

Scott Candler Plant circa 1950

# CIP 2024

## CIP Definition: Water System Projects

Department of Watershed Management

May 07, 2024



# AGENDA

## 01 THE SYSTEM

### Water System Overview

- *History*
- *Raw Untreated Water*
- *Water Treatment*
- *Water Distribution*

## 02 PROJECTS

### Key Projects for CIP 2024

## 03 ASK

### What are we Requesting?

# Water System Overview: Timeline

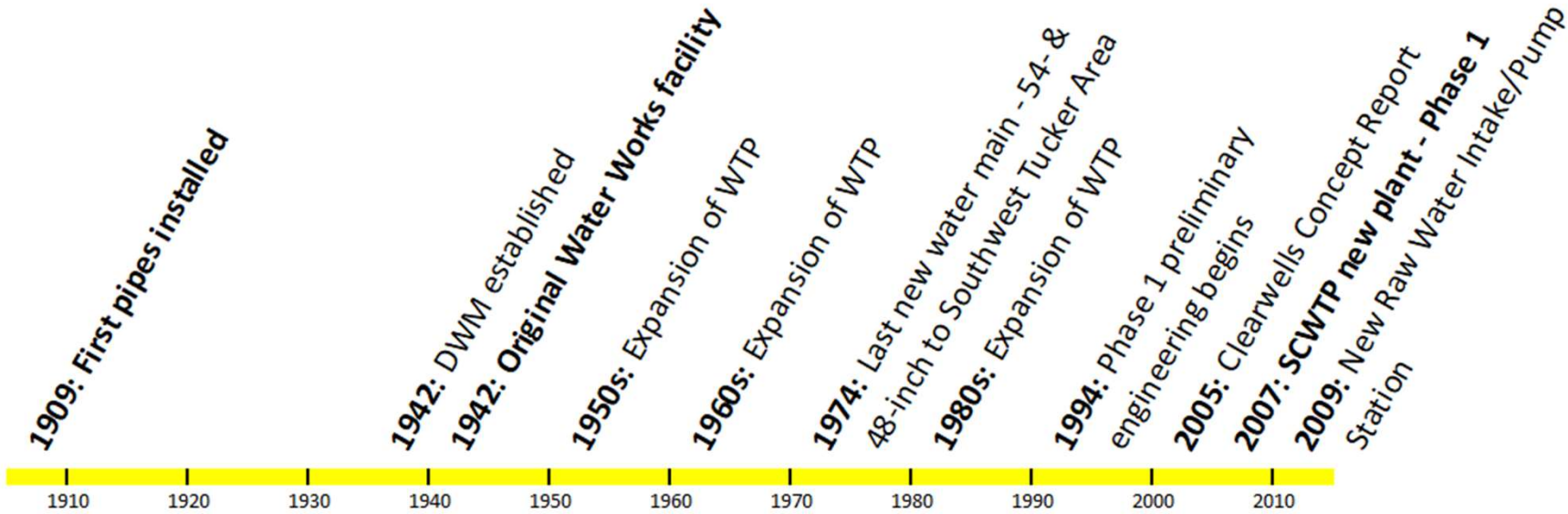
DEKALB  
COUNTY  
WATER  
WORKS

1942

Scott Candler Plant - main building south entrance



# Timeline ...



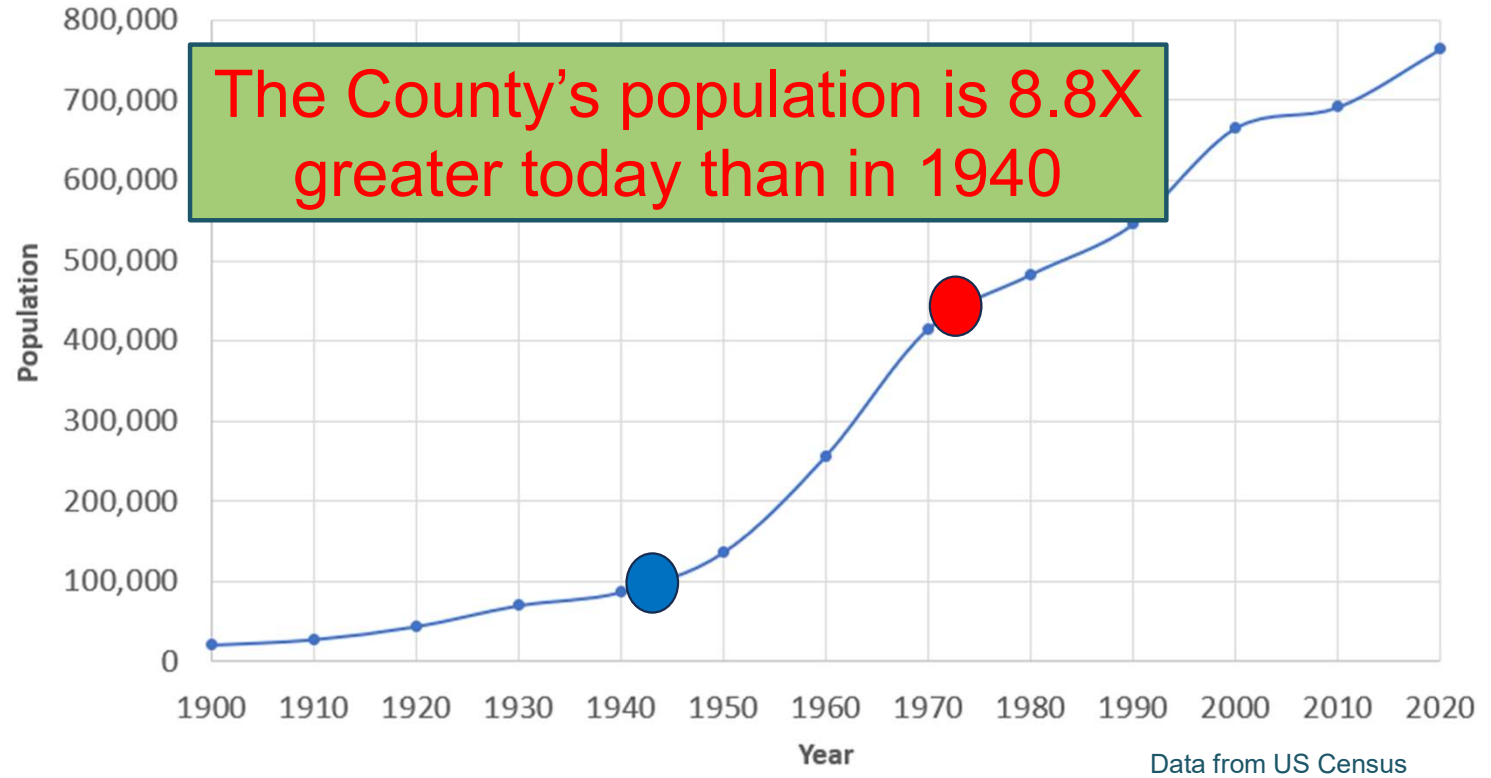
# The beginning ...

