

# Columbus Water Work's Environmental Services



- \* State of the art Facility
- \* Built with LEED elements
  - \* High Efficiency
- \* Approximately 14,000 sq. ft.

# Internal Departments

- \* Industrial Pretreatment & Regulatory Enforcement Programs
- \* Recycle Programs
- \* Watershed/Source Water Protection
- \* Wastewater Analytical Laboratory
- \* Water Analytical Laboratory



# Industrial Pretreatment/FOG

- \* 26 permitted Industries
- \* Over 850 permitted restaurants
- \* Over 2 MG per year of hauled waste
- \* Fog Recycling Partnership
  - \* Over 90 restaurants
  - \* 50 apartment complexes
- \* 11 FOG drop off locations



# Watershed

Creek Monitoring / Walking Program - required by CWW's South Columbus Water Resource Facility's (SCWRF) National Pollutant Discharge Elimination System (NPDES) Permit.

CWW must walk each creek 3 times in a 5 year period to ensure there is no sanitary sewer influence on the water quality in the streams.



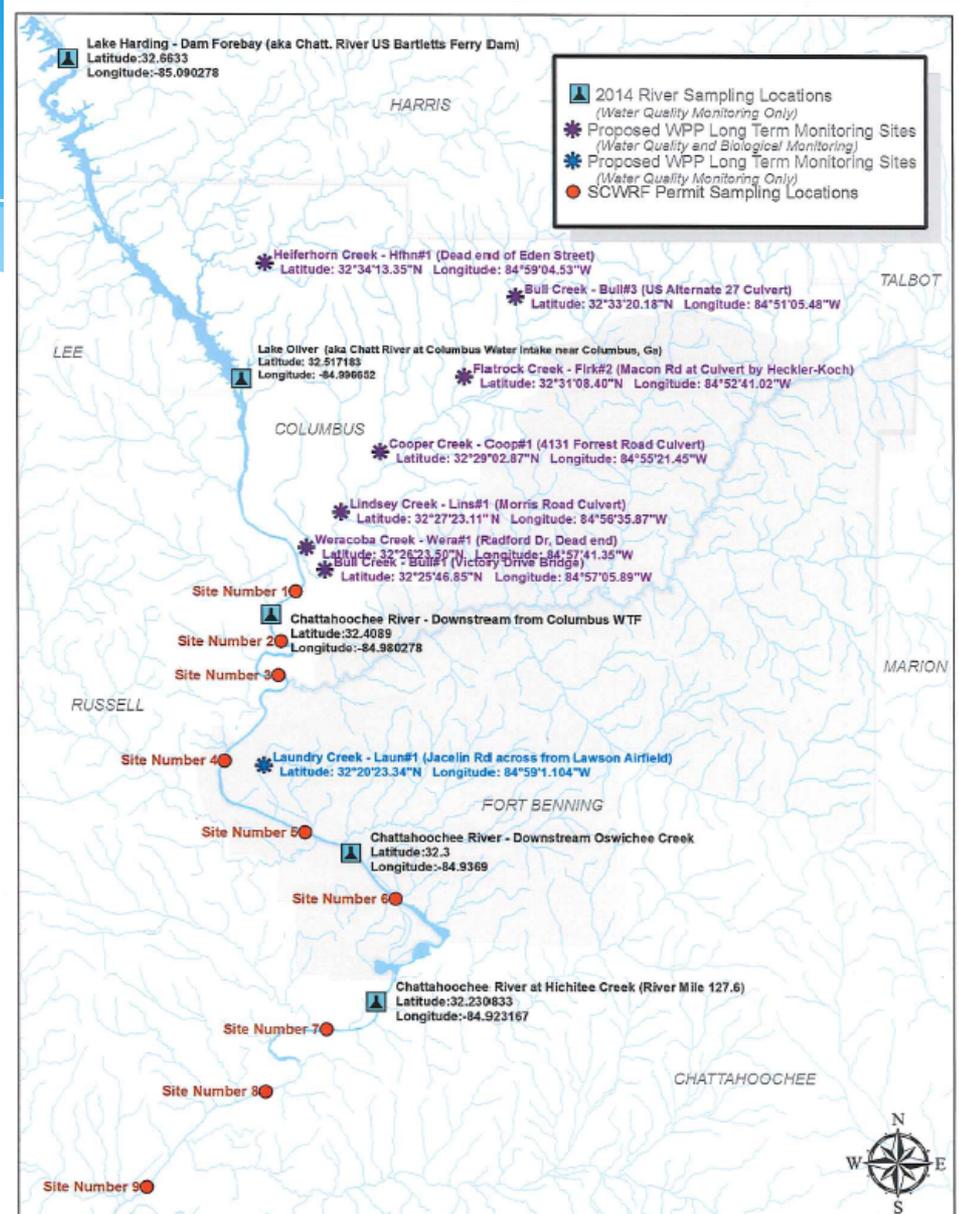
## List of 7 Creeks

- Bull
- Cooper
- Flatrock
- Heiferhorn
- Lindsey
- Weracoba
- Laundry



## Chattahoochee River Sampling

- \* The sampling includes:
  - \* Light extinction
  - \* Phosphorus
  - \* Temperature
  - \* Turbidity
  - \* Dissolved oxygen
- \* Sampling occurs 12 months out of the year 1-3 times per month.

