

CIP 2021 DEFINITION & FUNDING REPORT

Overview of the Projects that Define CIP 2021

February 2, 2021



CIP 2021

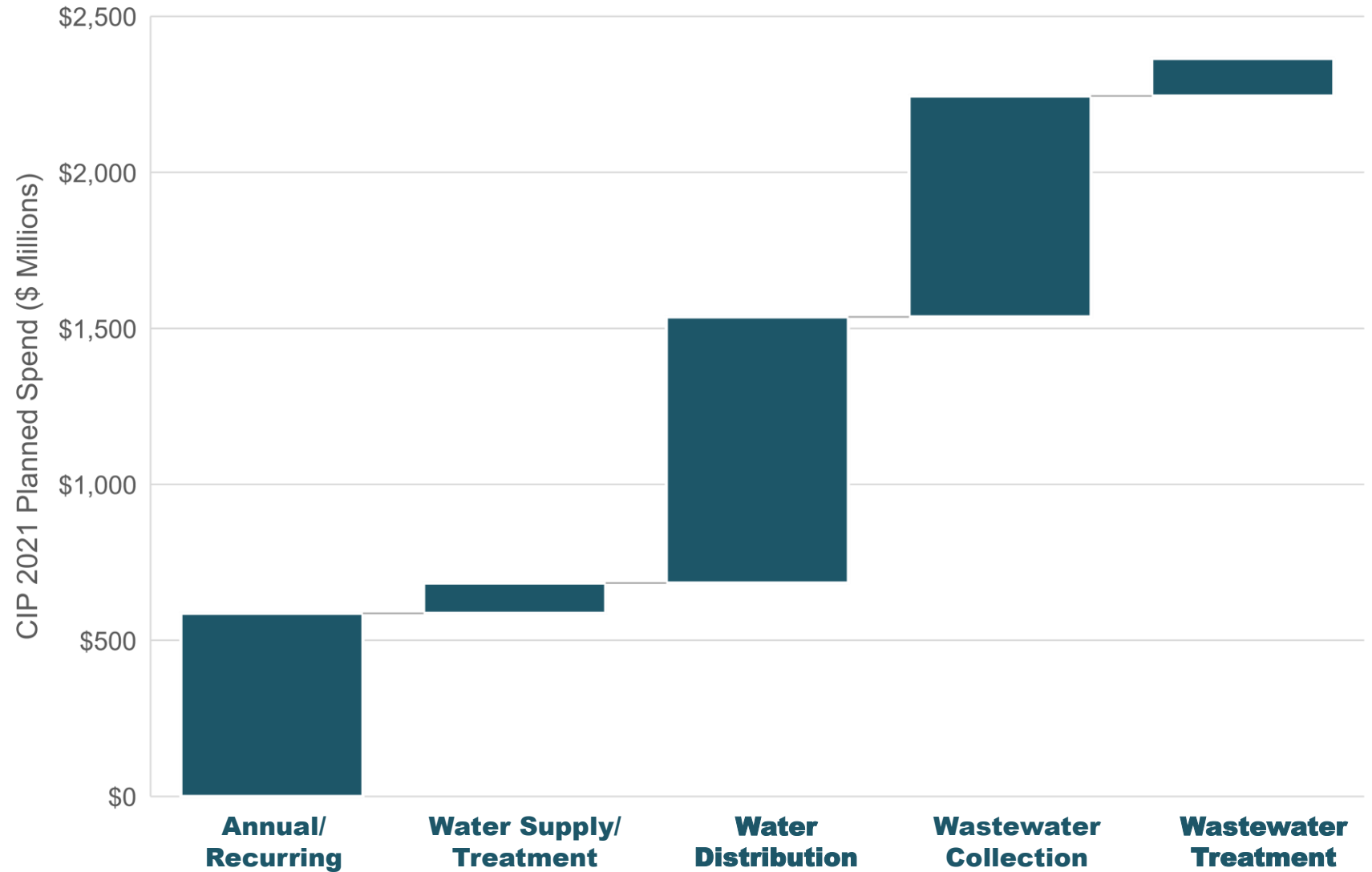
**PROPOSED
PLANNED SPEND
\$235 M/YR**

Average annual investment

5 PROJECT CATEGORIES

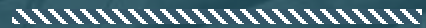
*Annual/Recurring
Water Supply and Treatment
Water Distribution
Wastewater Collection
Wastewater Treatment*

