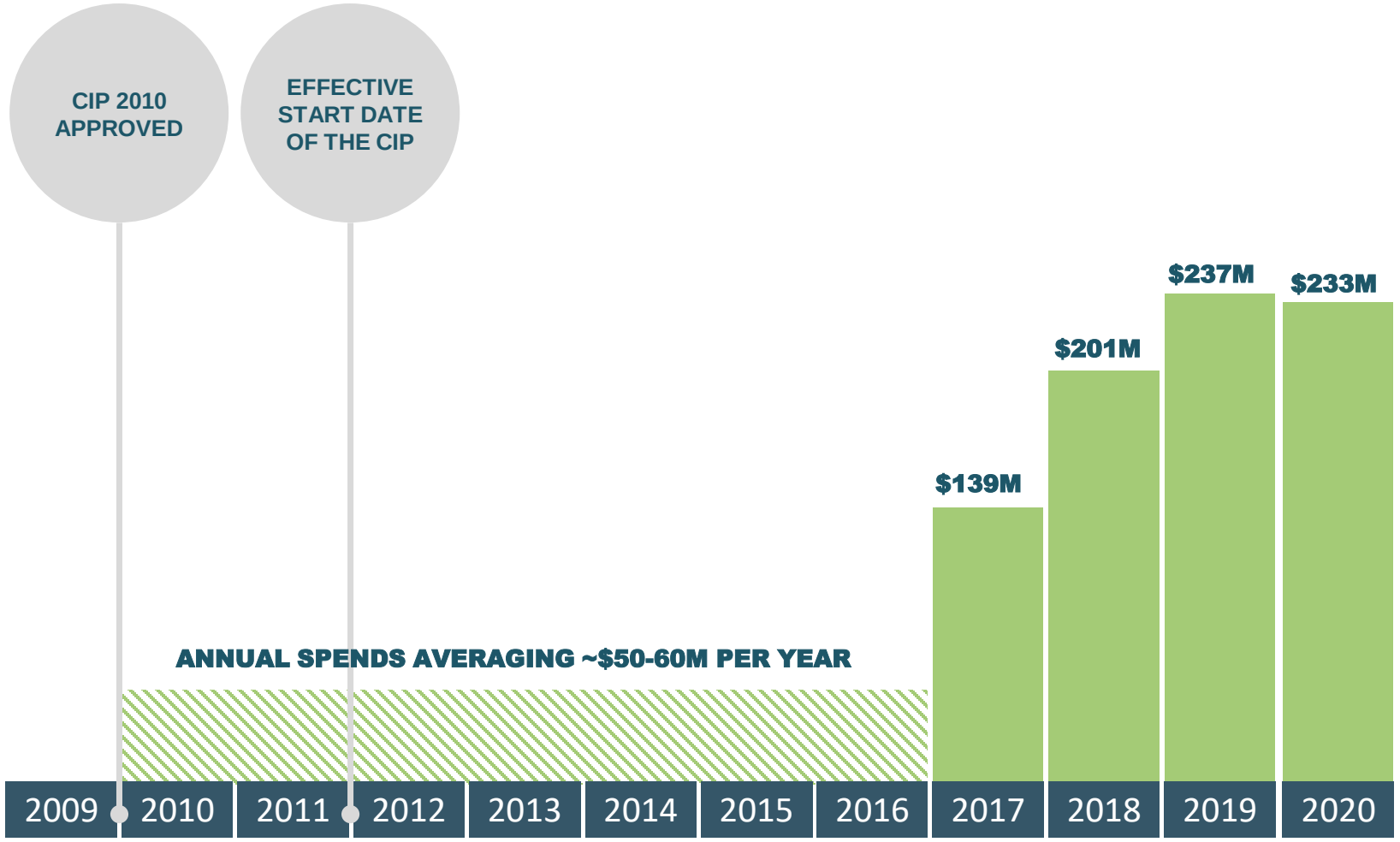
CIP 2021 DEFINITION & FUNDING REPORT

Part 1: History and GEFA Loan
Part 2: CIP 2021 Definition
Part 3: Funding

August 2020

CIP 2010 – An Unfulfilled Commitment

- CD and CIP Program Managers not contracted until 2014 and 2015
- Only 27% of the 5-year CIP 2010 completed through 2016 (planned horizon)



RECAP

CIP 2010 – An Unfulfilled Commitment

- $1.345 B, 5 years
- 5-6 yr delay in key management contracts
- Only 27% delivered through 2016