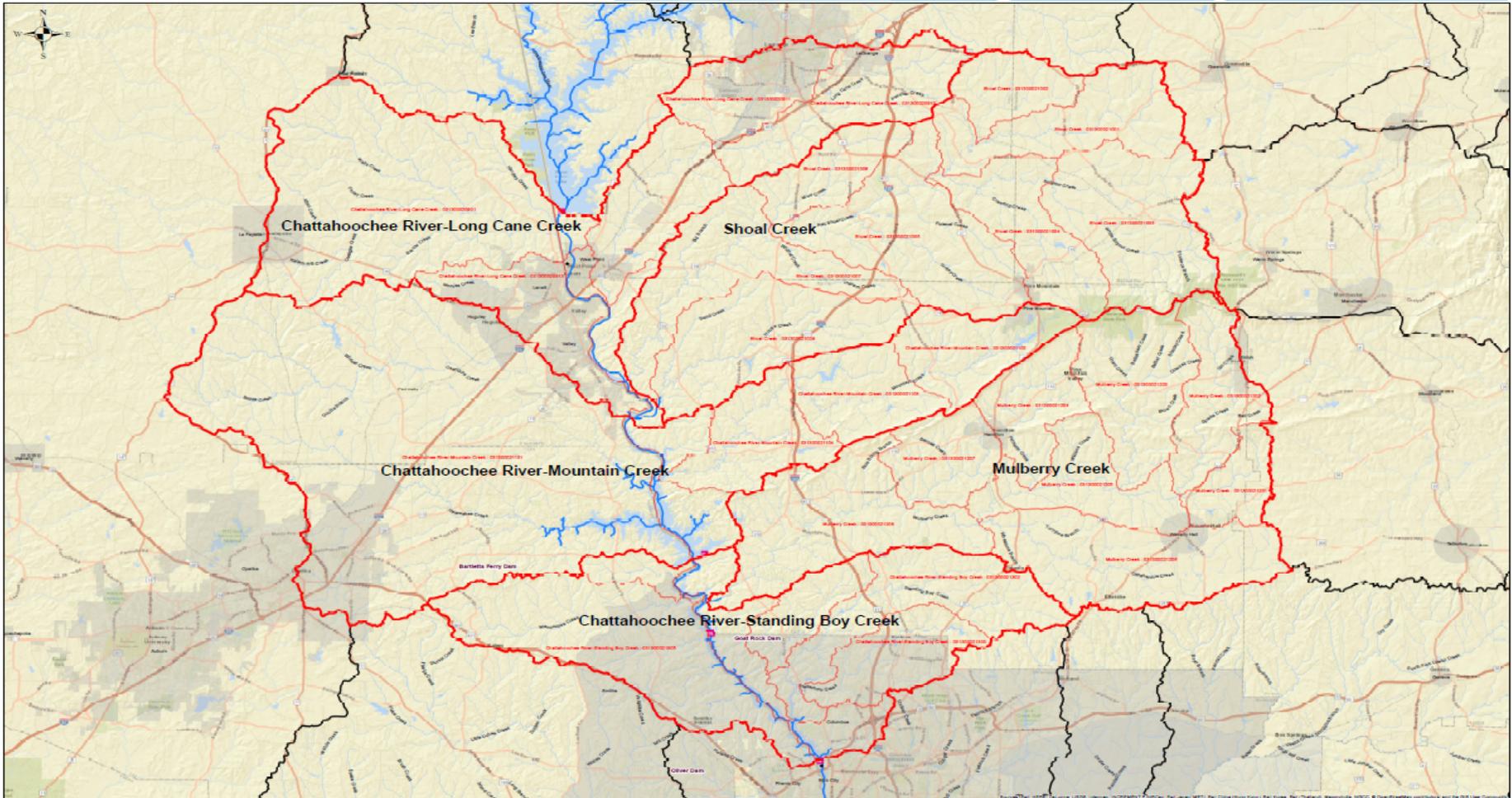


# CWW's Source Water Protection Plan

- Opelika Water
- Smith Station Water
- Valley Water
- LaGrange Water
- Harris County Water
- West Point Water
- Phenix City
- Columbus Water Works