CIP 2021 Planned 10-Year Spend by Category



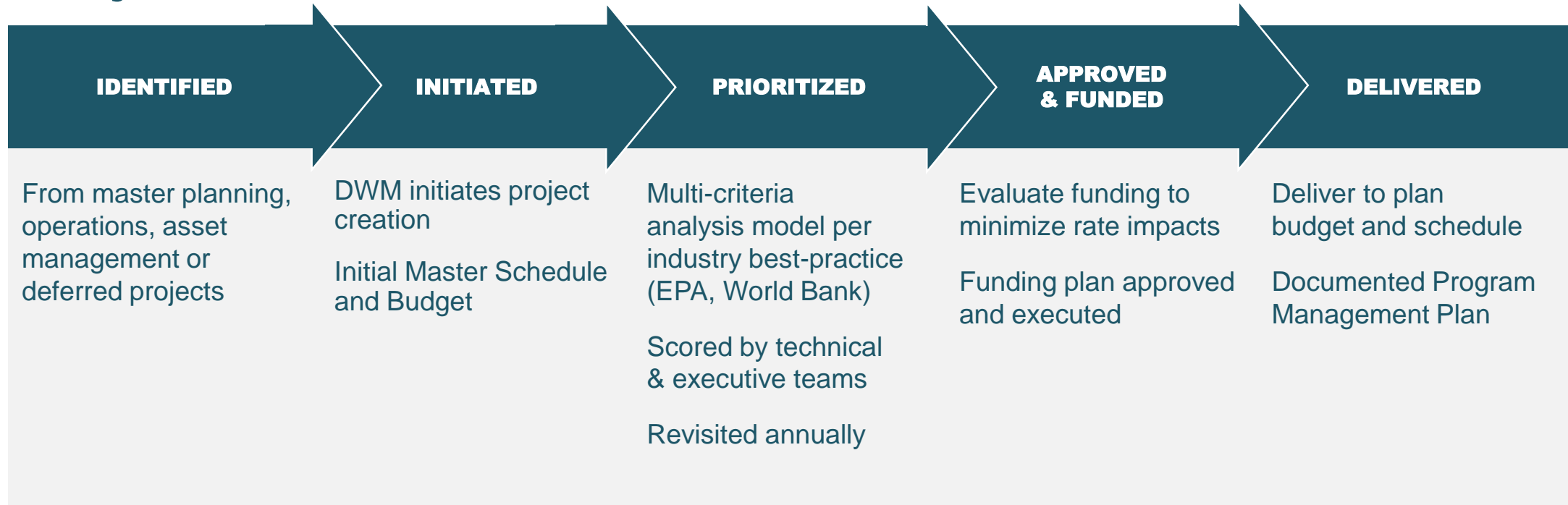
CIP PRIORITIZATION

Documented, Detailed, Inclusive & Data-driven




DATA-DRIVEN, BEST-PRACTICE PRIORITIZATION PROCESS

Projects are:



PROJECTS DEFINED & SCORED

DWM CIP Program - Project Information 

Project Manager: _____


Project Name	Project Number	Proposed Planning Budget	Date Created	Commissioner District	Project Manager
Dunwoody Ground Tank Replacement	W - DS GT01	\$6,733,000		XXXXX	
Design Schedule (anticipated)					
Duration		100% Design Submittal	Bid Document to P&C		
Procurement Schedule (anticipated)					
Advertisement	Pre-Proposal Conference	Proposal Opening	BOC Date	NTP	
Design Schedule (anticipated)					
Duration Days		Substantial Completion	Final Completion		


Description
 10 ft of 8-inch Water Main
 8-inch FCV and valve vault
 Dunwoody Existing Ground Tank Decommission
 Dunwoody Ground Storage Tank - 1 x 3 MG GST

Implementation Considerations
 implementation Considerations test

Details
 details test

Benefits
 benefits test



 **DWM Project Prioritization CIP Program**

Project Name **Overall Score**
Dunwoody Ground Tank Replacement **3.3/5**

Class	Criteria	Score	Justification
Environmental	Drinking Water Quality	Low	
	Leak Reduction	Medium	
	Energy Efficiency	Medium	
	Impact to Natural Resources	Medium	
	Permittability/ Regulatory Complexity	Medium	
Financial	Revenue Generation	Medium	
	Reduction of Operational Cost	Medium	
	Concurrence with Other CIP Projects	Medium	
Social	Employment (Job Creation)	Medium	
	Supporting Growth & Development	Medium	
	Quality of Life/Customer Satisfaction /Resilience	High	
	Public Health/Safety (Fire Protection)	High	

SUMMARY

Multi-criteria tool allows competing priorities to be systematically evaluated by a broad group of stakeholders

The process is best-practice, defensible, and reproducible

44 water and 105 wastewater projects identified, prioritized, and ranked

~80% of identified projects are in CIP 2021

Effective identification, scoring, and prioritization have been made possible with the Master Plan and hydraulic models

A blue-tinted photograph of a construction site. In the foreground, a deep trench is visible with several large pipes laid out along its length. Several construction workers wearing hard hats and safety vests are scattered throughout the site. To the left, a large piece of machinery, possibly a CAT excavator, is partially visible. In the background, there are trees, a fence, and a white pickup truck. The overall scene depicts an active construction project.

