

**City of Gainesville**  
**Department of Water Resources**  
**Annual Report FY16**





## **INTRODUCTION**

The City of Gainesville's water system supplies potable water to a geographic area of approximately **400** square miles, including Braselton, Buford, Clermont, Flowery Branch, Gainesville, Gillsville, portions of the Lula and Oakwood areas, and unincorporated Hall County. The City maintains over **1,660** miles of underground water and sewer pipelines.

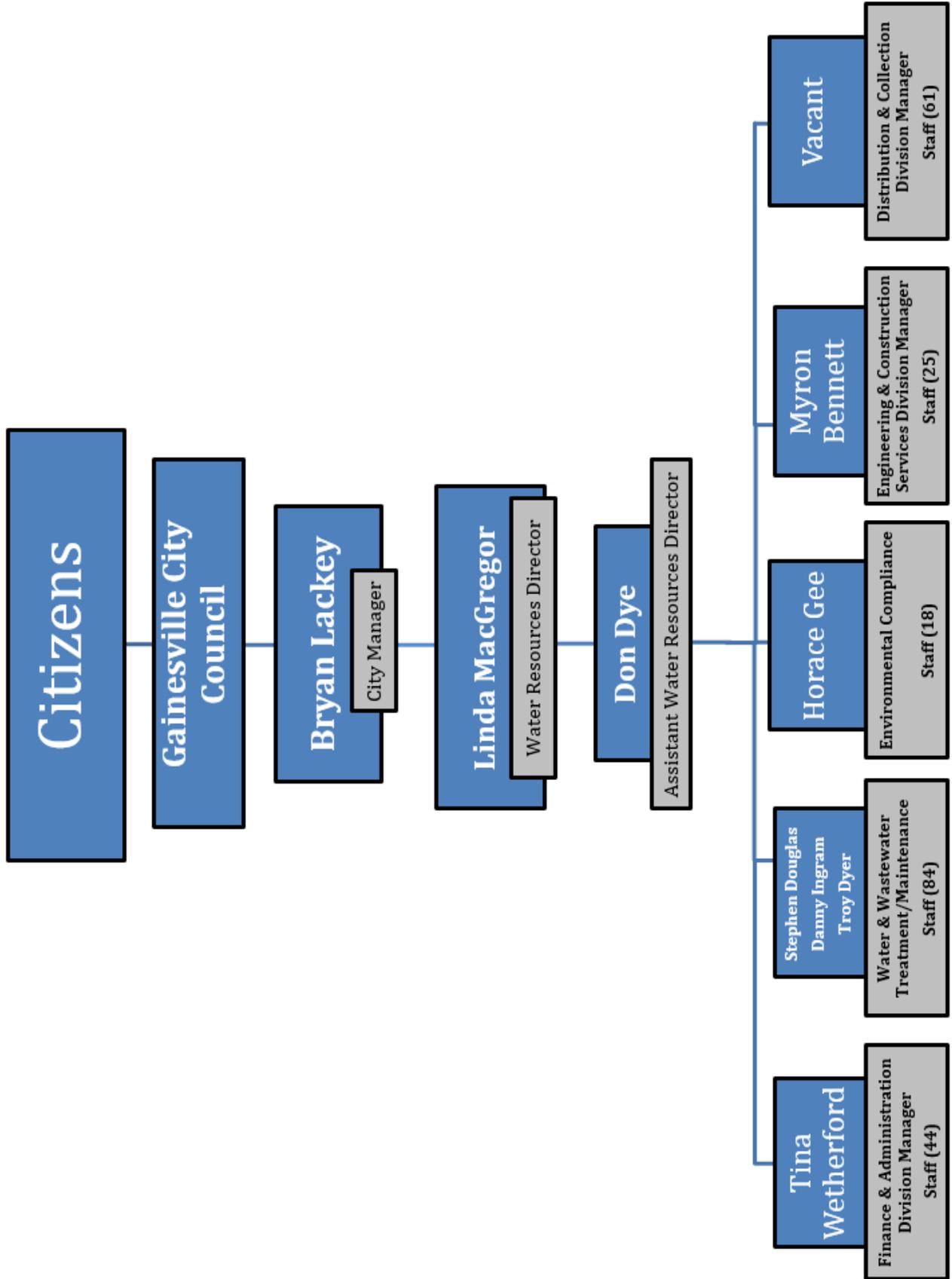
The source of supply of raw water for the System is Lake Lanier, an impoundment of the Chattahoochee River that is owned and operated by the U.S. Army Corps of Engineers. The Georgia Department of Natural Resources, Environmental Protection Division ("EPD") also governs water withdrawal from Lake Lanier through its water withdrawal permitting process. **It is the City of Gainesville Department of Water Resources goal to provide the highest level of service to our customers and ensure that Gainesville and Hall County residents have a continuous supply of the best water in Georgia.**

It takes a dedicated and determined group of men and women to accomplish the tremendous task of managing the community's water resources. The City of Gainesville's Department of Water Resources is comprised of several different divisions working together to manage the water and sewer systems. Each division contributes to the comprehensive management of these systems.

### **The Divisions are:**

- **Finance & Administration**
- **Environmental Compliance**
- **Water & Wastewater Treatment Services / Maintenance**
- **Engineering & Construction Services**
- **Distribution & Collection Services**

*The Divisions and their functions are further detailed in the Departmental sections of this report.*



## Lake Lanier Facts



- Constructed in the 1950s by the US Army Corps of Engineers
- **692** miles of shoreline
- **39,000** acres of water
- Its deepest point is about **160** feet deep
- Record high lake level = **1077.2** MSL (6 feet above full level) in **1964**
- Record low lake level = **1050.79** MSL (20 feet below full level) in **2007**

Source: [US Army Corps of Engineers](#)

<http://www.sam.usace.army.mil/Missions/CivilWorks/Recreation/LakeSidneyLanier.aspx>

## Gainesville Department of Water Resources

### FY16 at a Glance:

|  |                |
|--|----------------|
| <b># of Authorized Positions</b>                           | <b>232</b>     |
| <b>Miles of Water Mains</b>                                | <b>1,363</b>   |
| <b>Miles of Sanitary Sewer</b>                             | <b>291</b>     |
| <b>Meters Served</b>                                       | <b>54,418</b>  |
| <b># Active Water Accounts</b>                             | <b>51,058</b>  |
| <b># Active Sewer Accounts</b>                             | <b>13,303</b>  |
| <b># of Customers Served</b>                               | <b>137,856</b> |
| <b>New Water Connections (Water Meters Sold)</b>           | <b>987</b>     |
| <b>New Sewer Connections (Sewer Taps Sold)</b>             | <b>450</b>     |
| <b>Water Treatment Plants' Maximum Daily Capacity</b>      | <b>35 MGD</b>  |
| <b>Wastewater Treatment Plants' Maximum Daily Capacity</b> | <b>17 MGD</b>  |

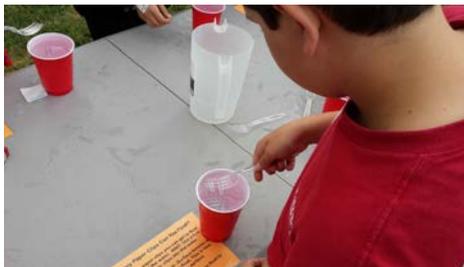
## Fiscal Year 2016:

(July 1, 2015 through June 30, 2016)

This fiscal year has been another year filled with significant events and achievements for the City of Gainesville's Department of Water Resources. Our Department has received several awards this year in recognition of its dedication and excellence in conservation efforts, education, and public outreach. In addition, many important projects were begun, continued and completed by the Utility in FY 2016.

## Environmental Fest

The City of Gainesville Department of Water Resources organized the third annual Environmental Fest at West Hall Middle School. Sixth grade students were able to rotate through 12 different stations throughout the day. They learned all about water and wastewater treatment, recycling, water quality testing, forestry and various other topics. They participated in trivia, played games, listened to stories, blew huge bubbles and enjoyed a fun day of hands on learning.



# FY16 Highlights

## *Annual Adopt-A-Stream Cleanup*

Each year, the City of Gainesville hosts a stream cleanup, held at various locations throughout Hall County. Volunteers remove litter and other debris from our waterways. In FY16, **1,000** pounds of trash and debris were removed from Flat Creek by **95** volunteers who braved the elements (rain) to help make an impact in our community.



*In Partnership with:*



## FY16 Highlights

### *Chamber Chase 2016*

The Greater Hall Chamber of Commerce's 9th Annual Chamber Chase 5K was held at Riverside Military Academy. The City of Gainesville's team, Chicken City Chasers, participated in the event.



**Chicken City Chasers**

# FINANCE AND ADMINISTRATION DIVISION

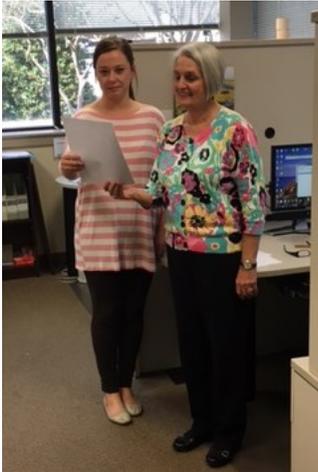
The Finance & Administration Division is comprised of two sections: **Customer Account Services** and **Finance & Administration**. The Division consists of **44** authorized positions which may be broadly categorized as **customer service representatives, customer advocates, billing staff, meter services/sales staff, warehouse staff, administrative and support personnel, financial and divisional management, Assistant Director and the Director**.

## CUSTOMER ACCOUNT SERVICES

*MISSION STATEMENT: To provide our customers with professional, accurate and efficient services.*

### SCOPE OF SERVICES

The **Customer Account Services (CAS)** group is responsible for providing customer service to over **52,500** water and sewer customers. The group is comprised of **31** authorized positions. Some services provided include, but are not limited to, answering customer calls, processing service applications, posting utility payments, billing, meter reading, meter sales, submitting and completing service requests, preparing adjustments and maintaining the billing software database.