● Water Treatment Plant and Department established

▶ Over 40% of the system, by length, will be 70 years' old by 2030

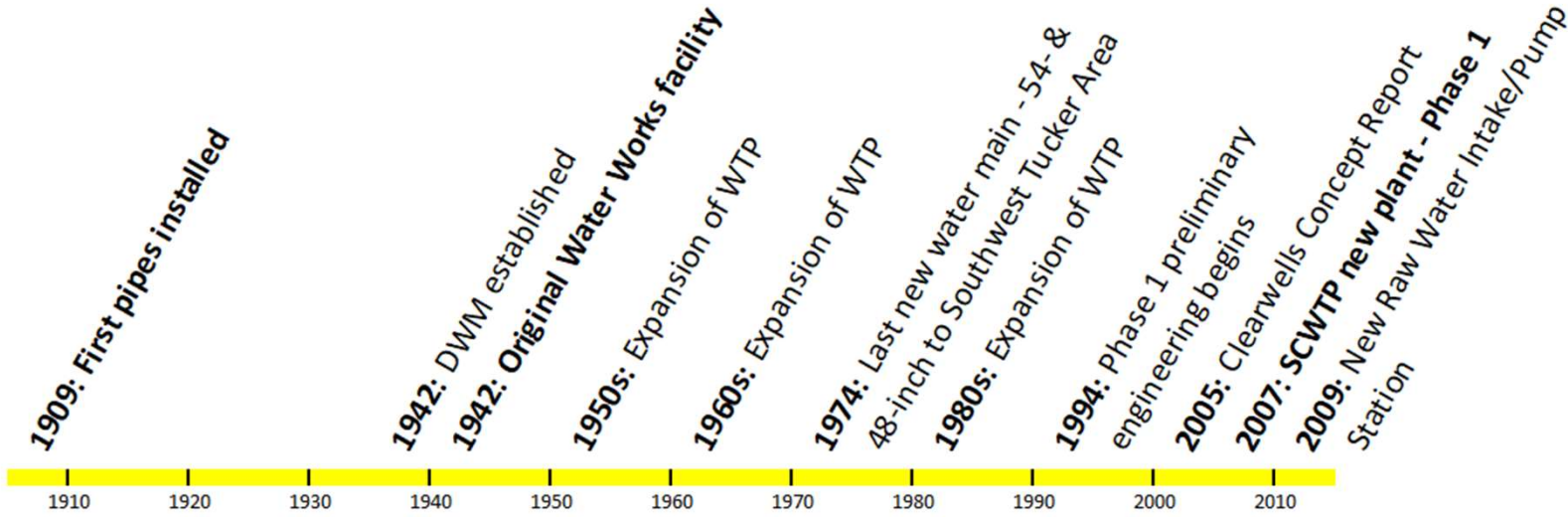
● Last major main added

DeKalb County Population Growth by Year

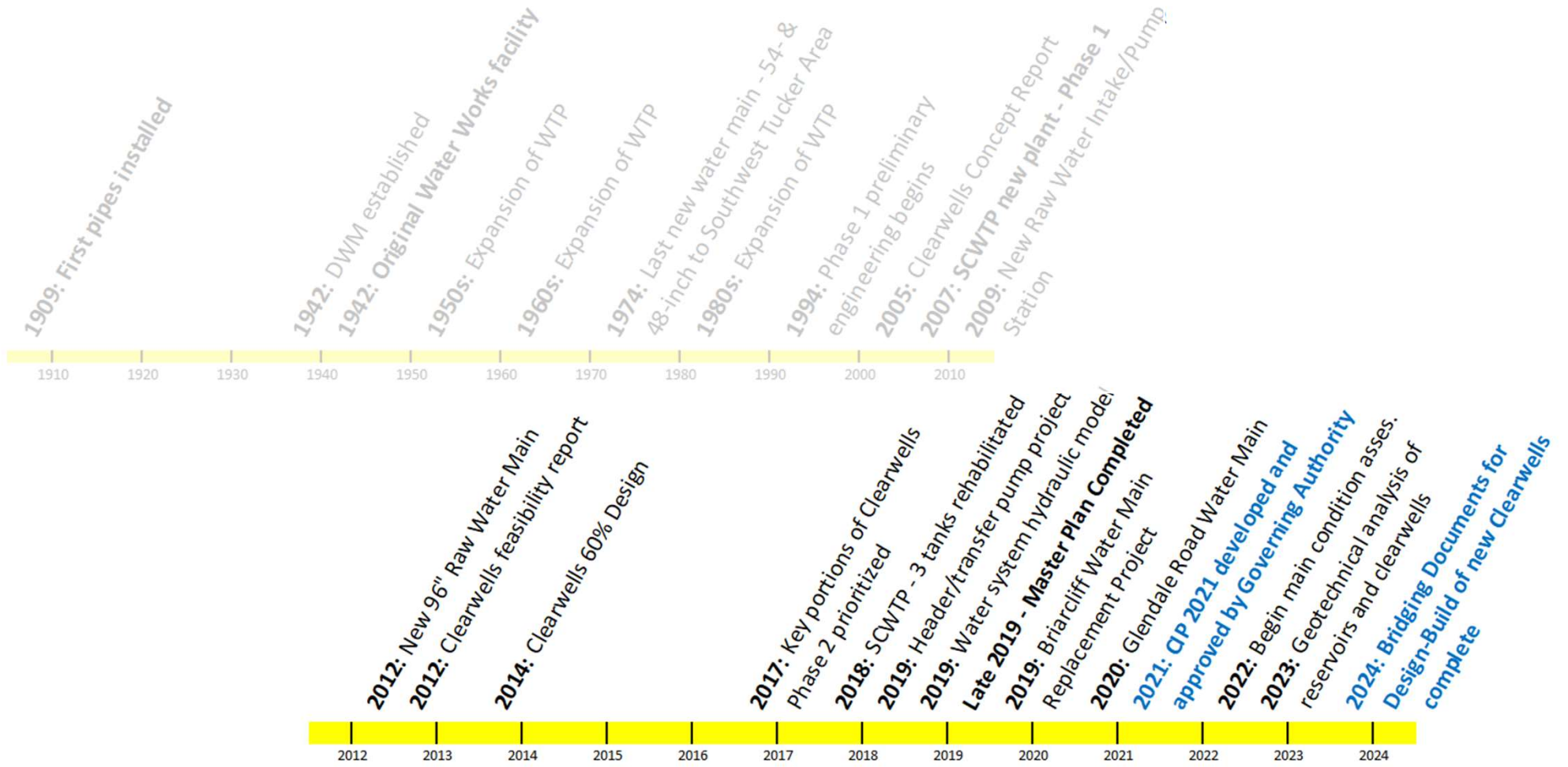




# Timeline ...



# Timeline ...

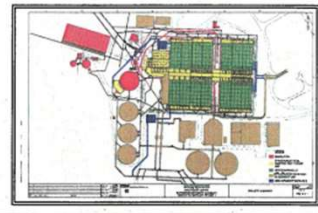


# SCWTP Clearwells



2005

DeKalb County  
Public Works Department  
Water and Sewer Division



Phase 2  
Scott Candler Water Filter Plant Expansion  
Design Development Report

2012

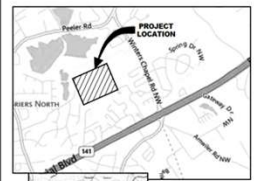
## Scott Candler WTP Clearwell and Pump Station Improvement Project Feasibility Study



Prepared for  
DeKalb County Department of Watershed Management  
March 12, 2012

2014

## DEPARTMENT OF WATERSHED MANAGEMENT DEKALB COUNTY, GEORGIA SCOTT CANDLER WATER TREATMENT PLANT CLEARWELLS AND PUMP STATIONS IMPROVEMENT PROJECT 60% DESIGN DRAWINGS JULY 2014



SCOTT CANDLER WATER TREATMENT PLANT  
4500 WINTERS CHAPEL ROAD  
ATLANTA, GA 30360  
DISTRICT 6, LAND LOT: 219



BOARD OF COMMISSIONERS  
LEE MAX INTERIM CHIEF EXECUTIVE OFFICER, COMMISSIONER (DISTRICT 5)  
BLAINE HOVEL, COMMISSIONER (DISTRICT 1)  
JEFF BAKER, COMMISSIONER (DISTRICT 2)  
LARRY JOHNSON, COMMISSIONER (DISTRICT 3)  
SHARON BARNES SUTTON, COMMISSIONER (DISTRICT 4)  
RATHE GANNON, COMMISSIONER (DISTRICT 6)  
STAN WATSON, COMMISSIONER (DISTRICT 7)



