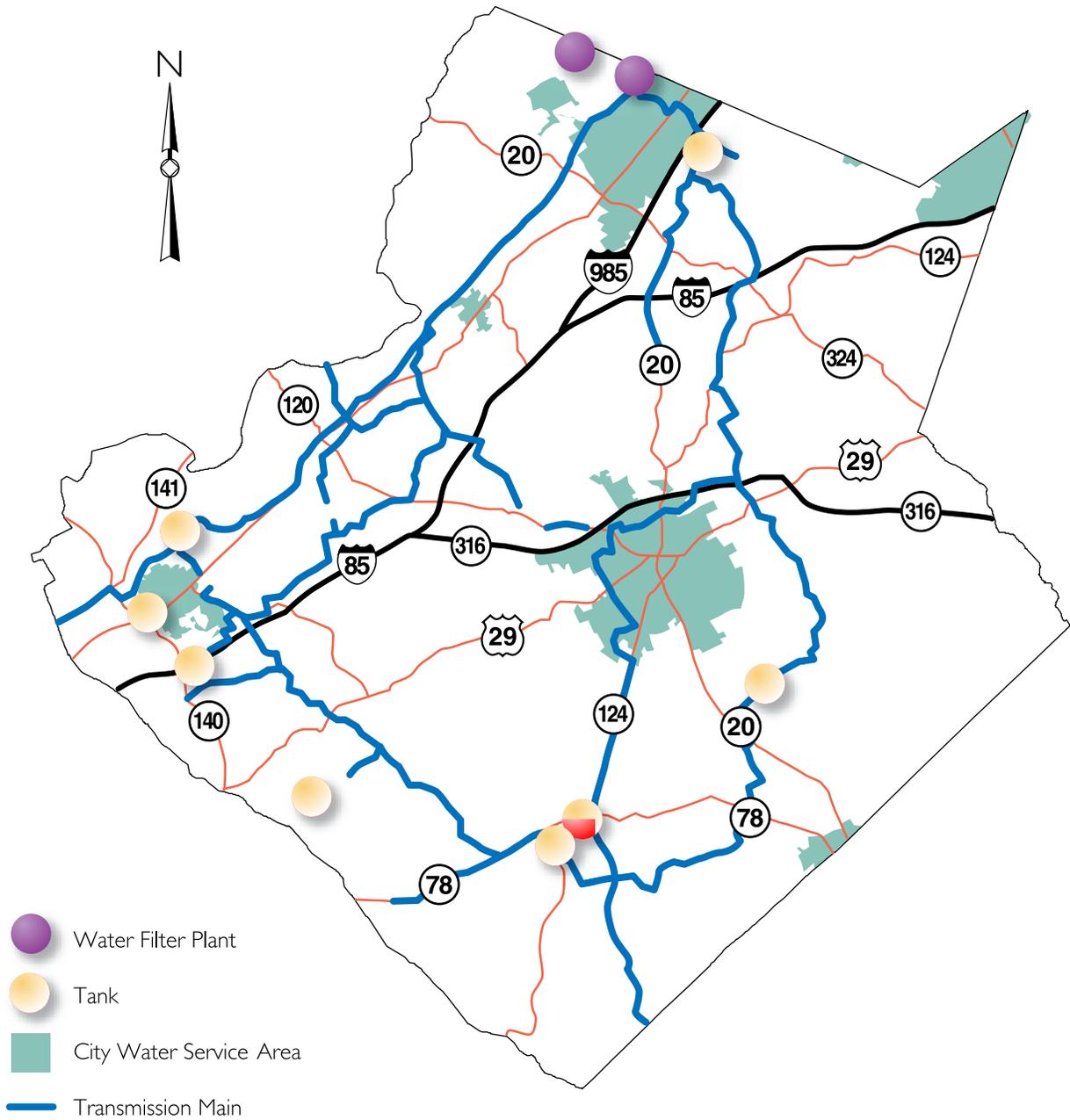
## proprietary funds statement of cash flows year ended december 31, 2007 (in thousands of dollars)

	Water and Sewerage	Stormwater
<b>Cash flows from operating activities:</b>		
Cash received from customers	\$ 211,398	16,571
Cash payments to suppliers for goods and services	(51,848)	(1,553)
Cash payments to employees for services	(35,493)	(4,540)
Claims and premiums paid	-	-
Net cash flows provided/(required) by operating activities	<u>124,057</u>	<u>10,478</u>
<b>Cash flows from noncapital financial activities:</b>		
Transfers from other funds	881	-
Transfers (to) other funds	(10)	-
Net cash provided by noncapital activities	<u>871</u>	<u>-</u>
<b>Cash flows from capital and related financing activities:</b>		
Acquisition and construction of capital assets	(210,517)	(17,576)
Proceeds from disposal of capital assets	52	-
Principal payments - revenue bonds	(30,845)	-
Principal payments - notes payable	6,146	-
Interest paid	(29,110)	-
Capital contributed by others	20,975	-
Net cash (required) by capital and related financing activities	<u>(243,299)</u>	<u>(17,576)</u>
<b>Cash flows from investing activities:</b>		
Net change in investments in pools	89,923	-
Interest on investments	6,158	665
Net cash provided by investing activities	<u>96,081</u>	<u>665</u>
Net increase (decrease) in cash and cash equivalents	(22,290)	(6,433)
Cash and cash equivalents at beginning of year	99,349	15,842
Cash and cash equivalents at end of year	<u>\$ 77,059</u>	<u>9,409</u>
<b>Reconciliation of operating income to net cash provided by operating activities:</b>		
<b>Cash flows from operating activities:</b>		
Operating income (loss)	\$ 48,514	(6,587)
Adjustments to reconcile operating income (loss) to net cash provided/ (required) by operating activities		
Depreciation and amortization	63,123	15,341
<b>Change in assets and liabilities:</b>		
(Increase) decrease in receivables	5,469	(2,445)
(Increase) decrease in inventories	(523)	-
(Increase) decrease in prepaid items	(10,021)	14
Increase (decrease) in payables	17,887	1,427
Increase (decrease) in other liabilities	-	2,728
Increase (decrease) in due to other funds	(1)	-
Increase (decrease) in due to others	(6)	-
Increase (decrease) in deferred revenue	(128)	-
Increase (decrease) in customer deposits	(393)	-
Increase (decrease) in accumulated leave benefits	136	-
Net cash provided/(required) by operating activities	<u>\$ 124,057</u>	<u>10,478</u>
Non-cash capital contributed by others	<u>\$ 68,235</u>	<u>22,750</u>
Non-cash accretion on capital appreciation bonds	<u>5,064</u>	<u>-</u>