PROJECT OVERVIEW



ONGOING/RECURRING

INTERGOVERNMENTAL AGREEMENTS (IGA)

- ▶ City of Atlanta treats ~50% of the County's sewer load
- ▶ Coordinated projects with GDOT
- ▶ Gwinnett County

EMERGENCY & ANNUAL CONTRACTS

- ▶ Address unforeseen projects
- ▶ Task orders based on "bid tab" pricing

OTHER ANNUAL CONTRACTS

- ▶ Water meter installation, water service replacement and renewals, manhole raising, fire line & fire hydrant replacement, easement clearing, ongoing OSARP assessments

DWM STAFF, RENT, CONSULTANT & OVERHEAD COSTS



WATER TREATMENT

- ▶ Scott Candler Water Treatment Plant (SCWTP) rebuilt in 2007 and remains state-of-the-art
- ▶ Key projects address resiliency.
- ▶ Smallest spend category at 4% of CIP 2021 budget

◀ SCWTP is the sole drinking water plant in DeKalb and can treat up to 150 million gallons per day



^ Snapfinger Wastewater Treatment Plant

✓ Photo: Google Maps



WASTEWATER TREATMENT

- ▶ Snapfinger
 - ▶ Phase 2 complete in 2022, Phase 3A to follow immediately
 - ▶ Bulk of project category spend
- ▶ Pole Bridge
 - ▶ Minor system upgrades and resiliency
- ▶ Wastewater Treatment is 5% of CIP 2021 budget



Major Investment 1 -
**Next Phase of Consent
Decree Projects**

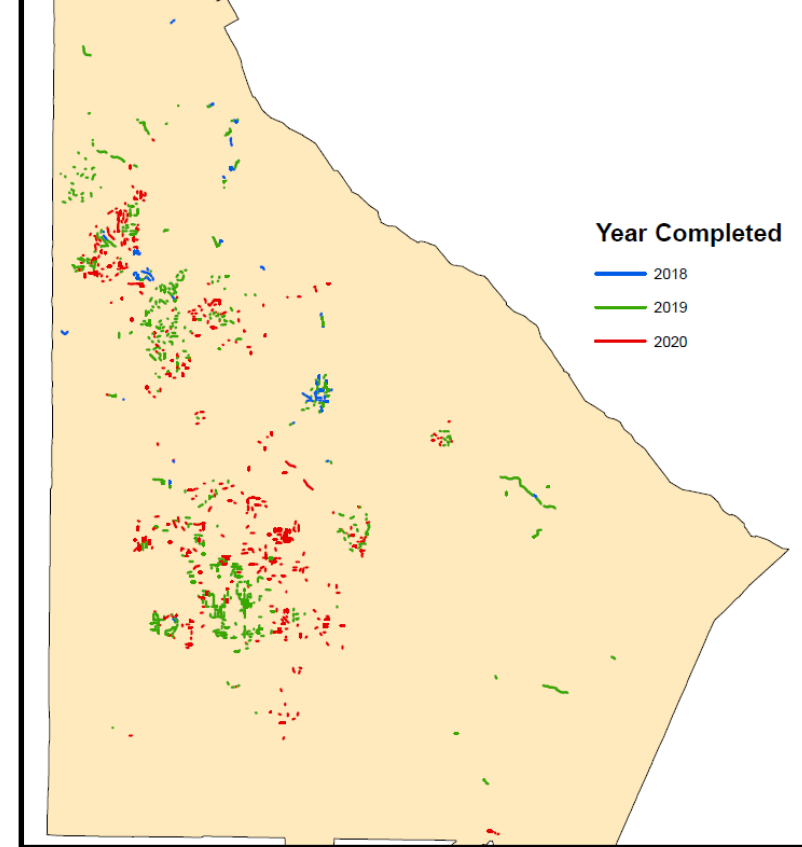
TO DATE

Maintenance Activities Completed

- ▶ 2910 tons of debris removed
- ▶ 6,315 creek crossings inspected
- ▶ 435 miles of sewer pipes treated for root control
- ▶ 2,992 vented manhole covers replaced
- ▶ 20 million square feet of easement cleared