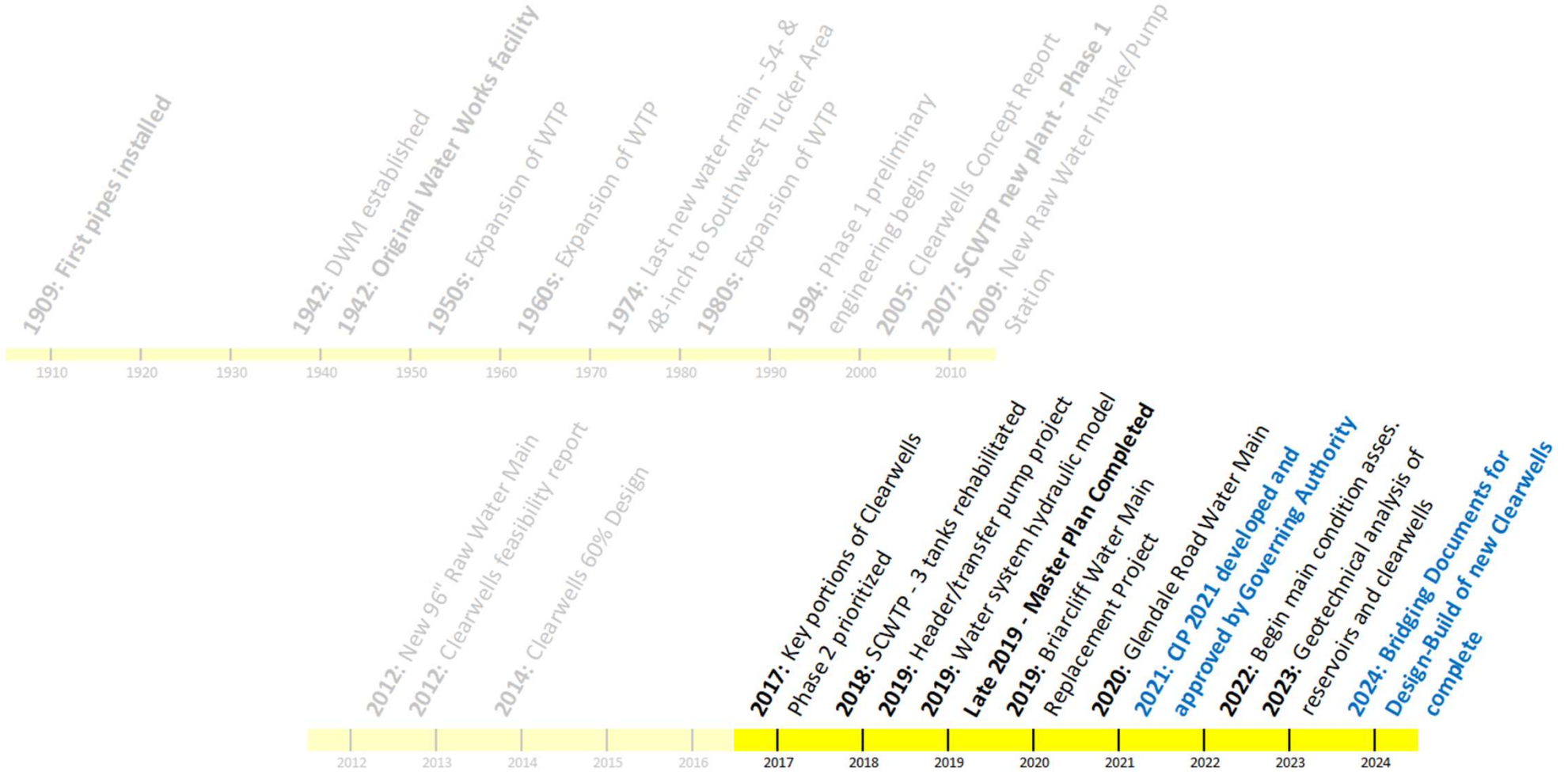
24 HR. EMERGENCY CONTACT  
800-377-6666  
DEPARTMENT OF WATERSHED MANAGEMENT  
DEKALB COUNTY GEORGIA  
WWW.DCWM.GA



NOT FOR CONSTRUCTION  
OR RECORDING  
SIOBHAN MATTHEW O'BRIEN, P.E. DATE  
GEORGIA LICENSE NO. 38192  
ENGINEER OF RECORD



# Timeline ...



# SCWTP Clearwells

2017



Department of Purchasing and Contracting

MAY 10, 2017

REQUEST FOR PROPOSALS (RFP) NO. RFP#17-500434

FOR

DESIGN/BUILD SERVICES ROOF REPLACEMENT & PAINTING  
OF STEEL GROUND STORAGE TANKS AT  
SCOTT CANDLER WATER TREATMENT PLANT

Procurement Agent: Willie Moon  
Phone: 404-371-7021  
Email: wmoon@dekalbcountyga.gov

Mandatory DeKalb First LSBE Meeting: May 10, 2017 or May 17, 2017 or May 24, 2017  
(Bidders must attend 1 meeting on either  
of the dates listed.) 4572 Memorial Drive, Decatur, Georgia 30032  
Main Conference Room - A  
(Meetings are held at 10:00 a.m. and 2:00 p.m.)

Mandatory Pre-Proposal Conference and Site Visit: May 17, 2017, 11:00 a.m., 4830 Winters Chapel  
Road, Doraville, Georgia 30360,  
Deadline for Submission of Questions: 5:00 P.M. ET, May 22, 2017  
Deadline for Receipt of Proposals: 3:00 P.M. ET, June 9, 2017

THE RESPONSIBILITY FOR SUBMITTING A RESPONSE TO THIS RFP TO THE DEPARTMENT OF PURCHASING AND CONTRACTING OF DEKALB COUNTY GOVERNMENT ON OR BEFORE THE STATED DATE AND TIME WILL BE SOLELY AND STRICTLY THE RESPONSIBILITY OF THE RESPONDER.

2018

Water Treatment Plant  
for Pump Replacement



DeKalb County  
Department of Purchasing and Contracting

March 12, 2018

REQUEST FOR PROPOSALS (RFP) NO. 17-500472

DESIGN BUILD SERVICES

FOR

SCOTT CANDLER WATER TREATMENT PLANT – HIGH SERVICES  
PUMP STATION HEADER & TRANSFER PUMPS REPLACEMENT

Procurement Agent: Willie Moon  
Phone: (404) 371-7021  
Email: wmoon@dekalbcountyga.gov

Mandatory DeKalb First LSBE Meeting: March 14, 2018 & March 21, 2018  
(Bidders must attend 1 meeting on either  
of the dates listed.) 4572 Memorial Drive, Decatur, Georgia 30032  
Main Conference Room - A  
(Meetings are held at 10:00 a.m. and 2:00 p.m.)  
Video Conference: Utilize the link supplied on our  
webpage labeled "DeKalb First LSBE Video  
Meeting"

Pre-Proposal Conference and Site Visit: MANDATORY  
March 20, 2018, 10:00AM ET  
4830 Winters Chapel Rd., Doraville, GA 30360

Deadline for Submission of Questions: 5:00 P.M. ET, March 28, 2018  
Deadline for Receipt of Proposals: 3:00 P.M. ET, April 17, 2018

THE RESPONSIBILITY FOR SUBMITTING A RESPONSE TO THIS RFP TO THE DEPARTMENT OF PURCHASING AND CONTRACTING OF DEKALB COUNTY GOVERNMENT ON OR BEFORE THE STATED DATE AND TIME WILL BE SOLELY AND STRICTLY THE RESPONSIBILITY OF THE RESPONDER.