D.W. R Customer Services Employees

**FY16 Customer Account Services Statistical Indicators:**

- 70,369** Customer calls handled
- 7,302** Applications for new service processed
- 245,594** Transactions posted (scanned and processed in house)
- 88,329** Payments made through our website
- 17,242** Payments made through our IVR (Interactive Voice Response)
- 119,784** Payments made electronically through our customer online bank
- 31,219** Service orders completed

**The 5<sup>th</sup> year of the  
H<sub>2</sub>O Round up Program  
Brought in \$19,836.79  
This is 10% increase  
from the previous year's  
Contributions**

**Thank you  
City of Gainesville  
Utility Customers**

**-Tina Wetherford**

Finance & Administration Division Manager

## H<sub>2</sub>O: Help 2 Others

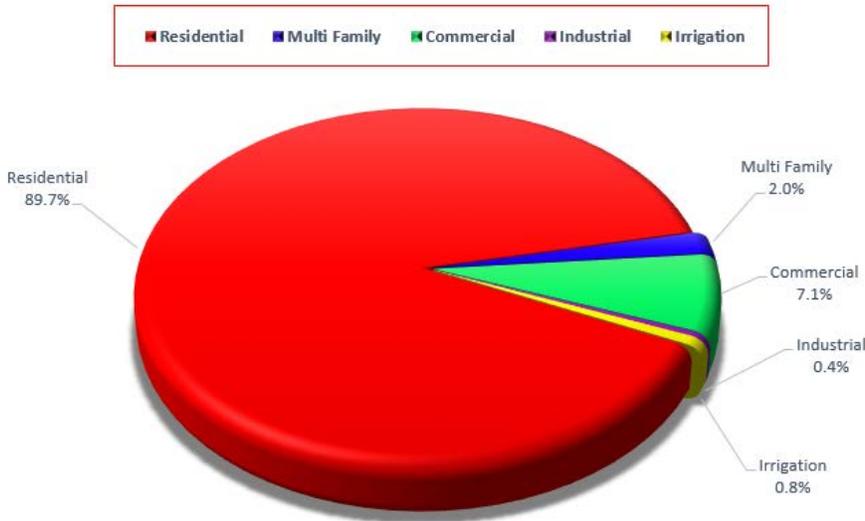


The City of Gainesville Department of Water Resources launched its **Help 2 Others (H<sub>2</sub>O) Round Up** program in early FY 2012. We partnered with the **Salvation Army's Project SHARE** in an effort to raise funds to assist those in need. City of Gainesville customers who choose to participate will have their utility bills rounded to the next whole dollar. These additional funds will be disbursed by the Salvation Army to fellow City of Gainesville utility customers facing financial hardship. The assistance will be used to help with water/sewer bills. All contributions are tax deductible.

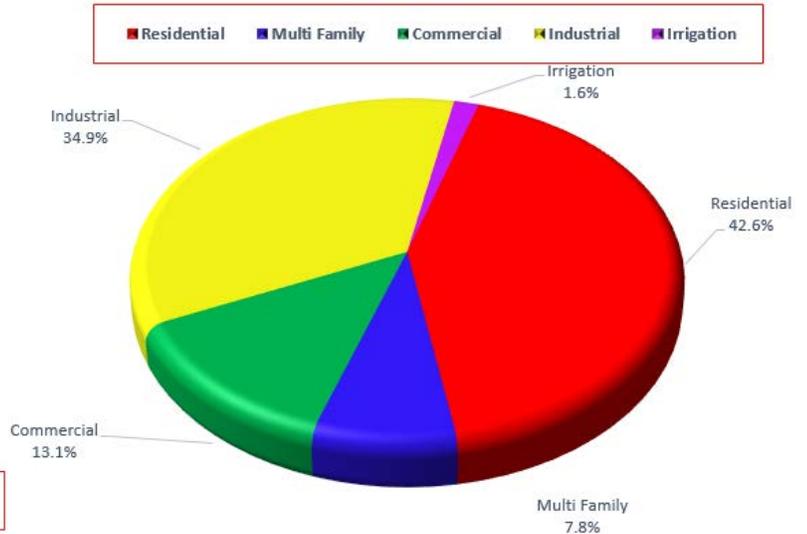
# Our Customers: Water

As of June 30, 2016, **49.1%** of our water revenue comes from our residential customers, who comprise **89.7%** of our customer base. General Industry, though it makes up **0.4%** of our water customers, continues to comprise **29.7%** of water revenue and **34.9%** of water usage.

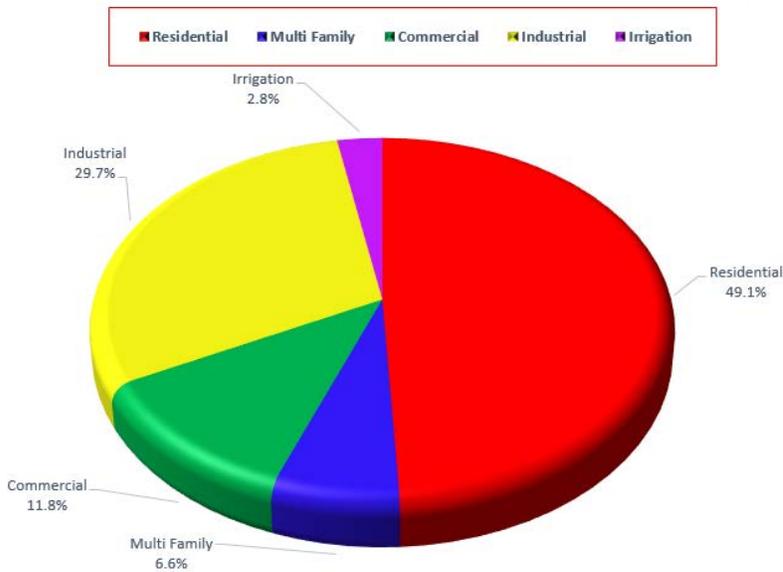
### Water Customers



### Water Use



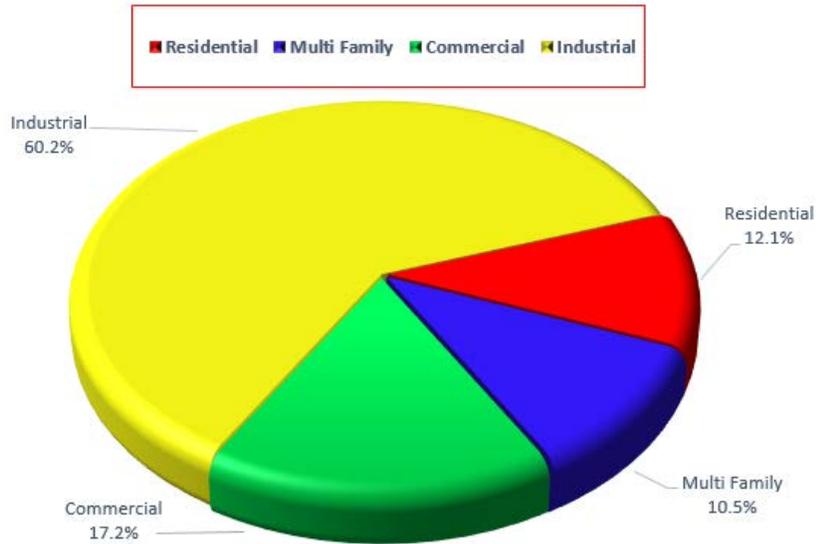
### Water Revenue



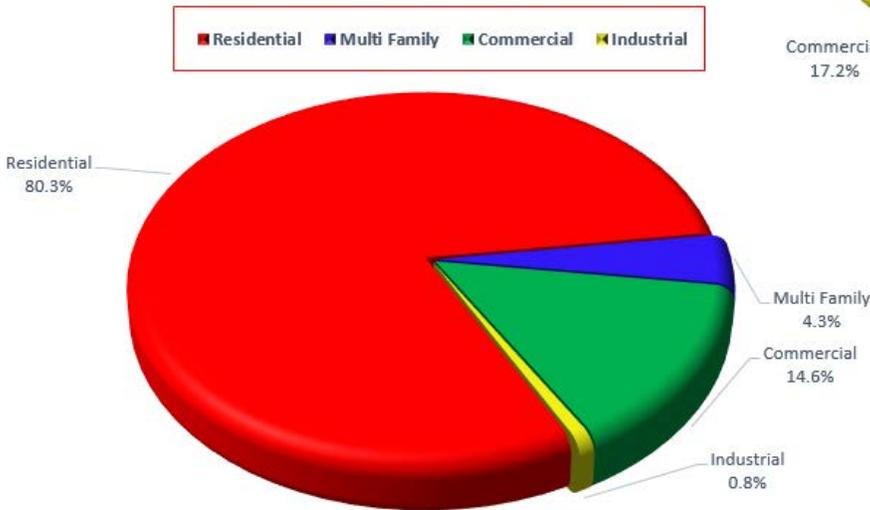
# Our Customers: Wastewater

General Industry continues to be the largest user of wastewater services with **60.2%** of total wastewater usage and **56.0%** of total wastewater revenue. Commercial is the next highest with **17.2%** of wastewater use and **17.1%** revenue. Eighty percent of wastewater customers are residential, but their usage accounts for only **12.1%**. The revenue comparison is a slightly lower percentage at **10%** due to the fact that residential wastewater customers are billed for less than 100 % of water usage with a cap on the billable volume.

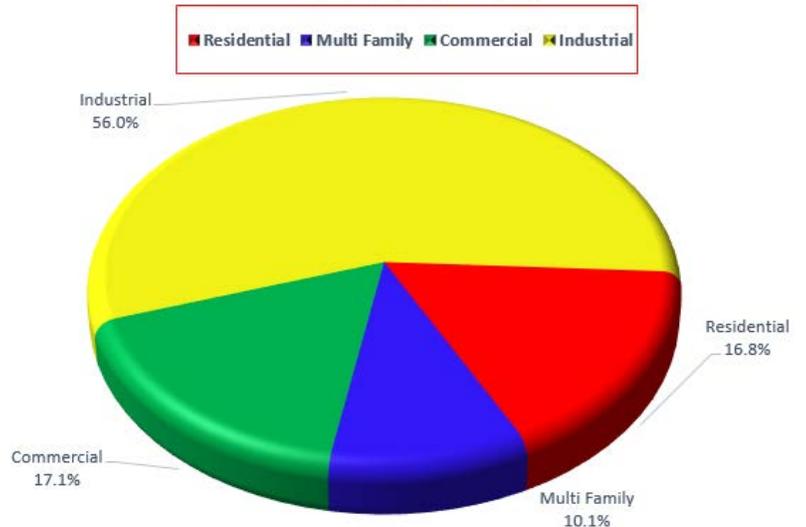
### Wastewater Use



### Wastewater Customers



### Wastewater Revenue



# **FINANCE & ADMINISTRATION**

**MISSION STATEMENT:** *To provide a stable financial position and administrative support for daily operations.*

## **SCOPE OF SERVICES**

The **Finance and Administration** section has fourteen (**13**) authorized positions which include the Director, Assistant Director, Finance & Administration Division Manager, Accounts Payable, Customer Advocates, Inventory Control, Payroll, Purchasing and Warehouse personnel.

The group is responsible for financial planning for the Five-Year Capital Improvements Program, preparation and management of the operating and capital equipment budgets, performing cost-of-services analysis, evaluation of customer service “best practices,” payroll and personnel support, purchasing and inventory control, fleet and asset management, accounts payable, policy enforcement, utility debt collection, management of the 18,000 square foot administration building and the warehouse facility, and preparation of the annual report and other publications. This staff works closely with the Director in establishing long-term directions and goals for the Department of Water Resources , developing departmental policies and municipal codes, and providing essential support to all divisions.

- Accounts Payable staff processed **7,427** invoices and **374** requisitions in FY16.
- Purchasing staff processed **348** requests for bids and proposals in FY16.