CD-Required Rehabilitation

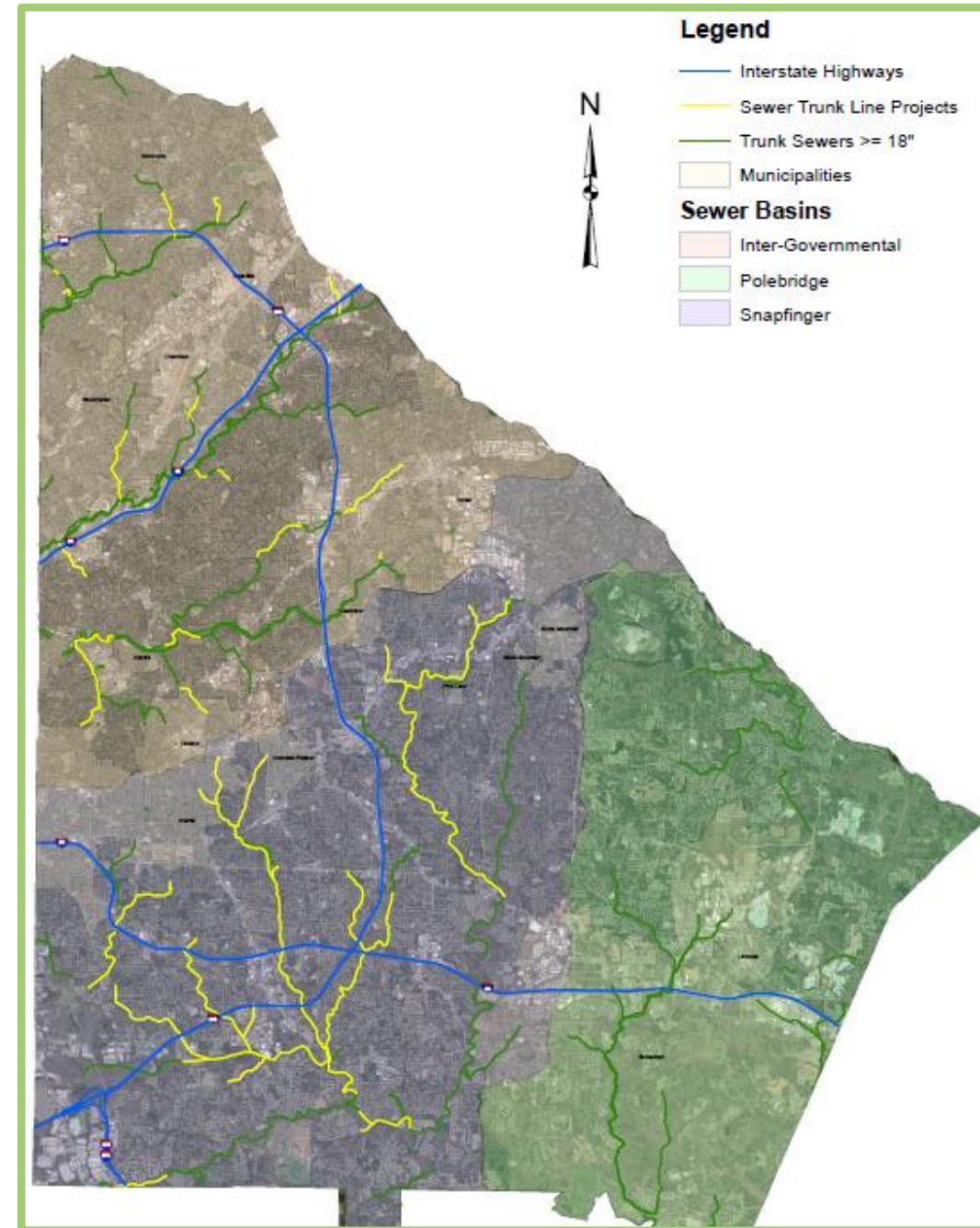
- ▶ 133 miles of pipe lining
- ▶ Spot repairs on 28 miles
- ▶ 10 miles of pipe replacement
- ▶ 35 miles of small diameter sewer pipe upsizing



Repair, Replace, or Install 59 miles of New Trunk Sewer Lines

SEWER BASIN	LENGTH (MILES)
Snapfinger	41
Pole Bridge	3
South Fork Peachtree Creek	10
North Fork Peachtree Creek	4
Nancy Creek	1
TOTAL	59

Greatest needs in the Snapfinger Basin (~41 miles)



What is a trunk sewer?

- ▶ The county's trunk sewer lines range from 30 inches to 72 inches in diameter.
- ▶ Trunk sewers receive wastewater from many tributary feeder branch sewer lines.
- ▶ They convey the combined flows to the treatment plants.



Snapfinger Basin Project Example

Part of the Snapfinger Basin Project includes the Shoal Creek Trunk Sewer Upgrade