# Before and after





# Recent SCWTP Investments



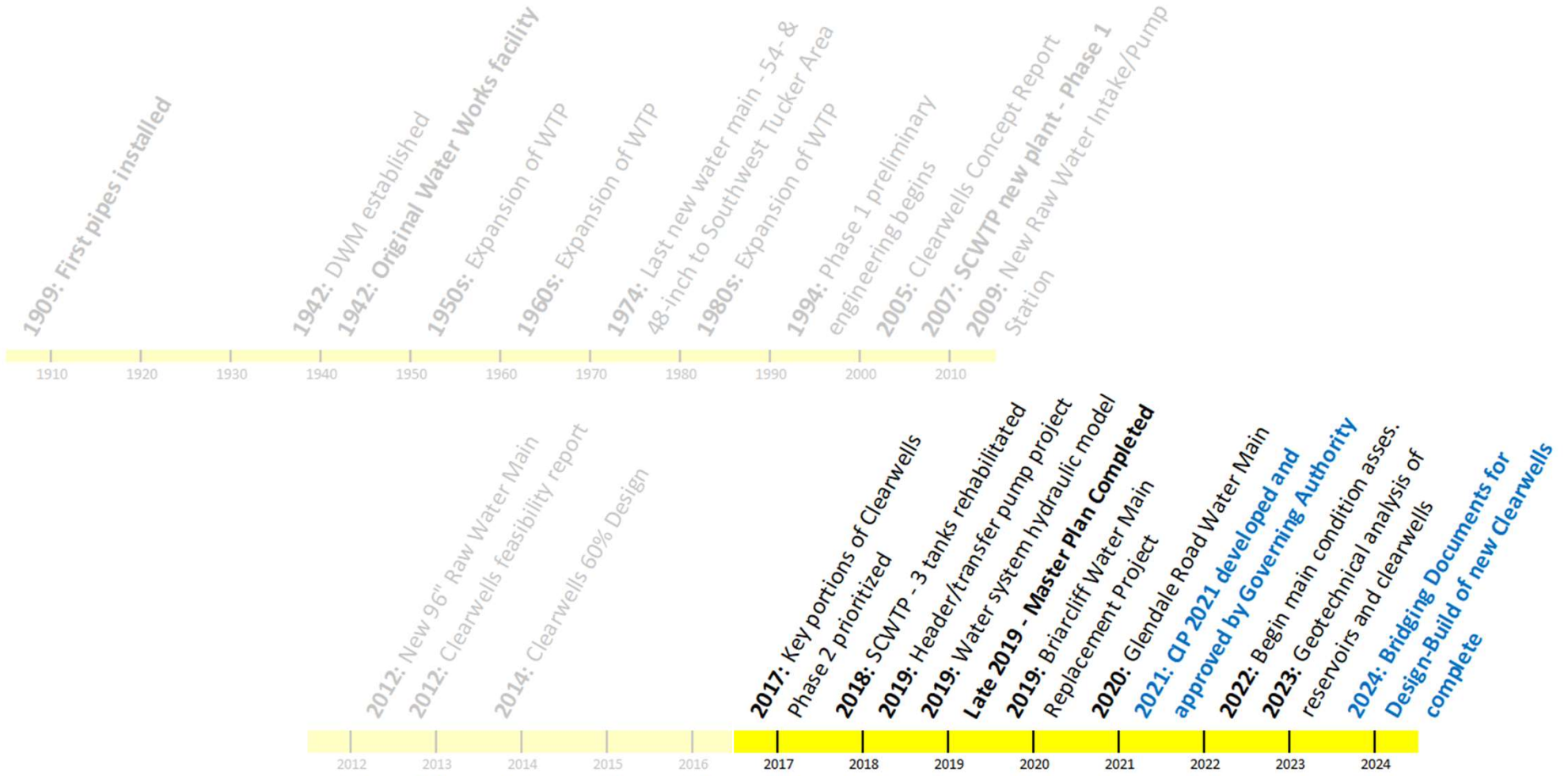
May 07, 2024

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Aug 14, 2019  
2746 Laurelwood Road  
Atlanta  
DeKalb County  
Georgia

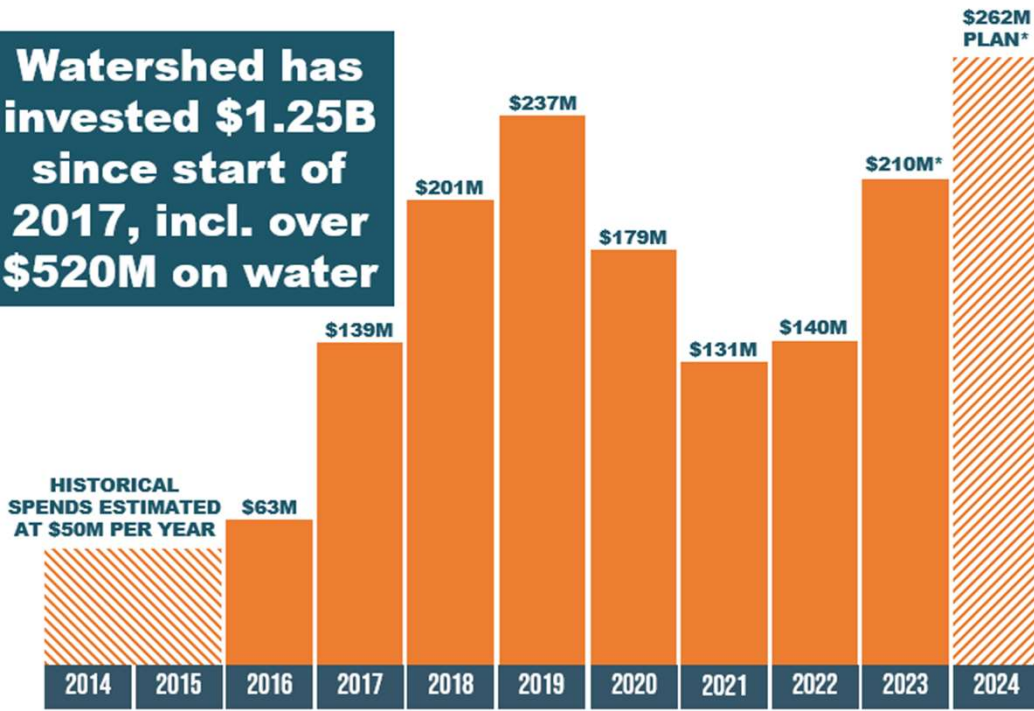
# Timeline ...





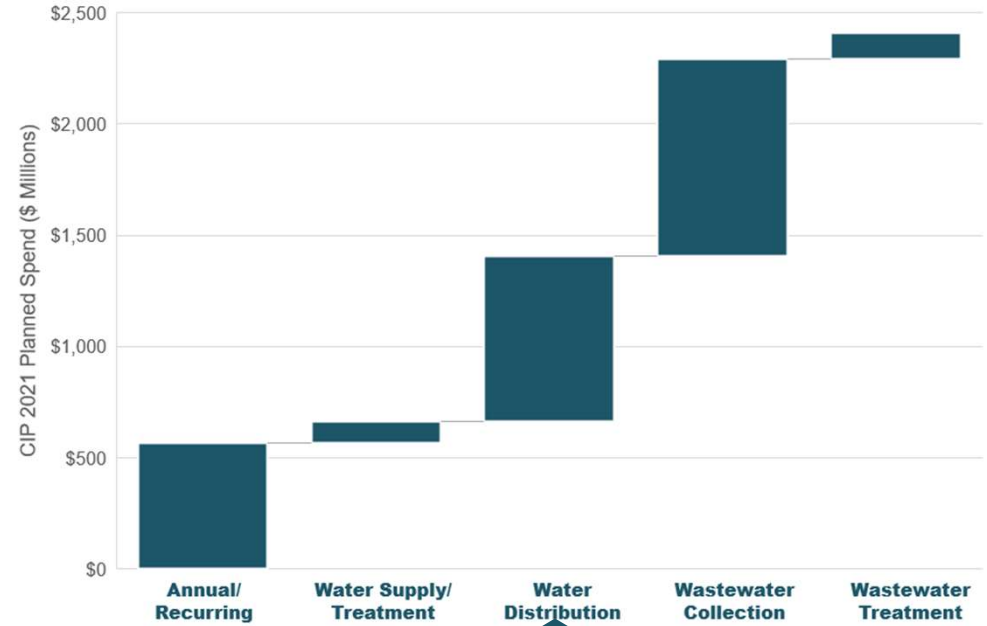
# Recent Investments ...

**Watershed has invested \$1.25B since start of 2017, incl. over \$520M on water**



\* Spending constrained by funding

CIP 2021 Planned 10-Year Spend by Category



**CIP 2021 includes major increased investment in the water system**

# Water System Overview: Components & Gaps

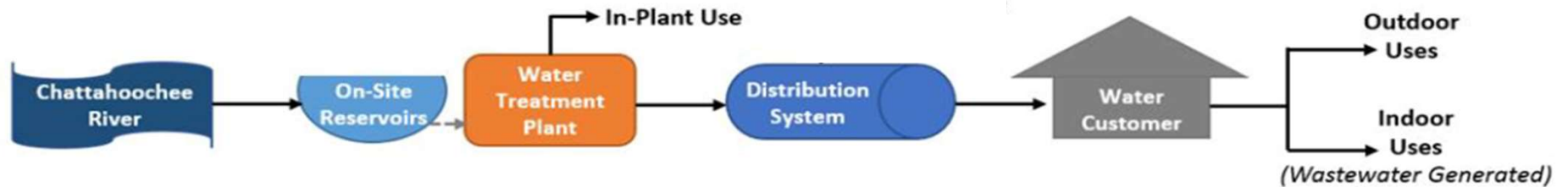
9  
4  
2

COUNTY  
WATERS  
WORKS



Scott Candler Plant - main building south entrance

## County's Single Water Source/Supply



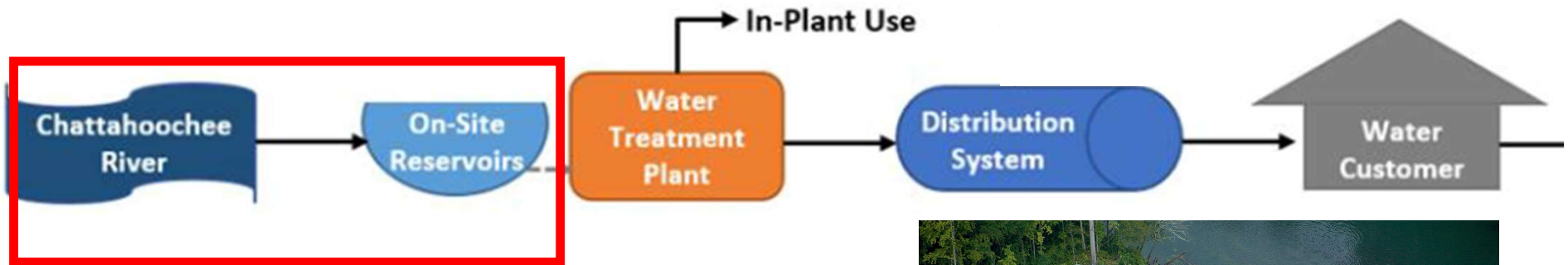
The Chattahoochee River is the County's sole water source.