Purchasing and Warehouse Employees



# Automated Metering: The Smart Choice

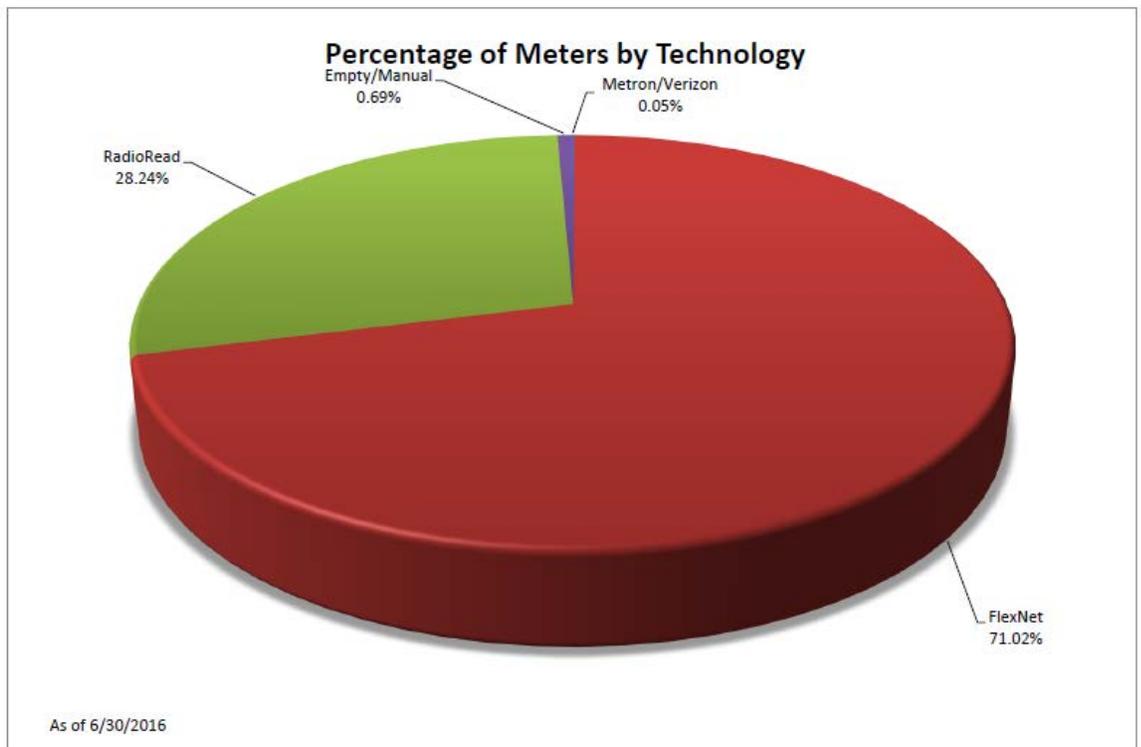
The City of Gainesville currently has approximately 53,000 meters installed throughout its system. Over 99% of these meters are now automated in some form, whether it is Sensus FlexNet® or RadioRead™ technology. Seventy-one percent of these meters are equipped with FlexNet® technology, the result of the Automated Meter Reading Project, which allows the meters to be read remotely through one of four Tower Gateway Base Stations and transmitted through a database server to the utility. This enables staff to continuously view hourly meter activity to monitor usage patterns and provide proactive leak detection. Customers are notified of potential leaks, saving them money and protecting our system from unnecessary water loss. RadioRead™, or drive-by automated reading system, reduces reading times and the Utility's costs by decreasing the amount spent on fuel to manually read meters.



FlexNet Tower



FlexNet 520M



# FY 16 Financial Highlights

CITY OF GAINESVILLE  
**DEPARTMENT OF WATER RESOURCES**  
 SUMMARY FINANCIAL STATEMENT  
 For the twelve months ended June 30, 2016

## Interim Statements

% of Year Remaining = 0.00%

|   | Revised<br>Budget  | Jun-16<br>YTD Actual | Remaining<br>Balance | %             |
|---|--------------------|----------------------|----------------------|---------------|
| <b>Revenues</b>                                   |                    |                      |                      |               |
| Intergovernmental                                 | -                  | 44,931               | (44,931)             |               |
| Charges for services                              | 59,609,500         | 66,628,037           | (7,018,537)          |               |
| Investment income                                 | 10,000             | 47,361               | (37,361)             |               |
| Miscellaneous                                     | 38,400             | 250,708              | (212,308)            |               |
| Other financing sources/transfers in              | 2,000              | 2,705                | (705)                |               |
| Transfers from E&R (Connection Fees)              | 2,506,629          | 4,004,791            | (1,498,162)          |               |
| <b>Total Revenues</b>                             | <b>62,166,529</b>  | <b>70,978,533</b>    | <b>(8,812,004)</b>   |               |
| <b>Expenses</b>                                   |                    |                      |                      |               |
| Riverside Water Treatment Facility                | 2,588,672          | 2,216,184            | 372,488              | 14.39%        |
| Lakeside Water Treatment Facility                 | 2,233,179          | 1,974,803            | 258,376              | 11.57%        |
| Water Distribution                                | 3,944,247          | 3,147,220            | 797,027              | 20.21%        |
| Flat Creek Water Reclamation Facility             | 3,727,965          | 3,336,269            | 391,696              | 10.51%        |
| Linwood Water Reclamation Facility                | 2,523,757          | 2,316,911            | 206,846              | 8.20%         |
| Maintenance Services                              | 2,736,760          | 2,493,262            | 243,498              | 8.90%         |
| Sanitary Sewer                                    | 2,381,732          | 1,684,536            | 697,196              | 29.27%        |
| Environmental Compliance and Permitting           | 1,812,366          | 1,395,800            | 416,566              | 22.98%        |
| Engineering and Construction Services             | 2,418,330          | 1,769,558            | 648,772              | 26.83%        |
| Customer Account Services                         | 3,038,686          | 2,390,558            | 648,128              | 21.33%        |
| Finance and Administration                        | 2,092,059          | 1,629,280            | 462,779              | 22.12%        |
| <b>Subtotal - Expenses</b>                        | <b>29,497,753</b>  | <b>24,354,381</b>    | <b>5,143,372</b>     | <b>17.44%</b> |
| Bad Debt Expense                                  | -                  | 4,588                | (4,588)              |               |
| Contingency                                       | 361,970            | -                    | 361,970              | 100.00%       |
| Debt service                                      | 20,071,544         | 19,753,760           | 317,784              | 1.58%         |
| Other financing uses/transfers out                | 16,166,736         | 3,773,641            | 12,393,095           | 76.66%        |
| <b>Total Expenses</b>                             | <b>66,098,003</b>  | <b>47,886,370</b>    | <b>18,211,633</b>    | <b>27.55%</b> |
| <b>Excess (Deficiency) Revenues over Expenses</b> | <b>(3,931,474)</b> | <b>23,092,163</b>    | <b>UNAUDITED</b>     |               |
| <b>Budgeted Fund Balance 6/30/15</b>              | <b>3,931,474</b>   |                      |                      |               |
|   | <b>-</b>           |                      |                      |               |

# WATER AND WASTEWATER TREATMENT SERVICES DIVISION

The Water and Wastewater Treatment Services Division is comprised of three (3) sectional groups, categorized as: **Water Treatment** (Riverside and Lakeside), **Water Reclamation** (Flat Creek and Linwood), and **Maintenance Services**.

The **Water Treatment** group is responsible for pumping raw water from Lake Lanier, the treatment of that water to national drinking water standards at the Riverside and Lakeside Water Treatment Plants (WTP), and the distribution of the finished treated water into the system's water storage facilities.

The **Water Reclamation** group treats all of the collected wastewater to environmentally safe discharge standards by utilizing the treatment capacity made available at the Flat Creek and Linwood Water Reclamation Facilities (WRF)s.

The **Maintenance Services** group is responsible for maintaining all equipment located within the treatment plants, the operation and maintenance of sewer pump stations and potable water booster pump stations, while also providing groundskeeping services to miscellaneous areas of the Department of Water Resources, along with sewer right-of-way maintenance and inspections.



Steve Martin is servicing an ultraviolet disinfection system at our Linwood.



Groundskeeping Truck



The installation of a trash trap.



Scott Baum is the Assistant Plant Manager of the Linwood

# **WATER TREATMENT**

**MISSION STATEMENT:** *To provide the highest quality drinking water in the most resourceful and economical way.*

## **SCOPE OF SERVICES**

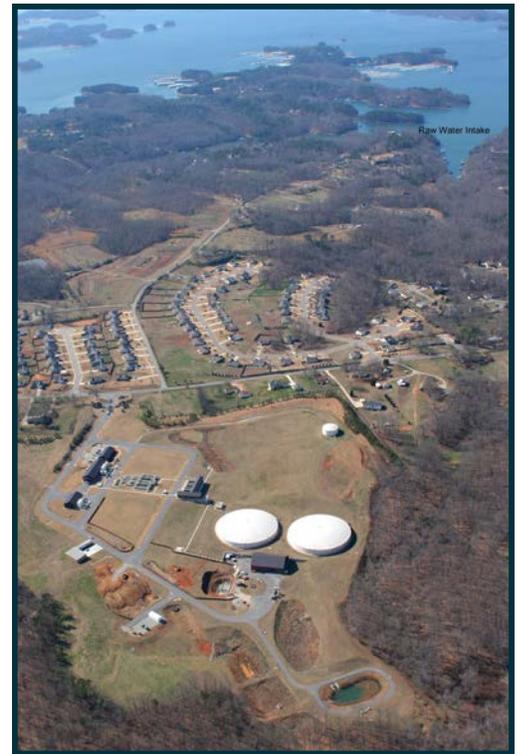
The **Water Treatment** group consists of the Water Operations Superintendent, two (2) Plant Managers, and twenty-eight (27) other staff members. This group is primarily responsible for the daily operations of the Riverside and Lakeside Water Treatment Plants (WTPs) and “finished” (i.e., treated) water storage facilities.

## **FACILITIES**

The **Riverside WTP** has the capacity to produce and is permitted to process 25 Million Gallons per Day (MGD). The **Lakeside WTP** provides another 10 MGD of potable water for the community. Water is pumped from Lake Lanier to both treatment facilities and treated to be safe for residential, commercial, and industrial use. A high quality, uninterrupted supply of potable water free of objectionable turbidity, color, taste, and odor is produced.



**Riverside Water Treatment Plant**



**Lakeside Water Treatment Plant**

Treated water is stored in three clear wells at the Riverside WTP with a total combined on-site storage capacity of 12 MG. At the Lakeside WTP, there are two 5 MG clear wells for a total combined on-site storage capacity of 10 MG. In the distribution system, there is one 5 MG ground level storage reservoir (known as the High Street Tank). Six (6) elevated storage tanks provide additional storage capacity of 3.75 MG of finished water. The City has a total combined system storage capacity of 30.75 MG. This is enough stored water to serve customers for almost two days at current usage levels.

## **Our staff are our heroes**

Our current management staff has a combined total of over 133 years of experience in the industry. Our people are a great asset.



Assistant Plant Manager Belinda Folkes and Plant manager Bill Wilson.

Stephen Douglas

Water Operation  
Superintendent



Assistant Plant Manager James Jones and Plant Manager Scott Benefield.



Damond Castleberry one of our shift supervisors. This year he was awarded a "You're the Reason" from the City of Gainesville. Damond has almost 16 years of experience.

We must be constantly training and mentoring our staff. Facilities must be maintained for proper operation. Our personnel must also be maintained. New staff members must be trained to operate and maintain our facilities. They must also obtain the necessary license required by the state. Established operators must be obtain licenses up to the class I operator license in order to advance in their career. Those who show an interest in moving into a supervisory position are offered additional training and mentorship. One of our goals is to provide training in proper management prior to their obtaining a management position when possible. We must tend to the continual development of our staff if we are to maintain a professional and well operated organization.