Initial studies and procurement started

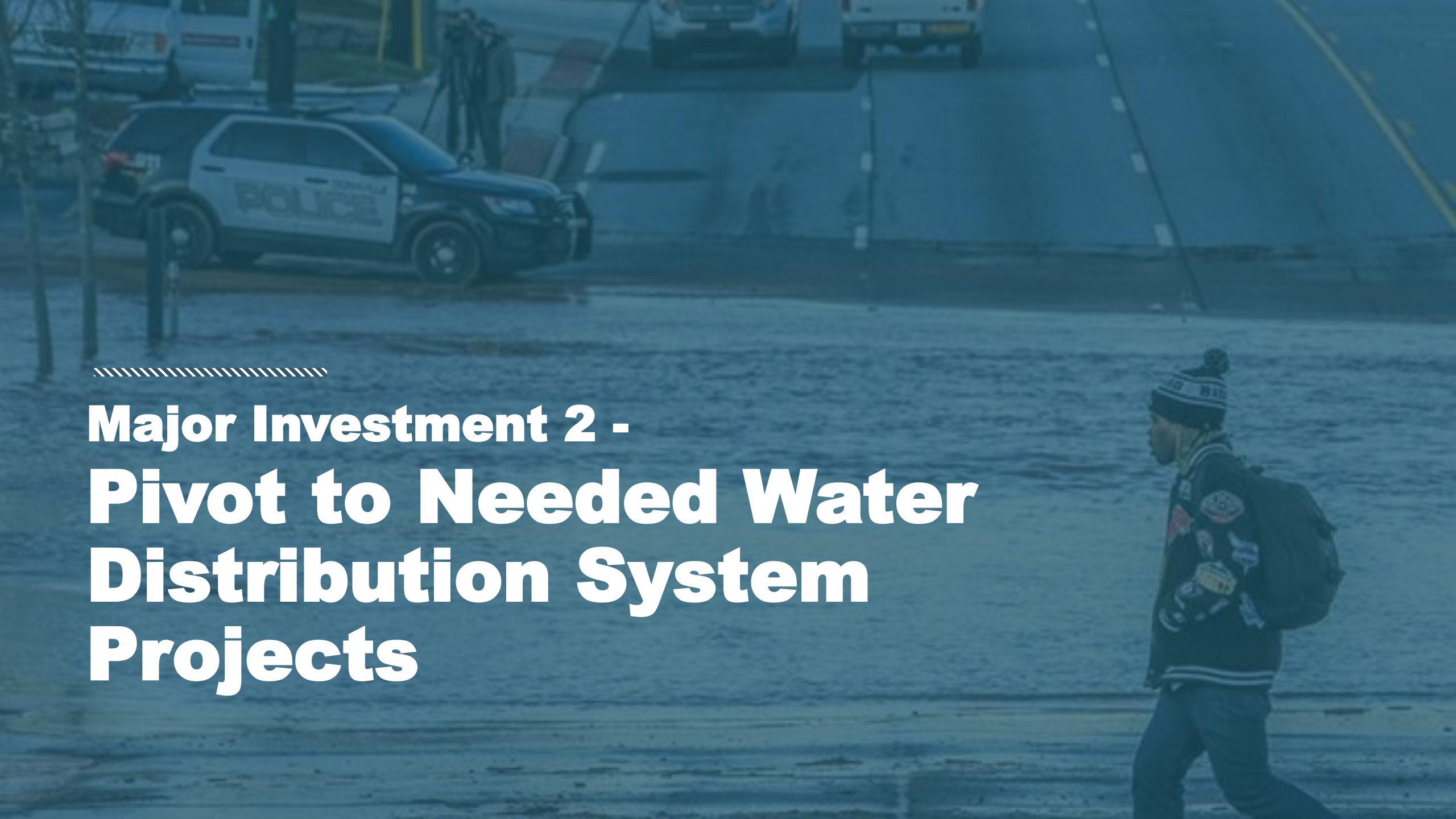
- | | |
|------|---|
| Size | <ul style="list-style-type: none">• 10 miles of major trunk sewer capacity projects• Up to equivalent of 72-inch main• Storage tanks up to 20 million gallons |
|------|---|

- | | |
|-------------------|--|
| Permit Challenges | <ul style="list-style-type: none">• 3 highway crossings (Memorial Dr., Glenwood Rd., Flat Shoals Pkwy.)• 2 interstate crossings (I-20 and I-285)• Mostly adjacent to Shoal Creek and South River |
|-------------------|--|

126 properties on main Shoal Creek trunk alone

Trunk Sewer Project Cost Estimates

Project Type	Snapfinger Basin	Whole County
Trunk Sewer Pipe Capacity	\$193 million	\$268 million
Sewer Tank Storage	\$170 million	\$170 million
TOTAL	\$363 million	\$438 million