**DeKalb County is the only county in the metro Atlanta area of its size (population served) with one water supply source and one Water Treatment Plant (WTP)"**

(Source: DeKalb Water Master Plan 2020)

# Raw Water System Overview

Figure 5: Water System Schematic

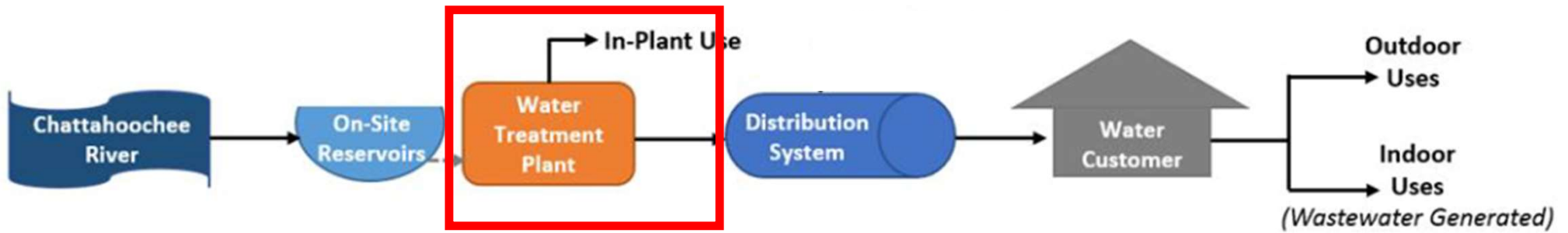


**DeKalb's intake station was built in 2009**

**Reservoirs at Scott Candler can provide up to 12 days of storage at the projected 2050 average day demand.**



# Water Treatment Overview



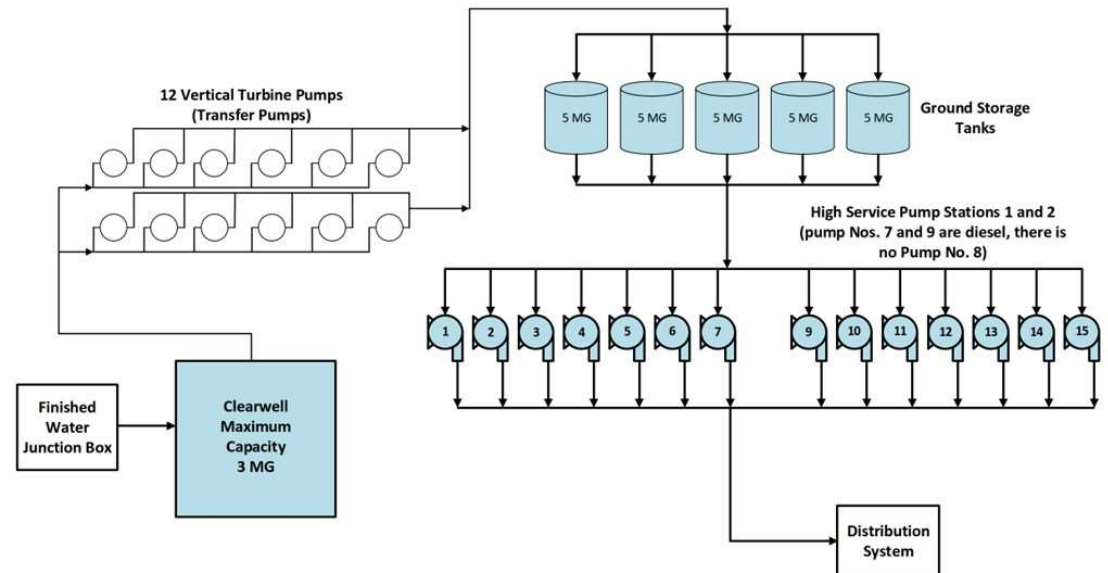
## Scott Candler Water Treatment Plant



# Scott Candler WTP Overview

## System consists of:

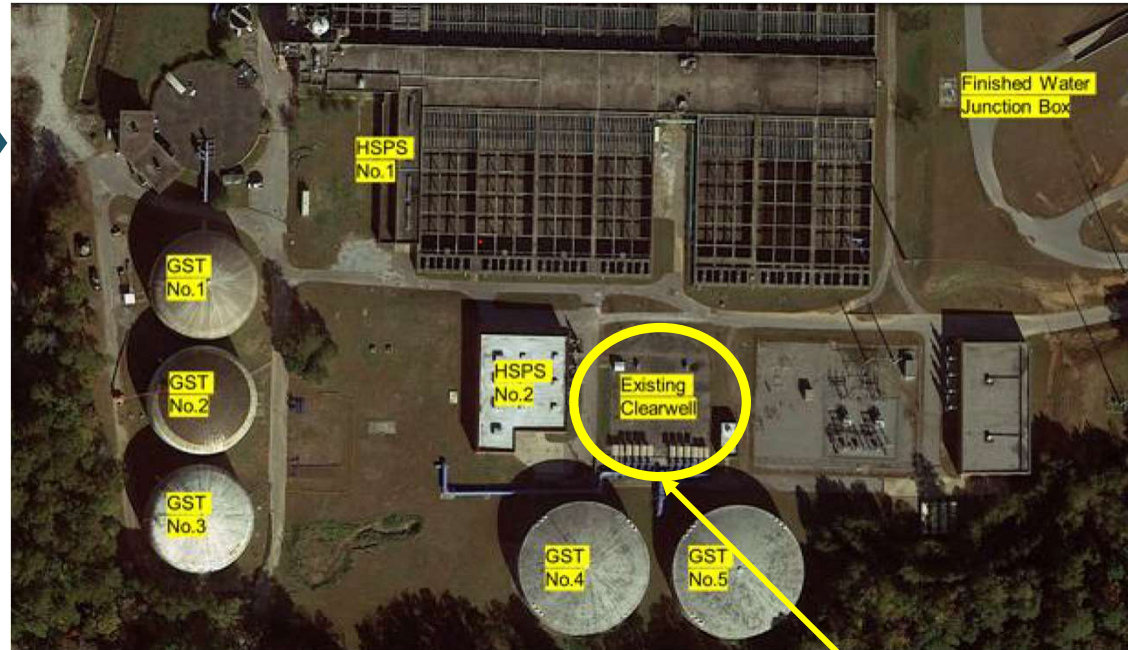
- ▶ Originally built in 1942. New plant was constructed in 2007.
- ▶ Remnants of the old plant remain - especially for components used in pumping to system.



The plant mostly has redundant systems except for the Clearwells.