According to a recent report by the Water Research Foundation; it is “projected that in the next ten years, 37% of water utility workers will retire”. This matches our analysis of our anticipated staffing changes. Also it is projected that there will a need for 45% more staff due to new regulations, infrastructure growth, security challenges and customer demands. Therefore we must prepare for the changes in our industry and anticipated personnel needs.

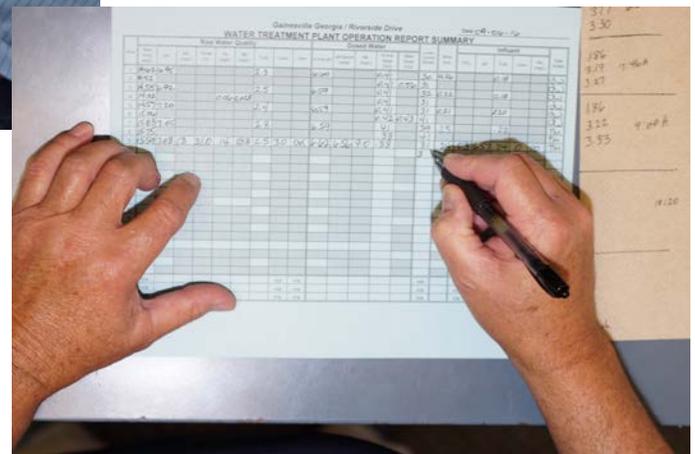


December 2015 Denise Mobley retired after 25 years with the City of Gainesville. The industry average is 24 years with the same organization at retirement. Denise was our assistant plant manager at the Riverside Water treatment Plant.

Joseph Wingo calibrates a chemical feed pump.



During a day we will run over 300 tests on the water.



# Riverside and Lakeside Statistical Indicators

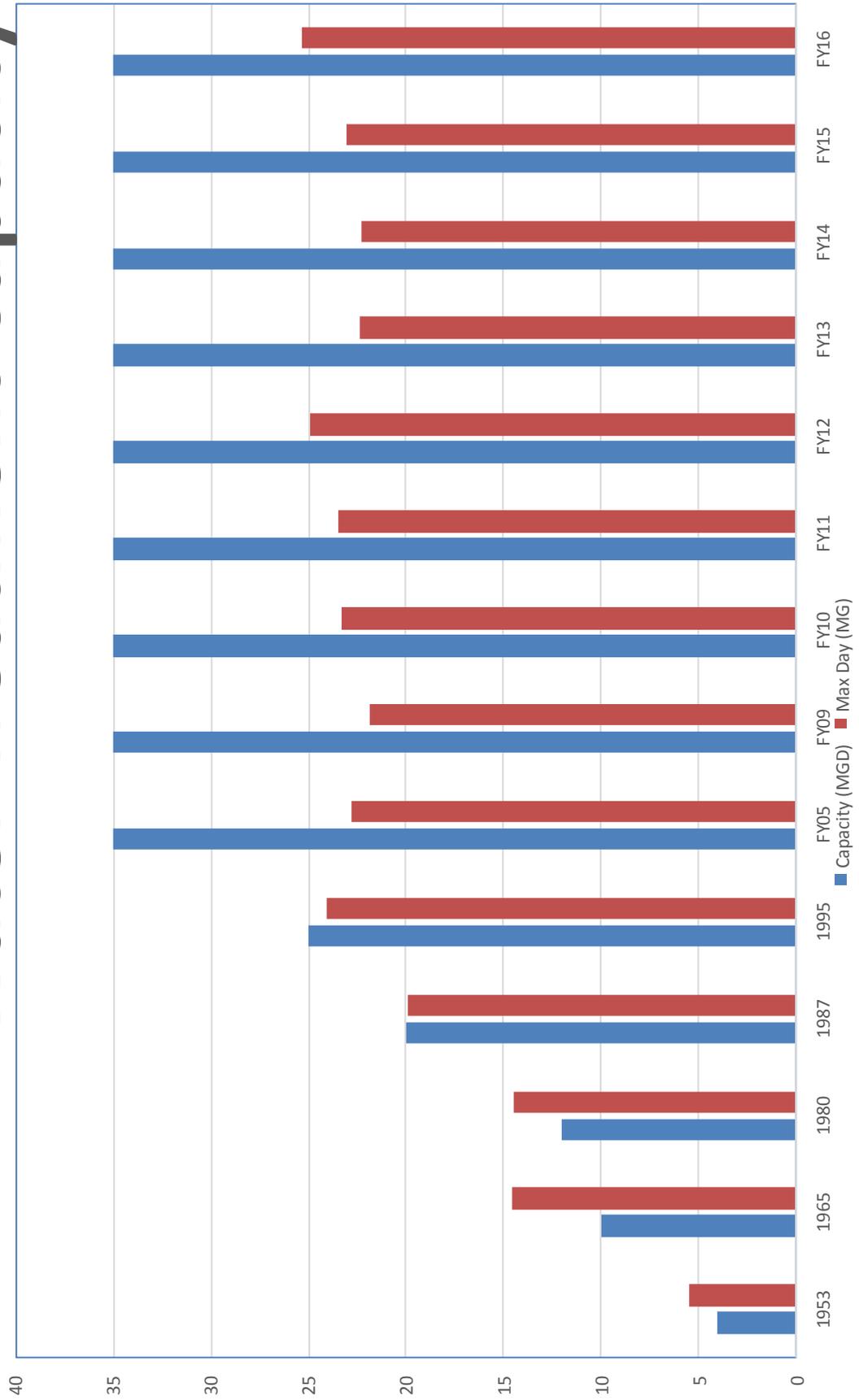
|  | FY13           | FY14           | FY15           | FY16           |
|--|----------------|----------------|----------------|----------------|
| <b>Filtering Capacity (MGD)</b>            | <b>35</b>      | <b>35</b>      | <b>35</b>      | <b>35</b>      |
| <b>Filtering Permitted Capacity (MGD)</b>  | <b>35</b>      | <b>35</b>      | <b>35</b>      | <b>35</b>      |
| <b>PERMITTED—Raw Water Withdrawal</b>      |                |                |                |                |
| <b>Maximum 24 Hour (MGD)</b>               | <b>35</b>      | <b>35</b>      | <b>35</b>      | <b>35</b>      |
| <b>Monthly Average not to Exceed (MGD)</b> | <b>30</b>      | <b>30</b>      | <b>30</b>      | <b>30</b>      |
| <b>ACTUAL—Raw Water Withdrawal</b>         |                |                |                |                |
| <b>Maximum 24 Hour (MGD)</b>               |                |                |                |                |
| <b>Riverside</b>                           | <b>15.50</b>   | <b>15.50</b>   | <b>16.00</b>   | <b>16.00</b>   |
| <b>Lakeside</b>                            | <b>10.23</b>   | <b>10.21</b>   | <b>10.32</b>   | <b>10.31</b>   |
| <b>Monthly Average (MGD)</b>               | <b>17.20</b>   | <b>17.07</b>   | <b>17.80</b>   | <b>17.42</b>   |
| <b>Total—Raw Water Withdrawal (MG)</b>     | <b>6,262.3</b> | <b>6,231.0</b> | <b>6,498.0</b> | <b>6,358.3</b> |
|  |                |                |                |                |
| <b>Pumped To System</b>                    |                |                |                |                |
| <b>Max Day (MG)</b>                        | <b>22.35</b>   | <b>22.26</b>   | <b>23.05</b>   | <b>25.31</b>   |
| <b>Average Day (MG)</b>                    | <b>16.73</b>   | <b>16.68</b>   | <b>17.64</b>   | <b>17.64</b>   |
| <b>TOTAL (MG)</b>                          | <b>6,106.5</b> | <b>6,086.4</b> | <b>6,438.6</b> | <b>6,438.6</b> |
|  |                |                |                |                |
| <b>Sludge Disposal (Tons)</b>              | <b>945</b>     | <b>941</b>     | <b>915</b>     | <b>882</b>     |



MGD = Million Gallons Per Day MG = Million Gallons

The following is a chart indicating the annual average treatment plant capacities of the facilities and the maximum day water treated.

# Water Treatment Capacity



# **WATER RECLAMATION**

**MISSION STATEMENT:** *To protect water quality by treating wastewater safely and effectively.*

## **SCOPE OF SERVICES**

The Water Reclamation facilities (WRF) include the Flat Creek and Linwood WRF's. This group is also responsible for the monitoring and polling of sixty (60) wastewater pump stations, and responds to all after-hour emergency calls regarding water and wastewater.

## **FACILITIES:**

The **Flat Creek WRF**, with the capacity 12.0 Million Gallons per Day (MGD), is the larger of the two (2) WRF's in the system. Treatment at Flat Creek includes grit removal, primary treatment with dissolved air floatation, activated sludge biological treatment, clarification, and disinfection by ultraviolet radiation. Residual solids from the treatment process are thickened in settling tanks and de-watered using plate-and-frame type presses. The dewatered residuals are transported to ERTH Products, LLC, a privately owned composting facility in Plains, Georgia. At the ERTH facility, environmentally-friendly composting of these residual solids and peanut hulls takes place. This compost is later sold as a soil conditioner.



**Flat Creek WRF**

The **Linwood WRF** is a new Advanced Tertiary Treatment facility, which includes membrane filtration. This 5.0 MGD treatment facility provides the additional treatment necessary to comply with new Lake Lanier discharge standards through the use of activated sludge biological treatment and disinfection by ultraviolet radiation. Residual solids from the treatment process are thickened and de-watered using a belt press. The dewatered residuals are transported to ERTH Products, where it is composted and sold as a soil conditioner.



**Linwood WRF**

## **Accomplishments:**

The City of Gainesville's Department of Water Resources continually seeks ways to enhance operational and cost efficiency. The following are improvements implemented by the water reclamation group in FY 2016:

### **Flat Creek**

- Power cost at the Flat Creek Water Reclamation Facility increased by 2.2 % compared to FY15 in part by the influent flows were also increased by 3.1 %. Although Georgia Power had peak kilowatt hour (kWh) prices as high as 83 cents during high energy demand peak hours throughout the year, staff was able to maintain an average cost throughout the year of 5.7 cents per kWh and paid a peak price of only 9.2 cents per kWh. This was accomplished by decreasing our flow through the facility, and cutting back on select high energy consumption equipment during peak high energy cost hours.
- Chemical usage cost overall at the Flat Creek Water Reclamation Facility was 0.13 % Less in FY16 compared to FY15, and that is really good considering the influent flows to the plant this year were 3.1 % higher as stated above.

### **Linwood**

- Power cost at the Linwood Water Reclamation Facility (WRF) decreased by 8.1 % compared to FY15 although influent flows to the facility were pretty much the same. As was the case at the Flat Creek WRF, Linwood had kWh prices as high as 83 cents during high energy demand hours, but were also able to hold their average kWh price to 7 cents per kWh, and paid only a peak price of 10.5 cents throughout the fiscal year of 2016. This was accomplished by plant aeration processes being cut back by 66 % during high energy demand hours with higher prices from Georgia Power.
- Chemical usage cost overall at the Linwood WRF increased by 14.4 % in FY16 compared to FY15 mostly due to an increase in influent contaminants requiring a higher dosage of chemicals to be treated.