Major Investment 2 -
**Pivot to Needed Water
Distribution System
Projects**

WATER DISTRIBUTION



✓ Tuberculation: build-up of corrosion that restricts water flow

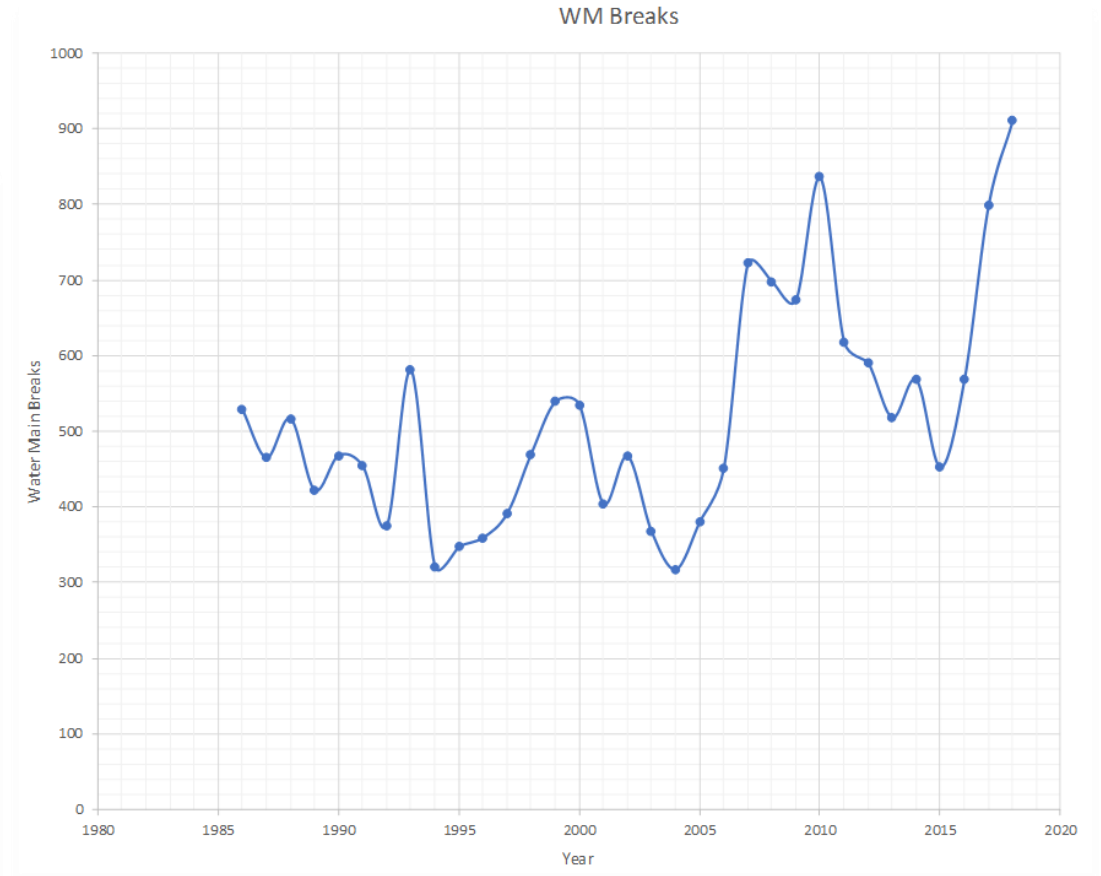
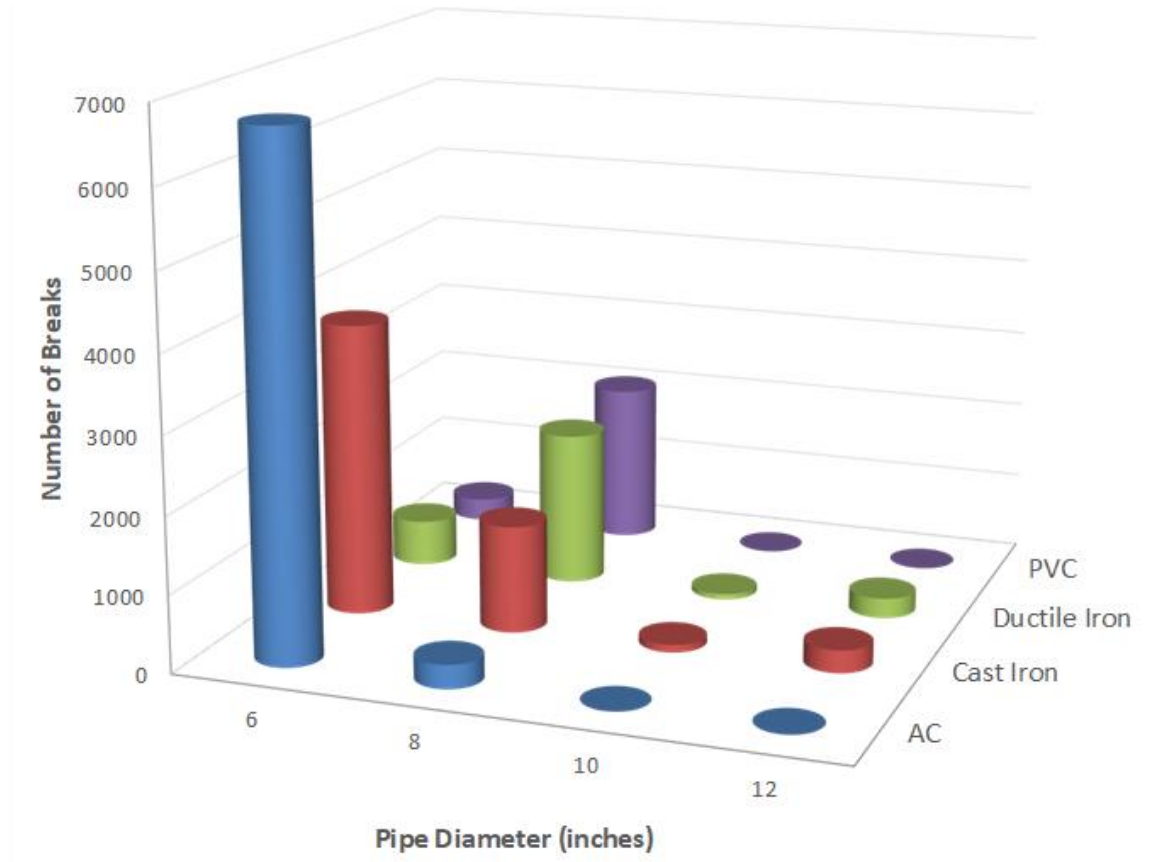
✓ Aging AC pipe is past its service life and prone to breaks.