Remnant aging facilities

Electrical Building – structural issues – project in procurement



Single clearwell



Transfer Pump #13 Starter Cabinet

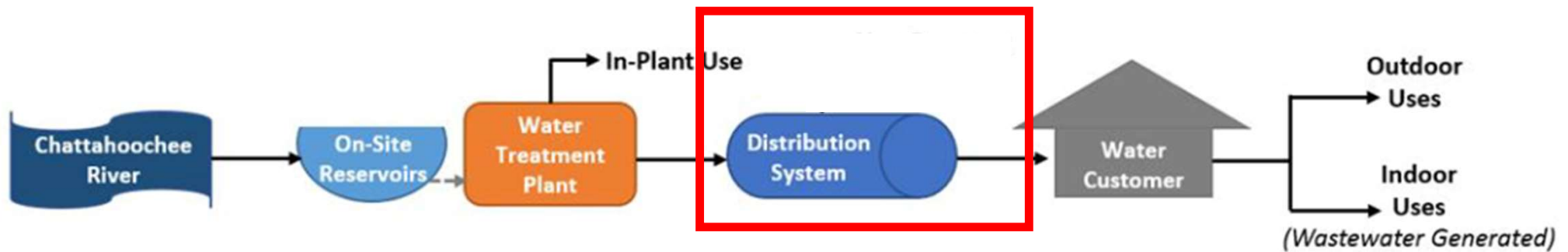
Transfer Pumps



1989 transfer pumps



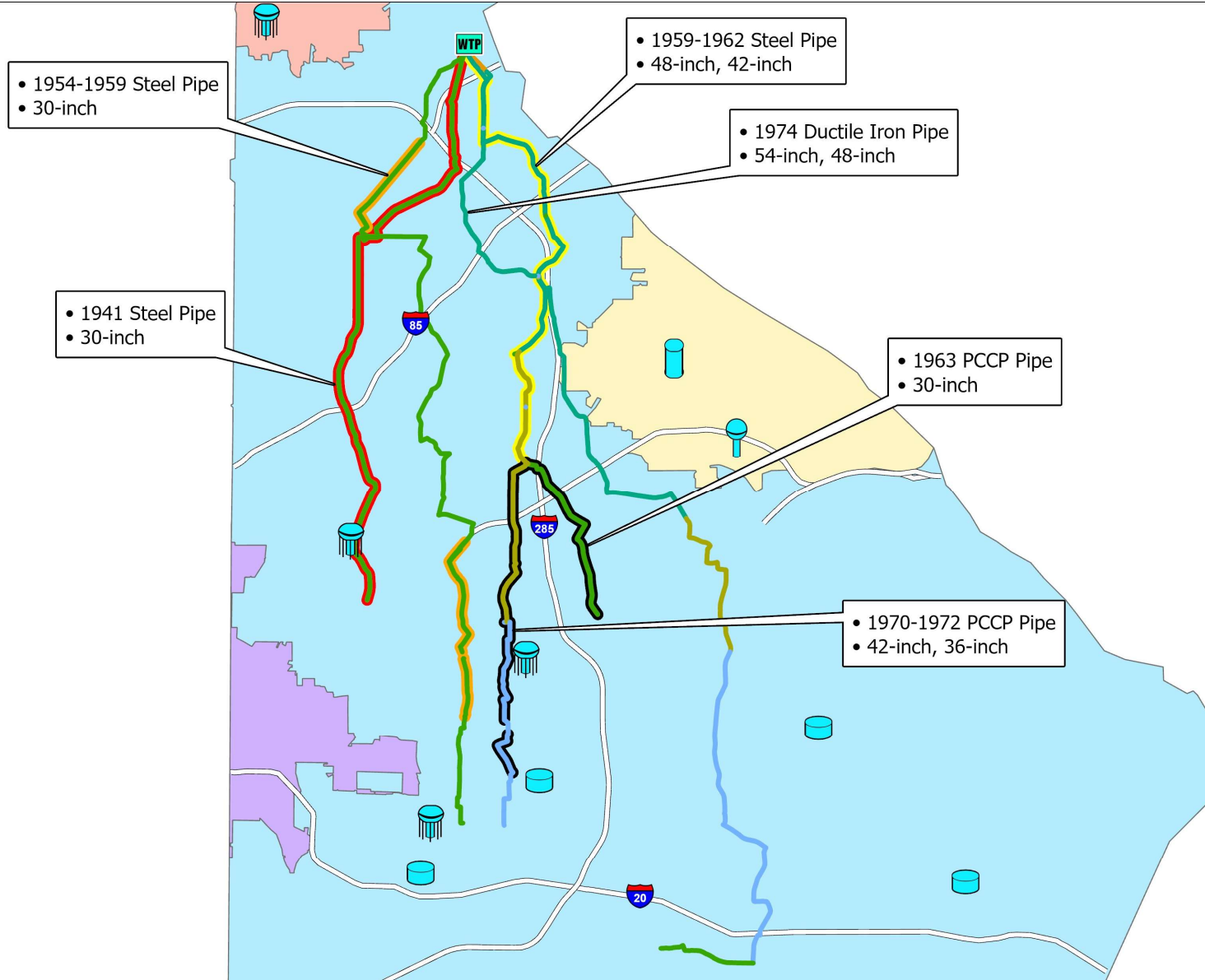
# Water Treatment Overview



## Consists of:

- ▶ ~3,000 miles of water pipe ranging from 1.5- to 54-inch diameter
- ▶ Major pump station at plant
- ▶ 21 tanks - 16 in system; 5 at plant.

# Transmission Mains





# Aging Transmission Mains

Both the Buford Highway pipeline that failed in 2019 and the McLendon that failed in 2024 carry about 35% of the flow in the system.

Buford Highway – 2019  
Ductile Iron



McLendon Road  
42" diameter  
Feb/April 2024  
Prestressed Concrete

Celia Way  
January 2023  
Prestressed Concrete

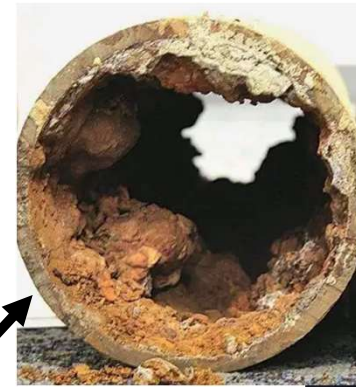
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# Pipe Type Issues

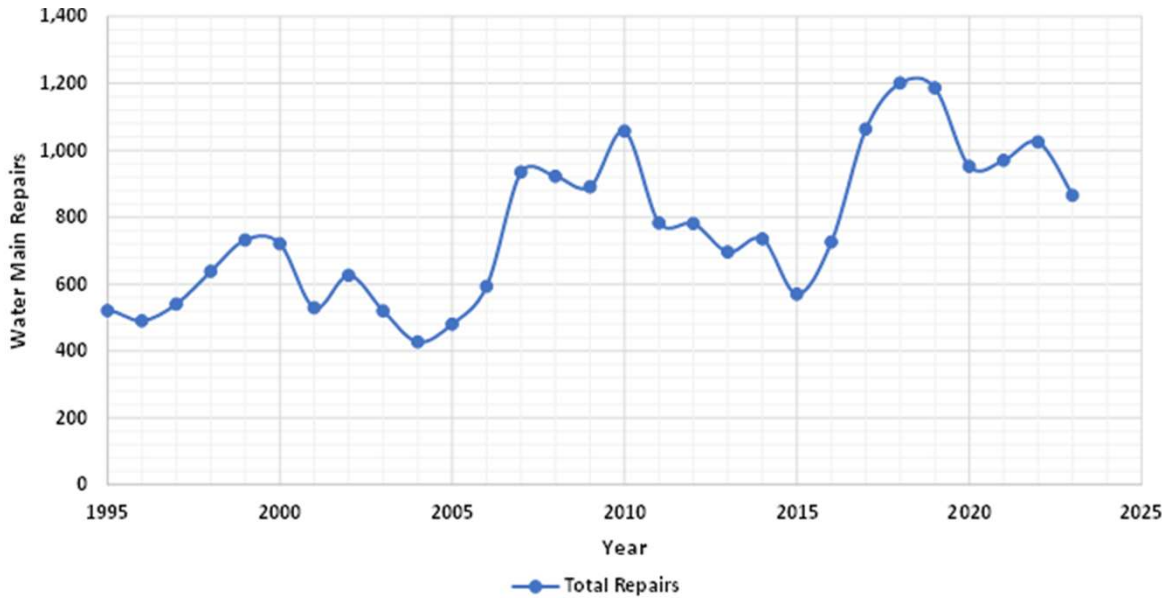
Material	Typical Use	Failure Mode
Cast Iron (CI) – 27% of system	No longer used - historically, was used most sizes	Tuberculation – “clogging”
Asbestos Cement (AC) – 19%	Used 1940-1970 mostly on small sizes	Frequent breaks
PVC – 7%	Mostly small sizes	Frequent breaks
Prestressed Concrete Cylinder Pipe (PCCP) – 0.4%	Only 11 miles in system – but on key large diameter mains	Catastrophic breaks