When fully staffed, we continue cross training our relief operators between the two facilities. Having someone trained to fill in on short notice reduces unscheduled overtime. These efforts paid off as we saw positive results in a decrease in overtime of 14.5 % at the Flat Creek Water Reclamation Facility (WRF), and an 8.4% decrease at the Linwood WRF.

Even though staffing has been an issue this year, through dedicated staff and succession planning, both facilities have maintained a standard operational status.

During this fiscal year, more than 11 tours have been conducted at our reclamation facilities consisting of over 300 attendees ranging from local schools, to college classes, to civic organizations and even to local citizens.

Yes, we even made a trip to the kindergarten class.



Linwood Water Reclamation Facilities Assistant Plant Manager Scott Baum

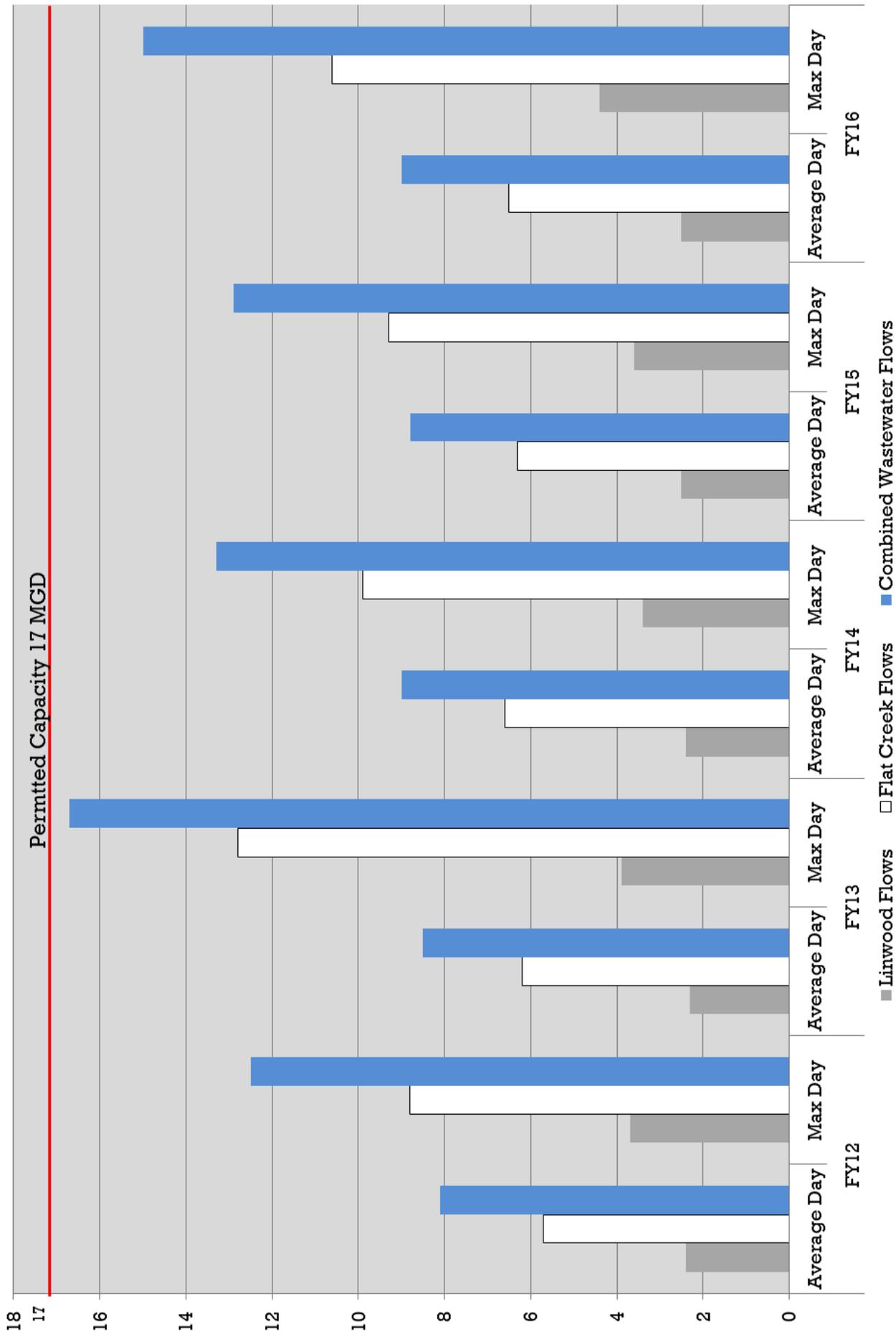
# Flat Creek and Linwood Statistical Indicators

|  | FY13  | FY14  | FY15  | FY16  |
|--|-------|-------|-------|-------|
| <b>Flat Creek Permitted Discharge Limits</b>   |       |       |       |       |
| Flat Creek Weekly Avg. not to exceed (MGD)     | 15    | 15    | 15    | 15    |
| Flat Creek Monthly Avg. not to exceed (MGD)    | 12    | 12    | 12    | 12    |
| <hr/>  |       |       |       |       |
| Flat Creek – Max. Day Flow (MG)                | 12.8  | 12.8  | 9.3   | 10.6  |
| Flat Creek – Avg. Day Flow (MG)                | 6.2   | 6.2   | 6.3   | 6.5   |
| Flat Creek – Total Treated (MG)                | 2,269 | 2,390 | 2,307 | 2,376 |
| Flat Creek – Biosolids Disposal (Dry Tons)     | 2,485 | 2,910 | 3,055 | 3,882 |
| <hr/>  |       |       |       |       |
| <b>Linwood Permitted Discharge Limits</b>      |       |       |       |       |
| Linwood Weekly Avg. not to exceed (MGD)        | 6.25  | 6.25  | 6.25  | 6.25  |
| Linwood Monthly Avg. not to exceed (MGD)       | 5     | 5     | 5     | 5     |
| <hr/>  |       |       |       |       |
| Linwood – Max. Day Flow (MG)                   | 3.9   | 3.4   | 3.6   | 4.4   |
| Linwood – Avg. Day Flow (MG)                   | 2.3   | 2.4   | 2.5   | 2.5   |
| Linwood – Total Treated (MG)                   | 836   | 857   | 915   | 941   |
| Linwood – Biosolids Disposal (Dry Tons)        | 391   | 388   | 355   | 393   |
| <hr/>  |       |       |       |       |
| Combined Facility Total Treated (MG) -----     | 3,105 | 3,247 | 3,222 | 3,318 |
| Combined Total Biosolids Removal (Dry Tons)--- | 2,876 | 3,298 | 3,410 | 4,275 |



Linwood WRF

# Fiscal Year Wastewater Flows (2012 - 2016)



## **2016 Fiscal Year Goals & Objectives**

### **Flat Creek:**

#### **Utilize new technologies to improve efficiencies and reduce cost**

- Flat Creek Water Reclamation Facility will install during FY16 inline analytical equipment for phosphorus monitoring thus providing more efficient alum feeds reducing chemical cost.
  - According to our study of eight months' worth of data prior to the equipment installation, and eight months after the installation, cost per pound of phosphorus removal was down 7.9 %. We are looking for more saving throughout FY17 as we fine tune the equipment.

#### **Increase public awareness of city operations, financial positions and programs.**

- Flat Creek Water Reclamation Facility will conduct a trial of ultrasonic algae control in the effluent water feature as an attempt to improve visibility.
  - Research on the ultrasonic algae control system showed little chance of it being feasible on the type of algae we had in the water feature.

#### **Promote beautification of public areas with an eye on internal facilities.**

- Flat Creek Water Reclamation Facility will contract a local landscape contractor during FY16 to create and install an aesthetically pleasing landscape design on the steep embankment at the head works of the Flat Creek Plant. This will also eliminate mowing the steep hill making it less of a safety hazard.
  - This project has been completed providing a safer environment for maintaining the grounds as well as enhancing the aesthetics of the property.



### **Linwood:**

#### **Utilize new technologies to improve efficiencies and reduce costs.**

- Linwood Water Reclamation Facility will evaluate during FY16 the usage of Magnesium Hydroxide (Thiogard Chemical) versus Sodium Hydroxide for chemical comparison in performance and cost.
  - In comparing the cost of four months before versus after the change from Sodium Hydroxide to Magnesium Hydroxide, there was a 13.6 % increase in cost per pound of Ammonia removal from the system. The amount of ammonia entering this system creates a challenge on operation. We feel after installation of a smaller pump for this chemical feed, this number will decrease to or below the previous year. Current pump will not dial down low enough for the correct speed to be appropriate with the new chemical.

#### **Increase public awareness of City operations, financial position and programs.**

- Linwood Water Reclamation Facility will host an open house during FY16 to demonstrate the operations and efficiency of the Linwood WRF.
  - Though the turnout was low at the open house held on June 3, 2016, those that attended seemed to be pleased and impressed with the facility.

#### **Promote beautification of public areas with an eye on internal facilities.**

- Linwood Water Reclamation Facility will clean and reseal the pavilion at our facility during FY16 to enhance its external appearance.
  - This project has been completed, and the aesthetic quality of the area has been enhanced and utilized during employee events.

# **MAINTENANCE SERVICES**

**MISSION STATEMENT:** To efficiently maintain all Water Resources plants, pump stations, and buildings.

## **SCOPE OF SERVICES**

The maintenance department is responsible for maintaining the equipment inside both water reclamation plants, both water treatment plants, all sewer pump stations, water booster stations, all elevated storage tanks, and the DWR main office building. This involves mechanical, electrical, HVAC, instrumentation and controls, plumbing, carpentry, and various other tasks as necessary. The department also has a grounds keeping section that maintains grounds at all pump stations and various other properties the Department of Water Resources owns.



Shann Franklin and Chris Thornhill teaching citizens at the “Ask a Plumber” workshop

The Maintenance Department has continued building its database through the TMA maintenance software program. The implementation of iPads for work request and preventive maintenance tracking has been a huge success. In FY 16 the department purchased a new crane truck, a thermal imager, and a laser alignment tool to increase their capabilities in house and reduce the need for contracting specialized jobs.. As technology continues to advance we strive to better equip our employees with tools and training so that we may better serve the City of Gainesville.

**FY 16 Statistical Indicators:**

- Total Repair Service Calls = 869
- Total PM Work Orders = 2,022
- After Hours Emergency Calls = 236



Ryan Satterfield and Mickey Durden attending a Gorman-Rupp pump training class.

# ENVIRONMENTAL COMPLIANCE

The **Environmental Compliance** group is responsible for the city's water quality laboratory, the industrial pretreatment program, commercial wastewater management, environmental monitoring program, forestry management, public education program, water conservation program and various other projects and programs as assigned. The Environmental Compliance offices and staff are located in the Environmental Services Laboratory at 2641 Old Flowery Branch Road, Gainesville, GA 30504.

**MISSION STATEMENT:** *Provide first rate quality assurance through management of water resources.*

## SCOPE OF SERVICES

The **Environmental Compliance** staff consists of a total of **18** authorized positions working in five major areas of quality control and quality assurance. These programs support the successful operation of the Department's water and wastewater treatment plants, help to ensure the quality of drinking water to the customers, and provide for the protection and improvement of the community's water resources. The staff also endeavors to efficiently assist and educate residential and commercial customers, as well as the general public.