- ▶ By 2030 ~600 miles of water pipe needs replacement due to age, size or material type
- ▶ Age of pipes can cause risk of breaks or tuberculation
- ▶ Now prioritizing projects based on a new risk-based approach and hydraulic modeling, ensuring a need and operational efficiency from each project implemented
- ▶ Non-revenue water at unacceptable levels
- ▶ 36% of CIP 2021 budget

COSTS OF AN AGING WATER SYSTEM

- ▶ Breaks are increasing as the water distribution system ages



- ▲ Water main breaks per year (1986-2018)
- ◀ Breaks by pipe type and size (1986 to 2018)

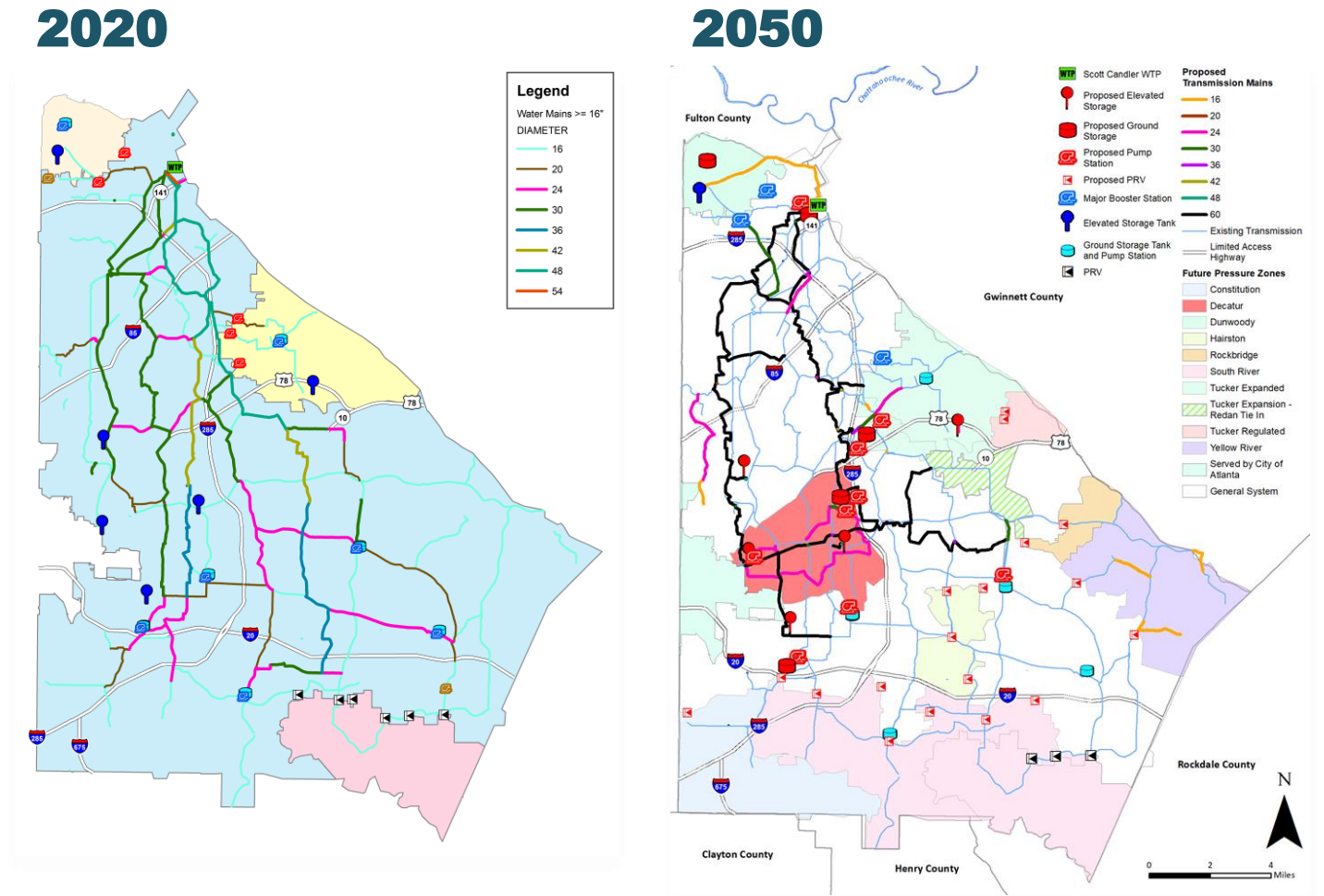
PROBLEMATIC PIPE TYPES

MATERIAL	LENGTH (MILES)	BREAKS (% of overall)	CHALLENGE
PRESTRESSED CONCRETE PRESSURE PIPE (PCCP)	7	<1	9x as likely to break as other materials, often catastrophically
ASBESTOS CEMENT (AC)	522	35	High break rate after 50-70 years of service (132 miles already greater than 65 years old)
POLYVINYL CHLORIDE (PVC)	210	12	
CAST IRON (CI)	820	27	Pipe will tuberculate with age, substantially reducing water flow (e.g. Briarcliff water pressure project)

- ▶ 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: 1290 miles (install date 1970 or earlier)
 - ▶ By 2050: 1745 miles (install date 1980 or earlier)

SYSTEM DEVELOPMENT


- ▶ Looped mains are industry best-practice for resiliency
- ▶ Additional capacity of water service “backbone” required to:
 - ▶ Meet levels of service in future years
 - ▶ Increase resiliency
- ▶ New pressure zones recommended to manage:
 - ▶ High and low pressures
 - ▶ Local storage
 - ▶ Reduce breaks and non revenue water



RULES OF THUMB

ONCE THE SYSTEM IS STABILIZED ... CAN MOVE TO 1% RULE ON PIPES

- ▶ Pipe lifespan: ~100 years
- ▶ Minimum 1% of pipe needs to be replaced per year



6,000 MILES
OF WATER &
SEWER PIPE
IN DEKALB
COUNTY

1% = 60 MILES
60 MILES =
~\$100 M/YR to
replace

NEXT STEPS



Next Steps

**CIP 2021
Approved**

Governing Authority approval of projects and priorities.