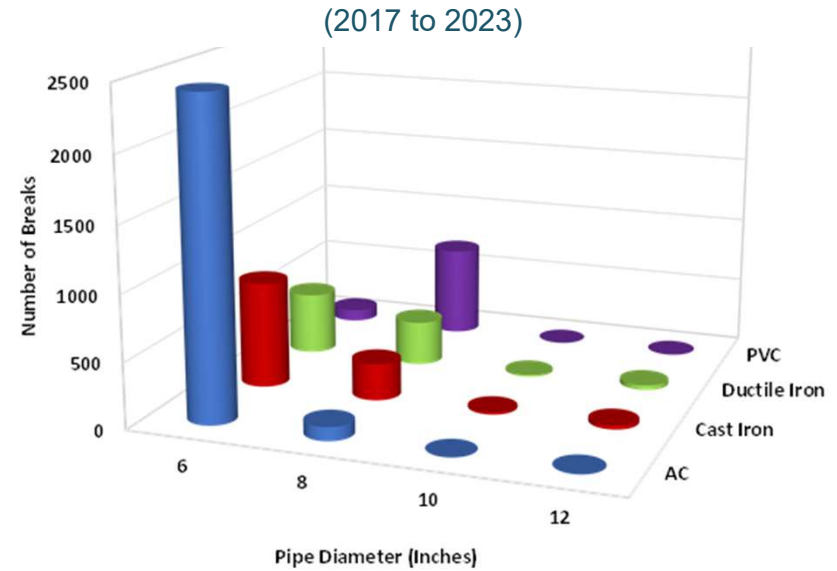


# Impacts of an aging water system

Water breaks per year are excessive



Breaks by pipe type and size (2017 to 2023)



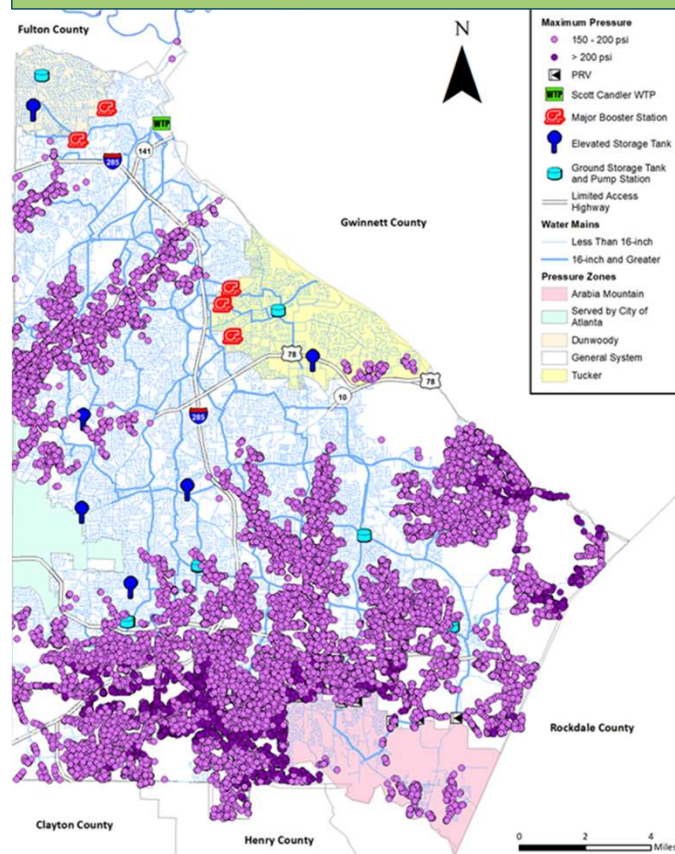
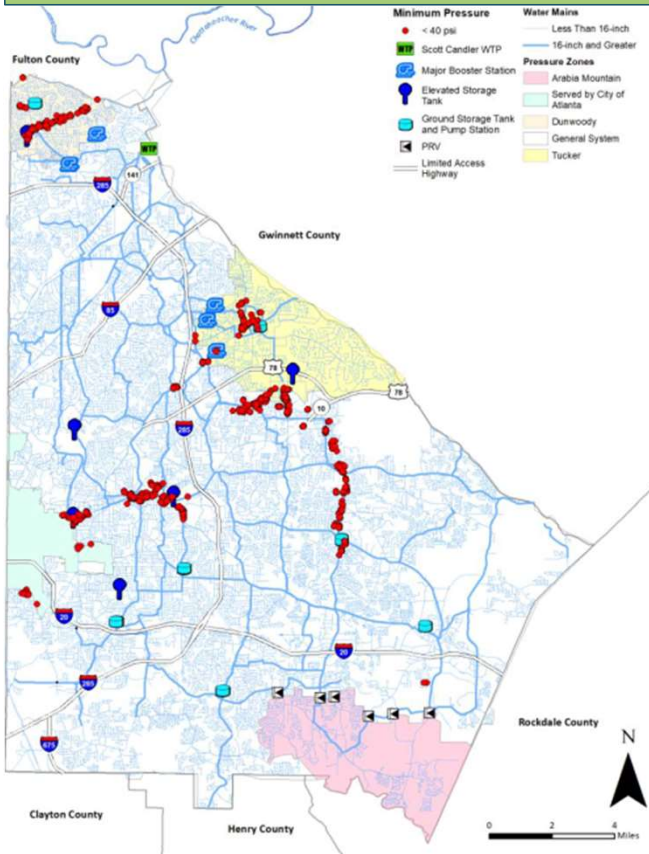
**Good Practice:** AWWA 2023 benchmark found that water utilities in Region II (Georgia, Alabama, Florida, Kentucky, Mississippi, North Carolina, Puerto Rico, South Carolina, Tennessee, Virginia, and West Virginia) has a median value of 16 breaks/100 miles of pipe. DeKalb, at 33, is above that range.

# Pressures

DeKalb has some low-pressure areas

But more VERY high-pressure areas

AWWA recommends the average water pressure in a typical home be between 40 and 60 PSI (Pounds per Square Inch). Substantial portions of the system are over 150 PSI (purple) and portions over 200 PSI (dark dot).





# Water System Solutions



2022 Peachtree Industrial Blvd failure

# Raw Water System

Needed Projects include about \$3M in projects, including:

- ▶ Building upgrades
- ▶ Upgraded Supervisory Control and Data Acquisition (SCADA) to support remote operations
- ▶ Site security.



Relatively few projects in  
CIP 2024



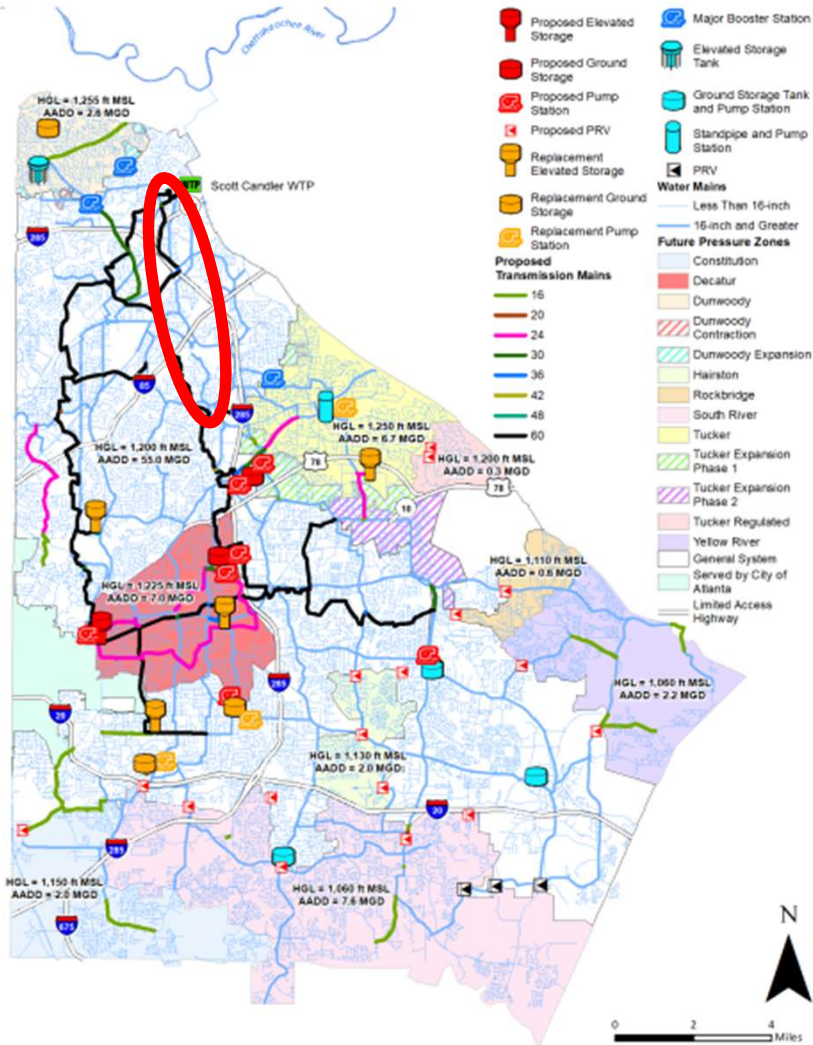
# Scott Candler WTP Projects

Needed Projects include about \$250M in projects, including:

- ▶ Addressing remnant portions of old plant
- ▶ Create redundant clearwells (60% increase in storage)
- ▶ Redundant primary power supply
- ▶ Upgrade transfer pumps
- ▶ Upgraded Supervisory Control and Data Acquisition (SCADA) to support remote operations.