The **Environmental Compliance** group manages the City's Water Quality Laboratory, Industrial Pretreatment Program, Environmental Monitoring Program, Water Conservation Program and various other projects and programs as necessary to provide support for the PUD. **The Following is a summary of responsibilities for this group:**

- The **Laboratory** staff provides quality and legally defensible analytical services to the Environmental Compliance section, other divisions of the PUD and other departments of the City of Gainesville. All tests are conducted in accordance with the United States Environmental Protection Agency (US EPA) and Georgia Environmental Protection Division (GA EPD) regulations by following Standard Methods for the Examination of Water and Wastewater and American Society for Testing Methods. Laboratory services help to ensure the high quality of Gainesville's drinking water and that wastewater operations are in compliance with all state and federal regulations. The laboratory staff also provides water testing services to the City of Gainesville, Hall County and surrounding county residents.



- A. Jeanette Bales is running Turbidity Samples.**
- B. Tina Whisnant is running Ammonia samples.**
- C. Rebecca Hee is running BOD test on samples for the Water Reclamation Facilities.**

- The **Industrial Pretreatment** section administers the Industrial Pretreatment Program as mandated by the Federal Clean Water Act. Local businesses and industries are regulated and educated concerning wastewater discharges and changing federal, state and local wastewater discharge requirements. This group also inspects and monitors these discharges in order to protect the wastewater treatment plants, workers, sewer system and receiving streams. Gainesville's Fats, Oils, and Grease (FOG) program also resides under the umbrella of the Industrial Pretreatment section. This program manages the maintenance of facilities and disposal of commercial waste from commercial users of the collection system. This program also coordinates with designers during the preconstruction process of commercial and industrial facilities.

- The **Environmental Monitoring** group uses an array of methods to determine stream quality and ultimately watershed health. They are:

- Visual inspections, chemical and microbiological sampling, quarterly stream walks, biological monitoring, pond inspections
- public awareness, education, participation and outreach (presentations, Georgia Adopt A Stream, festivals)



- This group provides a quality assurance function for Gainesville's wastewater facilities and collection system. They initiate required items for the City's Watershed Management Plan and Municipal Separate Storm Sewer System (MS4) Notice of Intent (NOI). They participate with the Community Watershed Assessment Project, Upper Chattahoochee Basin Group and facilitating the Metropolitan North Georgia Water Planning District's (MNGWPD) action items.

- The **Water Conservation Program** promotes and provides guidance, information and programs for wise use of Gainesville's water supply. Some but not all of these items are:

- The State of Georgia's outdoor water use schedule.
- Overseeing and implementing the MNGWPD water conservation plan (ie. water assessments, plumbing retrofit program, workshops).
- Providing an annual update to GaEPD on Gainesville's progress to decrease Water Loss.

**A. One of many ponds staff performs yearly inspections on.**

**B. Kinsey Hughes, Commercial Wastewater Inspector, looks at a grease trap to make sure it is functioning properly.**

**C. A donation of rain barrels to continue to provide for residents.**



| <b>Environmental Compliance FY16 Statistical Indicators</b> |               |
|---|---------------|
| # of Lab Samples Analyzed                                   | <b>9,257</b>  |
| Total Analyses Conducted by Lab Services                    | <b>35,945</b> |
| Drinking Water/New Line Samples                             | <b>1,943</b>  |
| Pretreatment Program Compliance Inspections                 | <b>2,975</b>  |
| Environmental Site Inspections                              | <b>3,109</b>  |
| Environmental Samples                                       | <b>983</b>    |
| Public Presentations  | <b>163</b>    |
| Plumbing Retrofit Rebates (Single/Multi.)                   | <b>162/4</b>  |

- \* In addition to the formal annual inspections, an additional **2,975** visits were made to industrial and commercial facilities to inspect and sample for compliance with the pretreatment program. The total number of visits has decreased due to a change in our SOP to reduce our cost, while maintaining the same level of performance.
- \* The Fats Oils and Grease (FOG) program tracks **308** facilities, primarily restaurants, which use grease traps as their only pretreatment of wastewater prior to discharge to the City’s collection system. Additional FOG accomplishments for FY16 included the inspection and permitting of **44** commercial waste transportation vehicles.



### **FY 2016 Highlights**

- \* In September, the annual Rivers Alive event was held. Some ninety five volunteers removed approximately 1,000 pounds of litter from the Flat Creek Watershed.
- \* The Band-A-Long was installed in December. An inspection is done weekly for clean out.
- \* Flat Creek Restoration continued with staff working with the Corp of Engineers for the Section 206 grant.
- \* Jennifer Flowers was recognized as “Champion of the Year” in February by the Hall County Green Alliance.
- \* Lola and Captain participated in the Water Drop Dash for Drinking Water Week for the MNGWPD in March.
- \* Waterfest was a success at West Hall Middle School in May with a day of environmental awareness and fun. This is a collaborative effort among multiple Departments within the City of Gainesville.

# ENGINEERING AND CONSTRUCTION SERVICES DIVISION

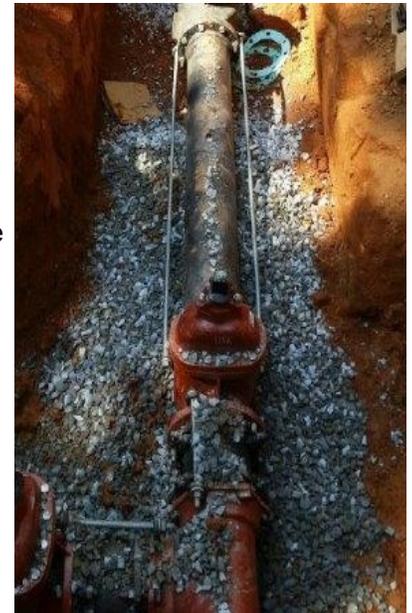
The Engineering and Construction Services Division began the fiscal year with 24 full-time authorized positions. These positions may be broadly categorized as engineers, technicians, inspectors, permitting staff, and support staff.

**MISSION STATEMENT:** *To effectively execute assigned projects to meet the defined needs of our community.*

## **SCOPE OF SERVICES**

The Engineering and Construction Services Division not only represents the Department of Water Resources (DWR) but also the City as a whole on all Capital Improvements Projects (CIP) throughout design and construction, review and permitting of private development projects, and administration of the Backflow Prevention Program. The services provided by the group may be summarized as follows:

- In-house design, bidding, and construction services associated with water mains, sanitary sewer and storm water improvements
- Project management functions related to services provided by various consulting engineers
- Computerized water, wastewater and storm water systems mapping, graphical presentation, and geographic information system (GIS) management
- Archival functions associated with technical plans and documents for the DWR.
- Hydraulic analysis and overall planning activities associated with water and wastewater systems
- Construction management and inspection on all private developments that propose to connect to the City's water, wastewater and/or storm water systems
- Project concept and design, contract administration, construction management services of CIP for DWR, Public Works, Parks and Recreation, and other City departments as directed by the City Management from inception to completion of project. Project and construction management services are also provided for other local governments when required by intergovernmental agreement. These services are charged to the actual project to prevent Water Resources from subsidizing them.
- Transitioning of Stormwater functions into the Engineering and Construction Division from Public Works Engineering Department including Stormwater design and construction.
- Payment and reimbursement processing for all projects related to the CIP
- Maintenance of all financial records related to the CIP as well as construction contracts and records from project inception to completion.



### **Other functions consist of the following:**

- ◇ Periodic updating and maintaining water main, sanitary sewer and storm water extension and/or Replacement lists
- ◇ Field surveying
- ◇ Five-year CIP development and tracking
- ◇ Preparation of the Department's presentation at the annual workshop with the City Council
- ◇ Evaluation of new water, wastewater and storm water products to determine if they meet DWR standards
- ◇ Coordination and preparation of annual updates of the Department's Standard Specifications
- ◇ Negotiation and purchasing of land and easements required to construct projects; processing and maintaining associated documents, databases and files.

The **Permitting** group provides management of private development permitting and the **Backflow Prevention Program**. The Permitting group also provides assistance with in-house design and project management of sanitary sewer system replacement and extension projects. The following is a summary of responsibilities for this group:

**Permitting:**

- Review and permitting of all commercial, industrial, and residential developments which propose to connect to the City's water or wastewater systems to ensure compliance with the department's standards and specifications.
- Transitioning Stormwater plan review and permitting from Public Works to Public Utilities Department.
- Coordination activities with the Georgia Environmental Protection Division (GA EPD) associated with delegation of review compliance.
- Coordination activities with the Gainesville and Hall County Planning Departments for issuance of development permits through the City and the County plan review committees.
- Coordination activities associated with Gainesville and Hall County Building Inspections Departments and their issuance of Certificates of Occupancy (CO's) for projects that require PUD's inspections.
- Coordination activities with the Gainesville and Hall County Planning Departments concerning annexation requests for sanitary sewerage services, as well as rezoning and variance request activities.
- Preliminary investigation to determine water and/or wastewater systems connection feasibility for future private developments.
- Preparation of water and sanitary sewer availability letters.
- Easement acquisition associated with water and wastewater systems located within private development projects.
- Coordination of activities for inspection of approved private development projects.
- Review and approval of as-built drawings for newly constructed public water and wastewater systems.
- Review and approval of fire sprinkler system drawings and subsequent coordination with the billing office for applicable sprinkler system fees.
- Production and updating of development guidelines and associated plan review checklists.

**Backflow:**

- Inspection of new and existing backflow prevention device installations.
- Tracking of required annual backflow test reports.
- Tracking of City-approved backflow testers.
- Conduct monthly mail-out notifications to customers for any outstanding backflow prevention requirements.
- Production and updating of backflow prevention specifications and installation guidelines.
- Conduct inspections of private wells and reclaimed water systems for illegal cross-connection with City's water distribution system.
- Testing, maintaining and repairing existing backflow preventers on City facilities.
- Fire hydrant flow testing.



## **STATISTICAL INDICATORS:**

The following statistical indicators have been compiled to provide a more clear and quantifiable picture of the Engineering and Construction Services Division's accomplishments during FY16:

- Provided project management and construction management / resident engineering services on **15** capital improvement projects that were completed in FY16 and **39** on-going capital improvement projects for Gainesville's Public Utilities Department, Public Works Department, Administrative Services and Parks and Recreation Agency.
- Provided construction inspection and management for the following connections to the Department of Water Resources water and wastewater system:
  1. Approximately **11.17** miles of water main and **101** fire hydrants. These figures include capital improvement projects, private development water mains, private fire mains and private fire hydrants.
  2. Approximately **5.65** miles of gravity sanitary sewer, **130** new manholes and 0.41 miles of force main, and **1** sanitary sewer pumping station. These figures include capital improvement projects and private development projects.
- Completed scanning of approximately **1,750** plan sheets.
- Created approximately **20** graphical exhibits including DWR presentation for the annual Workshop with the City Council, Citizens Government Academy and Stormwater Advisory Group.
- Field located approximately 350 water and sanitary sewer features.
- FEMA Flood Maps Update - Notification to 330 City of Gainesville property owners and public meeting.
- Updated water and wastewater wall maps at various City Facilities.
- Implemented pilot projects to explore a formal Asset Management Program.
- Supplied various documents in regards to an Open Records Request concerning ongoing litigation related to the Tri-State Water Dispute between Georgia, Alabama, and Florida.