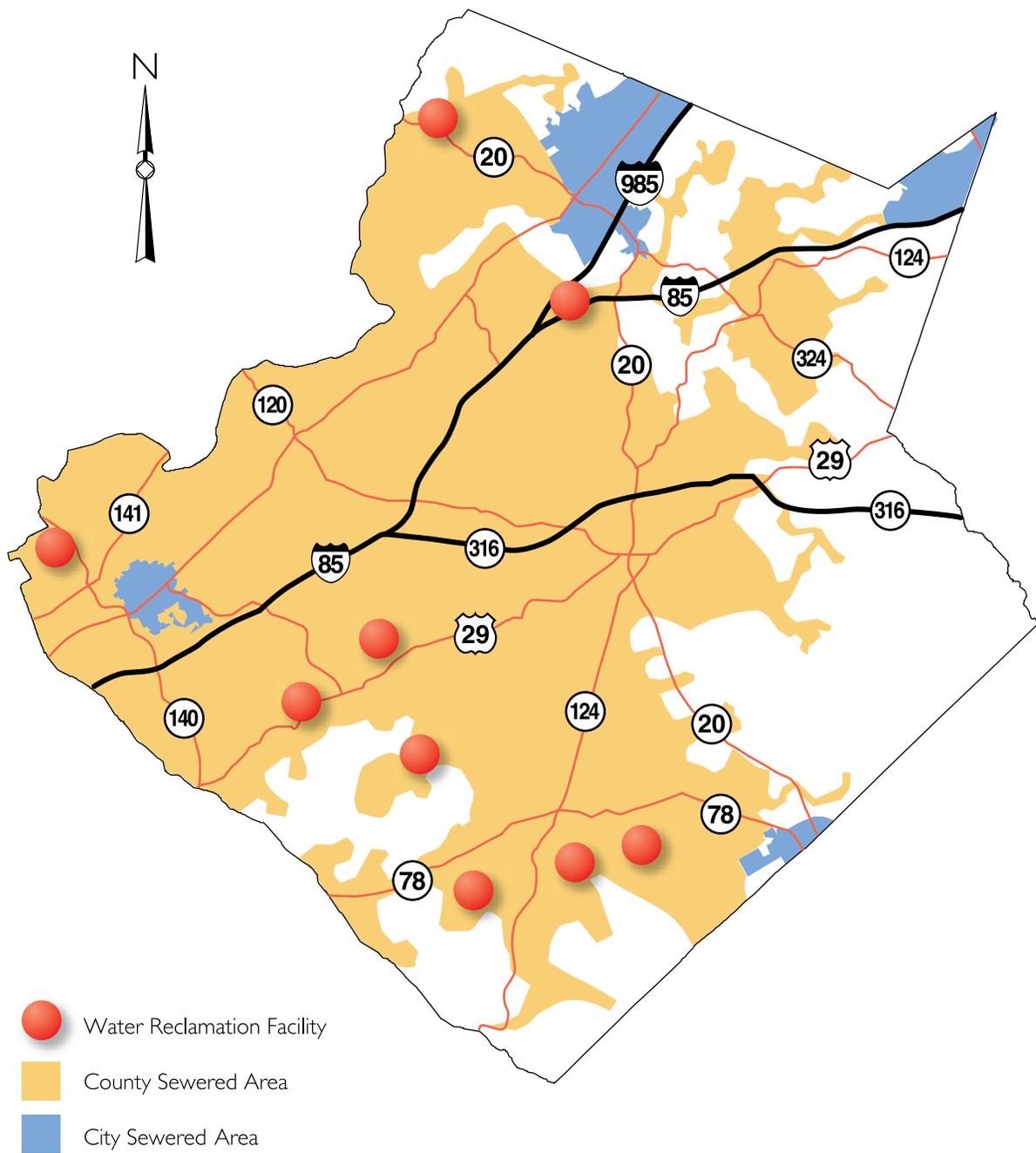
The notes to the financial statements are an integral part of this statement.

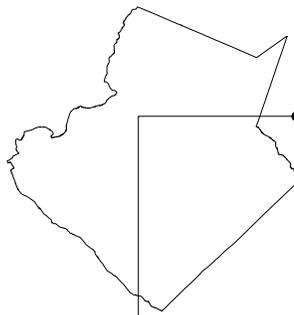


**area served by  
gwinnett county water**



**area served by  
gwinnett county sewer**





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