Figure 18: Overview of Preferred Water Service Strategy



# 60" Water Main Addition

**Factoid:** The County has not added a major water transmission line in 50 years.

**Factoid:** Northern part is pretty much the same as built in 1940s – 1970s

System is under-sized & requires:

- ▶ Major increase in transmission capacity
- ▶ ~\$650M over next 25 years
- ▶ Phase A (\$135M) – WTP to Northlake Mall



# PCCP – the good and the bad

Approaching completion:

- ▶ 1970-1972 – problem period:
  - ▶ Glendale – planned for 2025
  - ▶ Avondale – in design
  - ▶ Remainder – in planning.
- ▶ Good period:
  - ▶ Currently performing well.

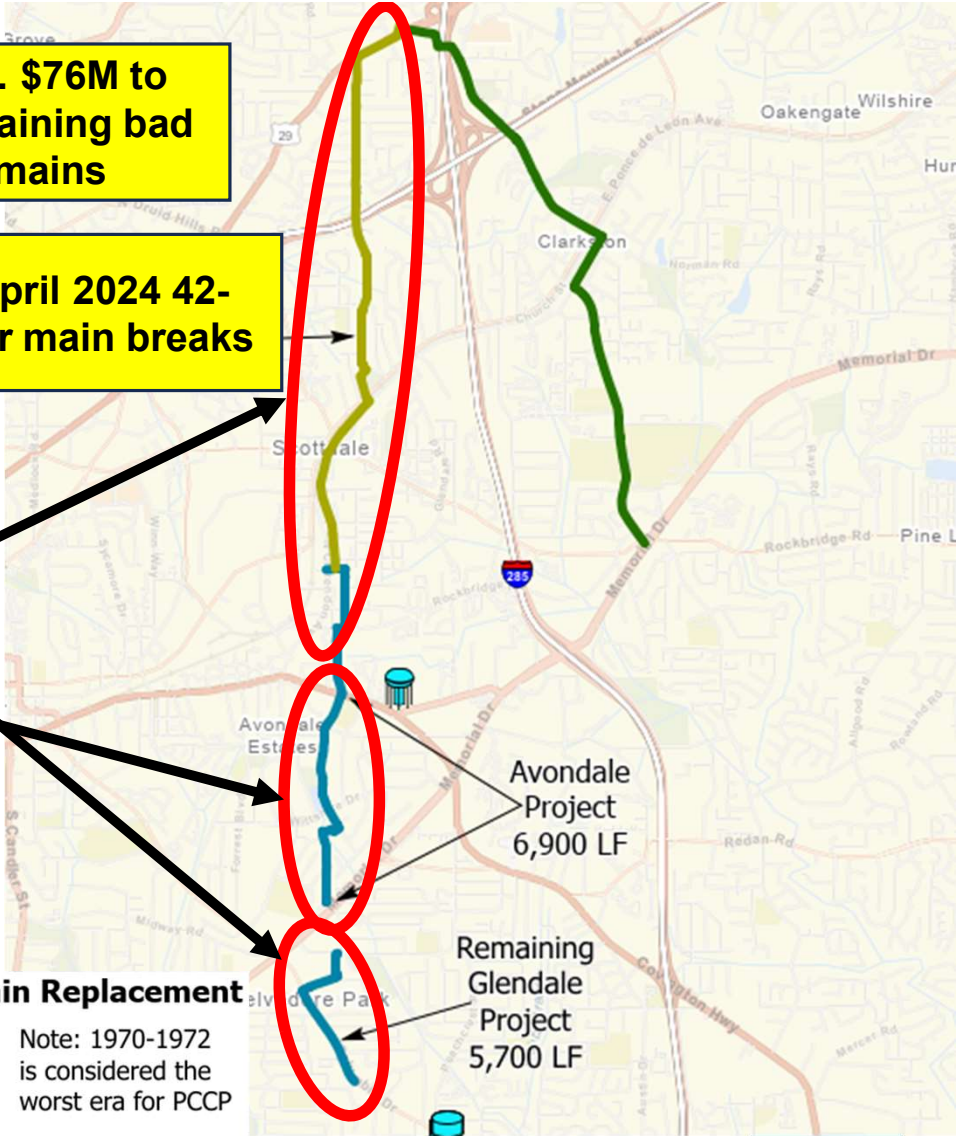
Roughly ... \$76M to replace remaining bad period mains

Feb. & April 2024 42-inch water main breaks

**Remaining PCCP Transmission Main Replacement**

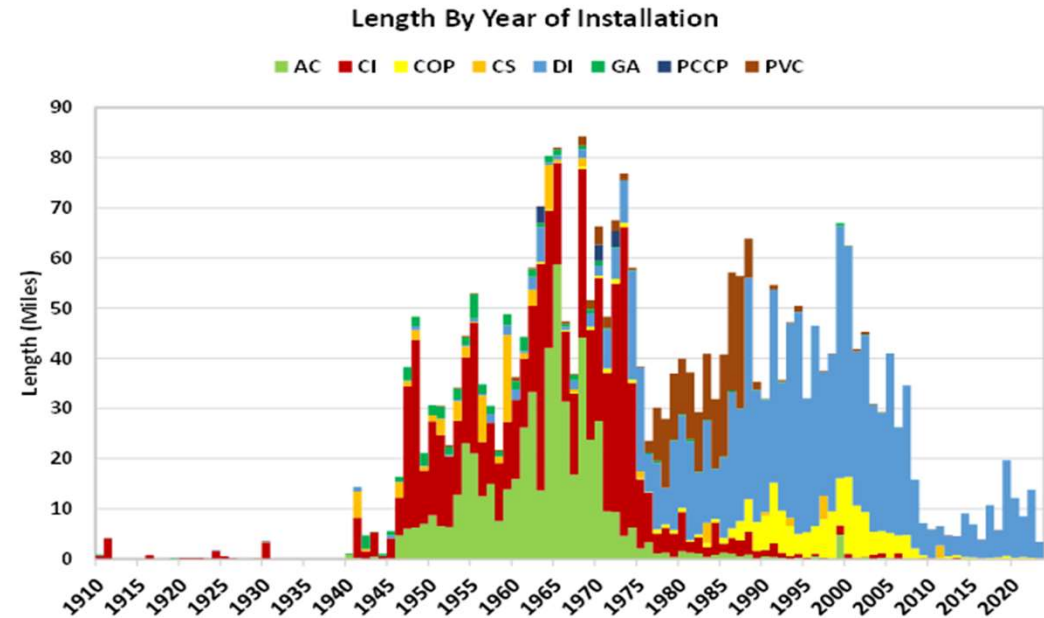
30-inch, Installed 1963	17,800 LF
36-inch, Installed 1972	15,600 LF
42-inch, Installed 1970	16,700 LF
<b>Total</b>	<b>50,100 LF</b>

Note: 1970-1972 is considered the worst era for PCCP



# AC and Aging Pipe Replacement

Funded at \$75 M/yr through whole 10-year CIP:



## Miles of water pipe reaching 70 years old:

Now (2020): 215 miles (install date 1950 or earlier)

By 2030: 596 miles (install date 1960 or earlier)

By 2040: 1,290 miles (install date 1970 or earlier)

By 2050: 1,745 miles (install date 1980 or earlier)

**Very roughly ...  
replacing 1,745 miles  
would cost about \$4.4B**



## **The Ask?**



**Our next presentation will be about the wastewater system.**

Ongoing process for seeking Governing Authority support for CIP 2024 plan, including:

1. Contract approval
2. Communications
3. Funding support
4. Community involvement

# QUESTIONS?