**Water Main Improvements Project**

# FY 2016 Water Main and Sanitary Sewer Construction and Abandonment History

| SANITARY SEWER CONSTRUCTION/ABANDONMENT HISTORY (CAPITAL PROJECTS ONLY) |  |                      |                                |                                  |                    |                              |
|---|--|----------------------|--------------------------------|----------------------------------|--------------------|------------------------------|
| YEAR  | Gravity Sewers Constructed/Rehabilitated (Miles) | Manholes Constructed | Force Main Constructed (Miles) | Gravity Sewers Abandoned (Miles) | Manholes Abandoned | Force Main Abandoned (Miles) |
| FY11  | 1.30   | 51                   | 2.31                           | 0.66                             | 14                 | 0.10                         |
| FY12  | 1.49   | 49                   | 1.01                           | 0                                | 0                  | 0.46                         |
| FY13  | 0.09   | 2                    | 0                              | 0                                | 0                  | 0.00                         |
| FY14  | 3.25   | 63                   | 0.51                           | 0.26                             | 8                  | 0.00                         |
| FY15  | 3.07   | 75                   | 0.54                           | 0                                | 0                  | 0.00                         |
| FY16  | 2.27   | 41                   | 0                              | 1.28                             | 13                 | 0.06                         |

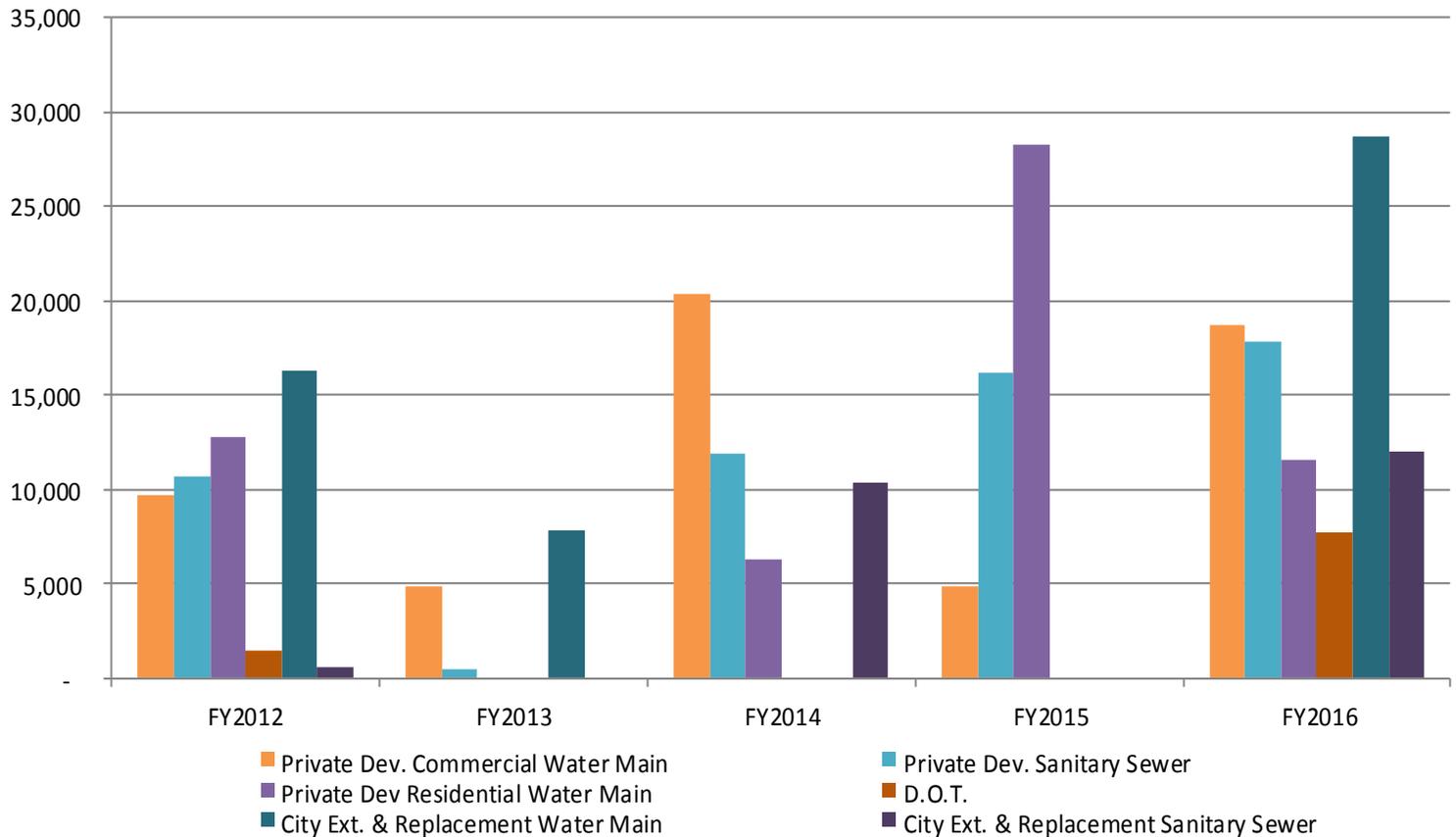
| WATER LINE CONSTRUCTION/ABANDONMENT HISTORY (CAPITAL PROJECTS) |                                 |                         |                               |
|--|---------------------------------|-------------------------|-------------------------------|
| YEAR   | Water Lines Constructed (Miles) | Fire Hydrants Installed | Water Lines Abandoned (Miles) |
| FY11   | 22.62                           | 165                     | 0.54                          |
| FY12   | 7.61                            | 73                      | 2.77                          |
| FY13   | 2.41                            | 30                      | 0.51                          |
| FY14   | 5.04                            | 62                      | 0.00                          |
| FY15   | 6.28                            | 63                      | 0.00                          |
| FY16   | 5.44                            | 31                      | 3.60                          |



**Water Main Improvement Project**

| TYPE OF INSTALLATION                   | FY 2012<br>TOTAL (FT.) | FY 2013<br>TOTAL (FT.) | FY 2014<br>TOTAL (FT.) | FY 2015<br>TOTAL (FT.) | FY 2016<br>TOTAL (FT.) |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|
| PRIVATE DEV. COMMERCIAL WATER MAIN     | 9,741                  | 4,872                  | 20,313                 | 4,884                  | 18,685                 |
| PRIVATE DEV. SANITARY SEWER            | 10,725                 | 485                    | 11,873                 | 16,221                 | 17,862                 |
| PRIVATE DEV. RESIDENTIAL WATER MAIN    | 12,720                 | 0                      | 6,275                  | 28,304                 | 11,591                 |
| D.O.T                                  | 1,415                  | 0                      | 0                      | 0                      | 7,756                  |
| CITY EXT. & REPLACEMENT WATER MAIN     | 16,289                 | 7,829                  | 0                      | 0                      | 28,715                 |
| CITY EXT. & REPLACEMENT SANITARY SEWER | 530                    | 0                      | 10,348                 | 0                      | 11,996                 |

### Installed Water and Sewer Mains by Fiscal Year



## **PERMITTING FY16 STATISTICAL INDICATORS**

The following is the statistical indicator information for the **Permitting Group**:

- Reviewed **202** development plans and issued **144** development permits through City of Gainesville/Hall County Planning & Zoning Department.
- Reviewed **325** architectural drawings and **21** fire sprinkler system drawings.
- Reviewed and approved **322** proposed water service connections through the plan review and permitting process.
- Reviewed and approved **22** City of Oakwood, **4** Town of Braselton, **6** City of Flowery Branch and **3** City of Buford developments through direct permitting coordination with these jurisdictions.
- Reviewed **947** commercial building permits (**918** in unincorporated Hall County and Gainesville and **29** in Oakwood).
- Reviewed **32** applications for rezoning, variances, or annexations through the City of Gainesville's Planning and Appeals Board.
- Reviewed **89** applications for variances, conditional use, proposed amendments or rezonings through the Hall County Planning Commission.
- Forwarded **42** new construction projects to the Engineering and Construction Services Division. These projects required water and/or sanitary sewer construction inspections.
- Collected a total of **\$108,813.75** in fees for water and sanitary sewer inspections that were performed by the Construction Management Division personnel and for fire hydrant flow testing.
- Conducted **98** backflow preventer inspections.
- Received and logged **7,344** backflow preventer test reports.
- Issued **0** variances for backflow preventer installation locations.
- Issued **5,501** first, second, and third notices to existing customers with overdue or failed annual backflow prevention device test reports, and issued **473** notices to device testers to provide up-to-date calibration and certifications.
- Conducted **25** fire hydrant flow tests for proposed private developments.
- Reviewed and approved 29 development for compliance with City of Gainesville Stormwater/Erosion control regulations.

## **PROJECTS COMPLETED DURING FY16:**

- 1) FY13 Water Main Improvements Project.
- 2) FY15 Water Services Connections Project.
- 3) Water Tank Maintenance Project (2nd year of 2nd - 2 year contract).
- 4) State Route 284 Clarks Bridge Replacement Utility Relocation Project.
- 5) FY16 Cedar Creek Reservoir Dam Inspection and Identified Repairs.
- 6) Corrugated Metal Sanitary Sewer Replacement Project.
- 7) Pump Station # 23 Improvements Project.
- 8) Flat Creek Water Reclamation Facility Dissolved Air Flotation (DAF) Engineering Study.
- 9) Water and Wastewater System Population and Flow Projections Update.
- 10) Organized, Managed and Completed activities associated with the Departments Annual Workshop presentation for the City Council.
- 11) Flat Creek Bandalong Litter Trap Installation Project.
- 12) Woodlake Drive Stormwater Improvements Project .
- 13) Valley Road Stormwater Improvements Project.
- 14) Stormwater Management Program User-Free Proposal.
- 15) FY16 IT Master Plan



**Corrugated Metal Sanitary Sewer Replacement Project.**

## **ACTIVE PROJECTS MANAGED DURING FY16 BUT CARRIED FORWARD :**

- 1) Riverside Drive Water Treatment Plant Chemical System Upgrade Project.
- 2) Riverside Drive Water Treatment Plant Concrete Repair Project.
- 3) Water Distribution System Storage Tanks Maintenance Program.
- 4) FY14 Water Main Improvements Project.
- 5) FY16 Water Main Improvements Project - Phase 1 and Phase II.
- 6) FY16 Water Service Connections Project
- 7) Highland Drive Booster Pump Station Project.
- 8) High Street Booster Pump Station Improvements Project.
- 9) Cargill Sanitary Sewer Improvements Project - Phase II and III.
- 10) Linwood Water Reclamation Facility Bar Screen Project.
- 11) Flat Creek Water Reclamation Facility Bar Screen/Grit System/Flow Counts Upgrade Project.
- 12) Flat Creek Water Reclamation Facility Sludge Digester Repair.
- 13) FY16 Sanitary Sewer System Improvements Project.
- 14) State Route 11/U.S. 129 Athens Highway Utilities Relocation Project.
- 15) State Route 13/Atlanta Highway Utilities Relocation Project.
- 16) Spout Springs Road Utilities Relocation Project.
- 17) State Route 369/Browns Bridge Road Chattahoochee River Bridge Replacement Project.
- 18) State Route 53/Dawsonville Highway Chestatee River Bridge Replacement Project
- 19) State Route 347/Friendship (Lanier Islands Parkway) and Thompsons Mill Road Utilities Relocation Project.
- 20) Lanier Island Parkway Utilities Relocation Project (McEver Road to Lake Lanier Islands).
- 21) Sardis Road/Ledan Road Intersection Improvements Utility Relocation Project.
- 22) Interstate 985 at Martin Road Interchange Utility Relocation Project.
- 23) Flat Creek Stream Restoration/Cargill to Gainesville Mill Project - Phase I.
- 24) Flat Creek Watershed Aquatic Ecosystem Restoration Project with Corps of Engineers.
- 25) FY16 Cedar Creek Reservoir Dam Inspection and Repairs.
- 26) Knickerbocker Dam Improvements Project.