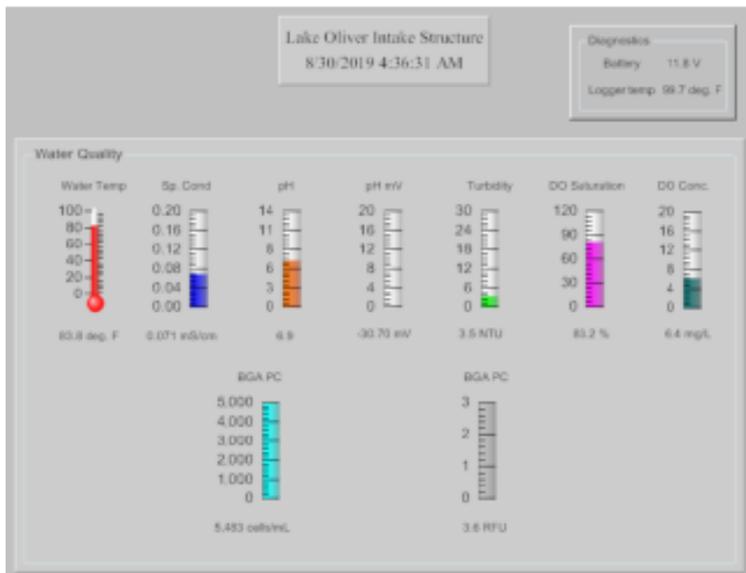
## Source Water Intake Group SWIG

## Source Water Area



## Real time monitoring for Source Water Protection

- YSI sonde technology with multiple probes– blue green algae, pH, temperature, dissolved oxygen etc.
- Zero Angle Photometric Spectroscopy (ZAPS) to continuously monitor different parameters for process control.



```
-- Select --  
Cell Temperature  
Chlorophyll-A  
Clean  
Color True  
E. coli  
FDOM  
Nitrate+Nitrite  
Phycobilin  
PM Index  
Ref. Hydrocarbons_Uncom**  
Sample Pressure  
TOC  
Turbidity  
UVA  
UVT
```



# Whitewater



- \* CWW monitors the Whitewater stretch
- \* From Smith Station intake to Trade Center 3 days per week

# Watershed Research

Projects evaluating & protecting the Watershed and Source Water

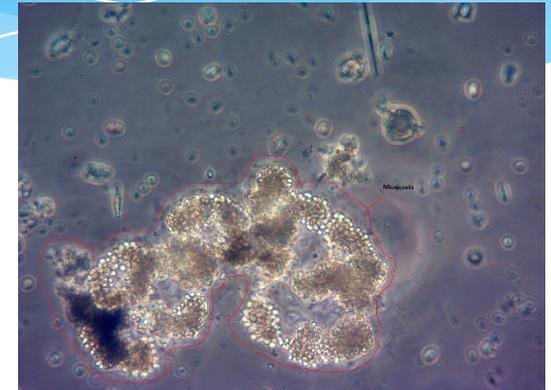
AU/UGA Study



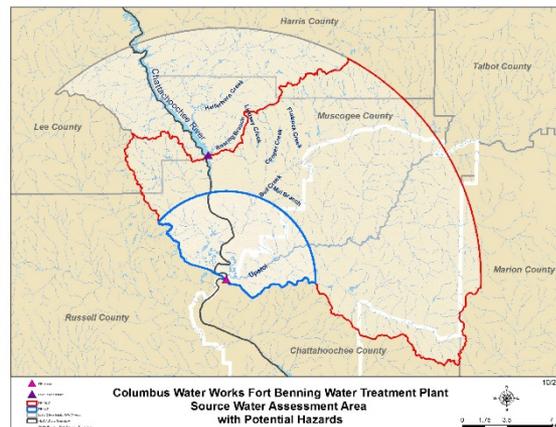
Cyanotoxin Testing



Algae Identification



Source Water Protection  
Plan for FB Plant



GP Hydrilla Control



# How do we accomplish this? Award winning Laboratory



In 2018:

- \* Over 16,200 samples
- \* Over 104,600 analyses
- \* Inspected over 850 facilities
- \* Sampled over 100 locations in our river and creeks

# Laboratory Equipment

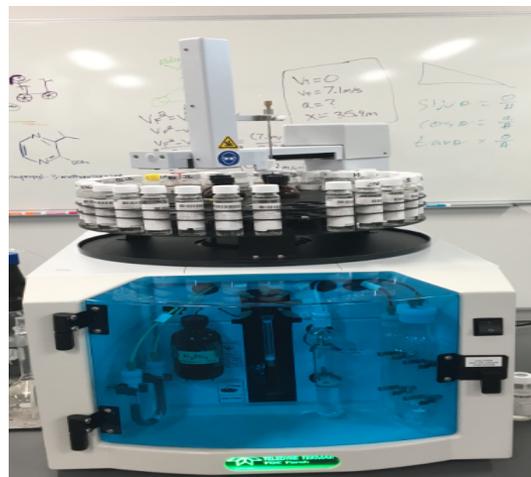


**Ion Chromatograph**



**Gas Chromatograph/MS**

**Organic Chemistry**



**Total Organic Carbon Analyzer**

**Inorganic Chemistry**



**Inductively Coupled Plasma (ICP) MS**

# Wastewater/stream Analytical Laboratory

- \* All SCWRF permit samples
  - \* CBOD
  - \* TSS
  - \* Fecal
- \* Creek and Stream Samples
- \* Other Communities samples
- \* 49,830 analyses in 2018



# Water Analytical Laboratory



- \* All NCWRF/FBWTP permit samples
  - \* Chlorine residual
  - \* Bacteria
  - \* Turbidity
- \* Process testing
  - \* Chlorophyll a & b
  - \* Algae identification
  - \* MIB & geosmin
  - \* Disinfection By-products
- \* Other communities samples
- \* 54,430 analyses in 2018