PIVOT IN 2017-2020 ALLOWS NEW APPROACH FOR CIP 2021

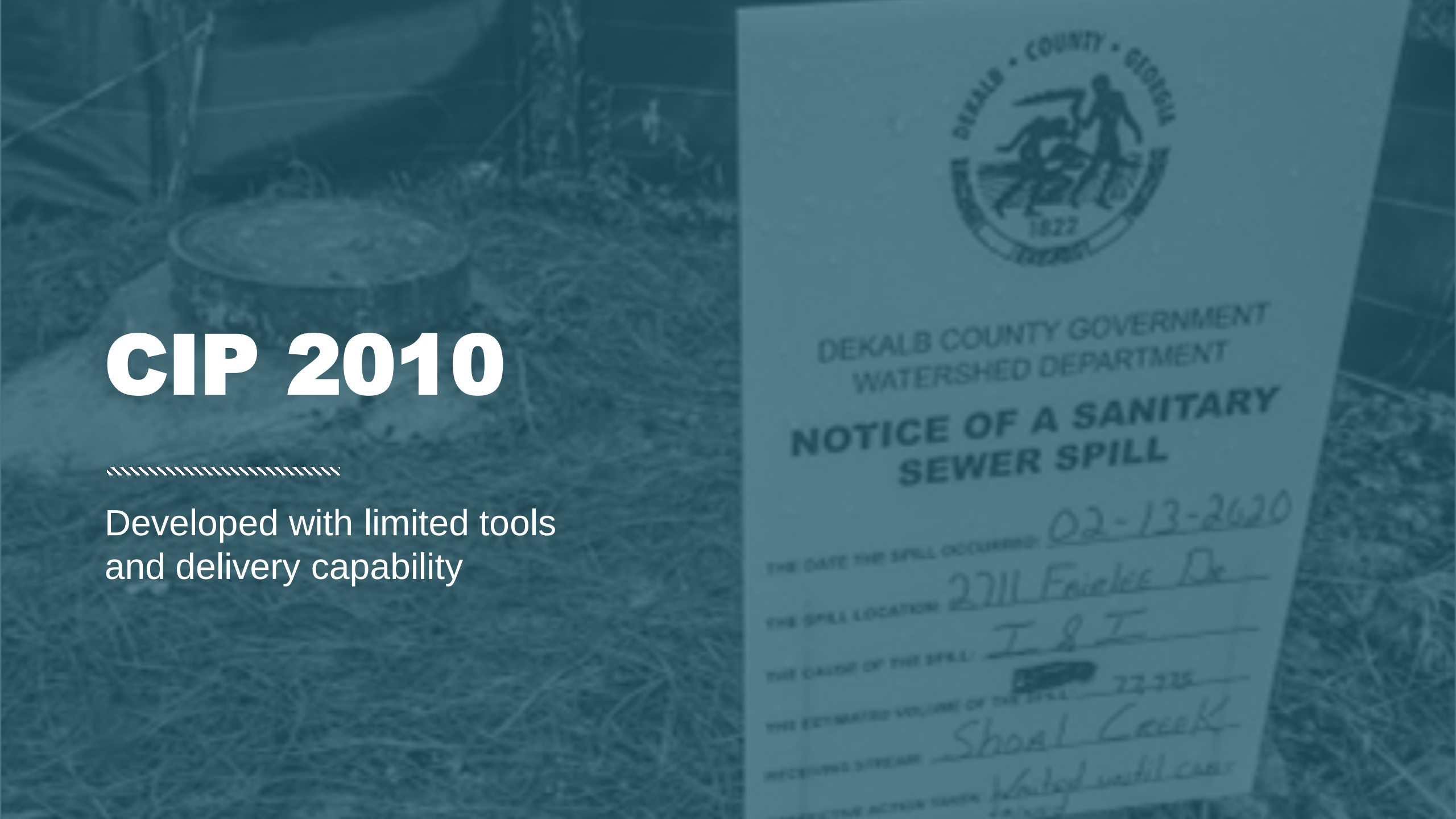
- Hydraulic models – W+WW
- Master Plan – W+WW
- CD amendment
- Exceptional financing options identified (WIFIA + GEFA)
- Documented processes
- Best-practice, data-driven project prioritization process

EARLY FINANCIAL APPROVAL

- GEFA loan approved to proceed to negotiation by both GEFA and DeKalb Boards
- WIFIA critical dates approaching