**ACTIVE PROJECTS MANAGED DURING FY16 BUT CARRIED FORWARD (CONT'D):**

- 27) Wilshire Trails Storm Sewer Rehabilitation Project.
- 28) Chattahoochee Golf Course Stormwater Improvements Project.
- 29) Asset Management Program Development.
- 30) GIS Mapping System Project.
- 31) Water and Wastewater System Population and Flow Projections Update.
- 32) DWR Administration Building HVAC Replacement Project.
- 33) Roosevelt Square Renovation Project.
- 34) City of Gainesville Administration Building Renovations Project.
- 35) Fire Station # 2 Relocation Project.
- 36) Midtown Streetscaping Project.
- 37) Community Service Center Expansion Project.
- 38) Parks and Recreation Frances Meadows Multi-Purpose Field Improvements Project.
- 39) Allen Creek Athletic Facility - Phase 1 Project.



**Roosevelt Square Renovation Project**

# DISTRIBUTION AND COLLECTION DIVISION

The Distribution and Collection Division is comprised of two sections: **Water Distribution** and **Wastewater Collection**. The major functions and tasks of these two groups are: the operation and maintenance of the water distribution and wastewater collection system, providing a safe environment to the public, and ensuring that quality and reliable water and sewer service are provided to our customers. These tasks include: repairing minor water leaks and water main breaks, inspection and maintenance of fire hydrants and valves, flushing water to improve water quality, locating or marking water and sewer lines, cleaning and inspecting sewer lines, and clearing easements to ensure ready access.

## WATER DISTRIBUTION

**MISSION STATEMENT:** *To ensure the distribution of safe drinking water by maintaining the City's water system.*



## SCOPE OF SERVICES

The Water Distribution staff, which includes the Division Manager, performs the following functions: provides utility locates, assists with water and sanitary sewer repairs, performs right-of-way maintenance, repairs and services fire hydrants, performs vehicle and equipment maintenance, performs water valve maintenance, and carries out all welding activities and tool fabrication. The Administrative and Managerial team of this Division provides administrative and management support. The Division's Manager and Superintendents represent the City of Gainesville on various committees and State professional organizations, as well as provide input on future system expansion planning.

## STATISTICAL INDICATORS

The Division maintains approximately **8,840** fire hydrants in the water distribution system. Each fire hydrant is inspected annually with the assistance of the local fire departments. In FY16, **328** fire hydrants were repaired, serviced, or replaced in order to ensure fire protection for our community. The group inspected **1,942** water valves in FY16 and **971** were repaired, raised, or serviced.

Determining the location of utilities is another function the Division performs related to water distribution. In FY16, a total of **28,718** locates were performed by the Division. All utility providers are required by state law to mark their utility locations prior to beginning work. This requirement prevents costly damages, reduces outages to customers, and provides for the general safety of those performing utility work.

## **WATER LOSS PREVENTION**

Dry conditions and population growth place a strain on our water resources, creating the urgent need for water efficiency and conservation. Each year, utilities lose large volumes of treated water through inefficiencies in the supply process. Water loss control is vital in order to reduce the burden on existing water resources, increase the reliability of our water supply, and keep water rates low for customers. The City of Gainesville uses a hands-on, proactive approach to combat water loss in our system. The City's proactive leak detection efforts save the Utility thousands of dollars annually (see chart below). Since its implementation 6 years ago, a data logging system allows the City to locate hard-to-find leaks. The system uses sophisticated software to record and download sounds into files for analysis. The software evaluates the sounds for leaks and produces graphical and tabular results as to its location. Leaks are repaired quickly (most within 24 hours of notification) and proficiently (with use of standard repair methods and materials). The utility also continuously replaces pipes to improve the integrity of the distribution system and reduce leaks.

| <b>CALENDAR YEAR</b> | <b># of Leaks Found</b> | <b>Gallons Recorded/Recovered</b> | <b>Production Costs Savings*</b> |
|----------------------|-------------------------|-----------------------------------|----------------------------------|
| 2011                 | 27                      | 16,910,000                        | \$36,187.40                      |
| 2012                 | 26                      | 20,626,061                        | \$44,139.64                      |
| 2013                 | 27                      | 9,659,080                         | \$20,670.26                      |
| 2014                 | 19                      | 10,442,880                        | \$22,348.02                      |
| 2015                 | 14                      | 8,992,440                         | \$19,243.88                      |
| <b>5-Year</b>        | <b>113</b>              | <b>66,630,461</b>                 | <b>\$142,589.20</b>              |

\*\$19,243.88 in production cost saved based on the cost of \$2.14 for producing the "next thousand gallons" of treated water.

\*\* Estimated numbers of miles.



The City of Gainesville's  
4 Pressure Zones

Pressure management is another important tool in water loss control. The City of Gainesville's Water System has 4 pressure zones and over 20 Pressure Control Valves that help maintain desired pressures for fire protection while easing strain on water mains and reducing water loss from leaks.

Water theft is a source of water loss that also impacts our water supply. To combat unauthorized use, the City of Gainesville has over 500 fire hydrant locks in place to prevent theft. Weekly reports and investigations are also conducted to locate unauthorized consumption via water meters at locations in which no one is currently signed up to receive service. In addition, the City has developed policies to deter and identify meter tampering.

A locked fire hydrant



## **WATER LOSS AUDIT**

In 2010, the **Georgia Water Stewardship Act** was established to encourage and improve water conservation to enhance Georgia's water supply. The Act requires that all Georgia public water systems serving 10,000 or more people complete an annual water loss audit, beginning in 2012. The City of Gainesville Public Utilities Department submitted its second Water Loss Audit to the GAEPD in FY 2013. The Distribution Division spearheaded the audit, with the assistance of a team of staff members from various divisions. The audit is an examination of records and financial accounts to check for accuracy and provide accountability. The assessment's purpose is to identify areas and causes of water loss, to improve water efficiency within the state's public water systems, and to serve as a catalyst for creating a culture of water conservation among water managers.

Gainesville Public Utilities scored a **74** out of **100** on the audit, which is considered a slightly above average score in the State of Georgia. The Utilities Infrastructure Leakage Index (ILI) is a very important benchmark for water system planning and can be used as a target-setting mechanism. It was established in FY16 at **1.59**. The ILI is unique to each water system, but is a very important leak reduction target number when considering water resource availability, financial goals, and other operational considerations of Gainesville's water system.

A copy of this year's Water Audit is available upon request.



### WATER AUDIT DATA VALIDITY SCORE:

**\*\*\* YOUR SCORE IS: 75 out of 100 \*\*\***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

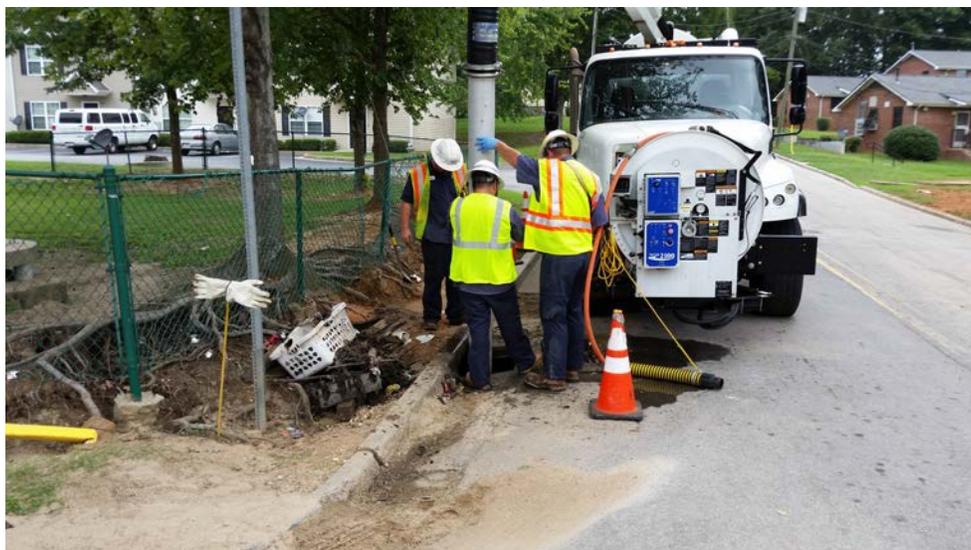
1: Volume from own sources

2: Billed metered

3: Customer metering inaccuracies

## STORMWATER

The Division became responsible for maintenance and operation of the City's Stormwater System on July 1, 2014. The division is responsible for responding to complaints related to flooding, and the general upkeep of the stormwater system within the City's various sub-basins of the water shed. The stormwater system consist of approximately **900,000** feet of various types of stormwater piping ranging in size from 6" to 120" in diameter. Division staff conducted over **372** inspections of storm facilities as part of the annual MS4 program, and generated **169** work orders related to needed storm system repairs. Cleaning storm pipes and catch basins is a part of the maintenance function of the division, and the division removed over **151.33** tons of debris from the storm structures in FY16. The Division continues to strive to make the City's stormwater system more reliable and enhance water quality in the City of Gainesville.



## **WASTEWATER COLLECTION**

**MISSION STATEMENT:** *To ensure the environmentally safe collection and transportation of sanitary sewage by maintaining the City's sewer system.*

### **SCOPE OF SERVICES**

The Wastewater Collection staff is responsible for ensuring that the collection system is operating properly. One major preventative maintenance function of the Utility is cleaning sanitary sewer collection pipelines. These efforts greatly reduce the possibility of environmentally-damaging sewer overflows and prevent isolated sewer problems for our customers.

The Inflow and Infiltration (I&I) Team, which is a technical group responsible for identifying and eliminating groundwater and rainwater flows into the sanitary sewer collection system, is also part of the Collection Division. This team conducts flow monitoring, manhole inspections, CCTV inspections, and smoke testing within the sewer system.

### **FY16 Statistical Indicators:**

- **Collection Crews cleaned over 324,567 feet of sewer pipeline and manholes**
- **39 sewer main defects were repaired**
- **Nearly 100,853 linear feet of sewer mains were TV inspected**
- **Over 1,158,424 gallons of infiltration and Inflow were identified and eliminated in the sanitary sewer system**
- **Over 146,525 linear feet of sewer line was smoke tested and 168 smoke test problems were located**
- **81 manholes were flex sealed**
- **32 “cured in place” spot repairs were completed**