**Revenue
Optimized**

Ensure we are optimizing revenues and minimizing costs, and all are paying their fair share.

**Funding Plan
Approved**

Implement plan to fund in a responsible and sustainable way.

HOW CAN WE HELP?

Please Visit The CIP 2021 SharePoint Site

Any issues, please contact:

AVIS BLANTON

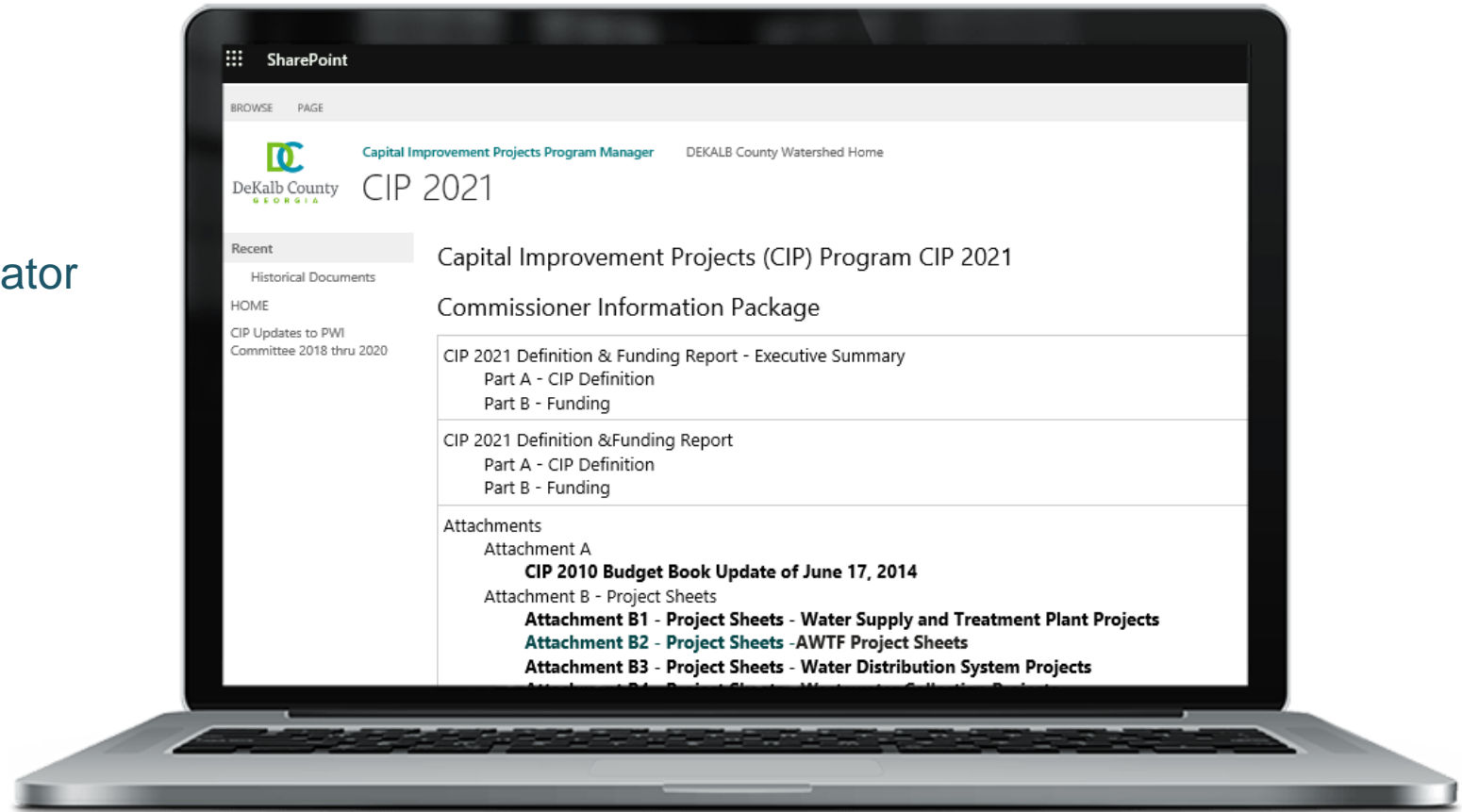
AECOM

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QUESTIONS?



DeKalb County
Contractor
New Day Project

DeKalb County
**NEW DAY PROJECT
WATER METER
REPLACEMENTS IN
PROGRESS**

Questions?

Call (404) 378-4475 or visit www.dekalbcountyga.gov/newdayproject