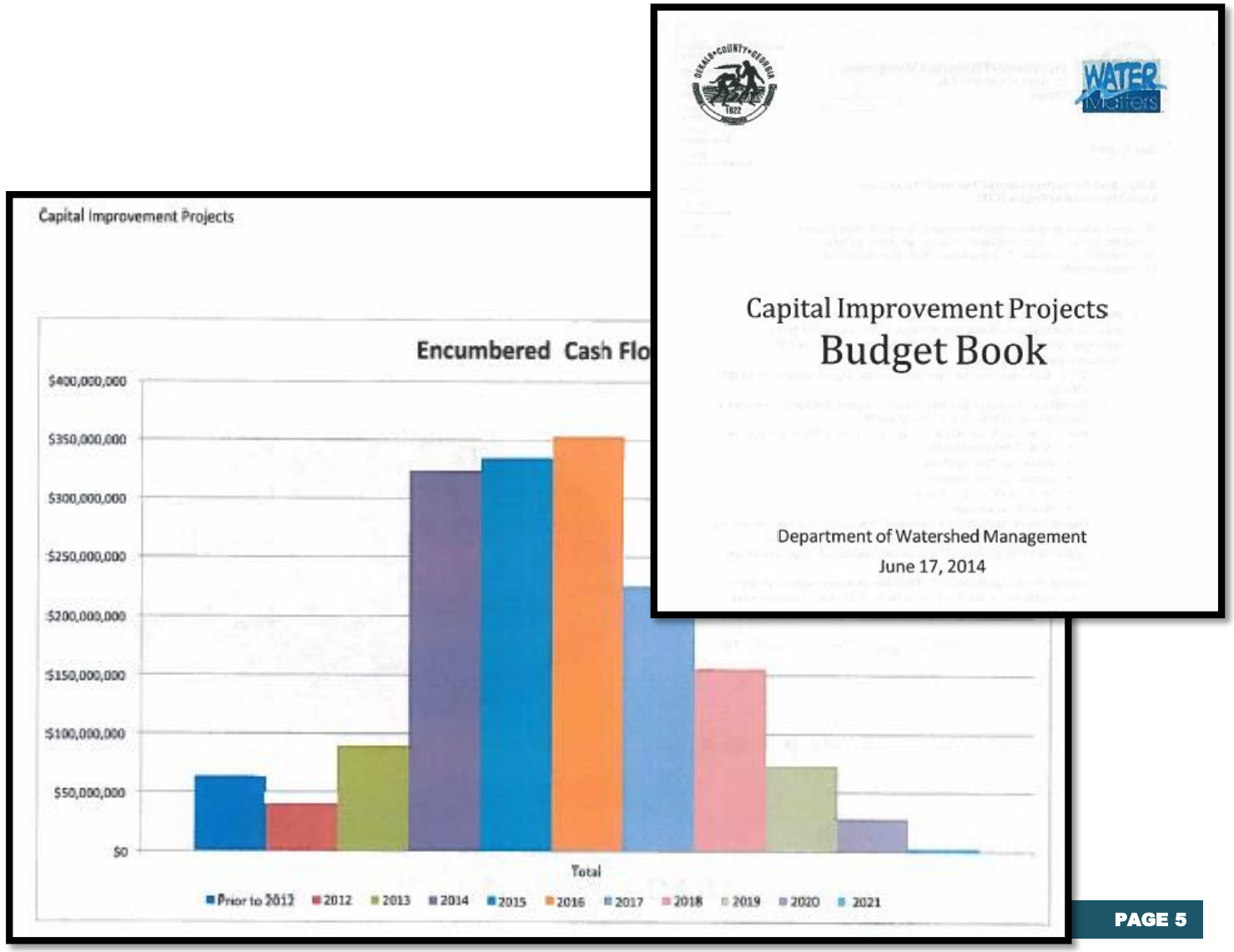
CIP 2010

Developed with limited tools
and delivery capability



CIP 2010 – DEVELOPED WITH LIMITED ANALYSIS & EVALUATION

- CIP 2010 – A collection of projects identified without the benefit of:
  - Water/wastewater Master Plan
  - Water or wastewater hydraulic models
  - CD-required PASARP assessments
  - Disconnected to CD
- Revised in 2014 CIP Budget Book
  - Based on overly aggressive assumptions of ~$300-350 M/yr spends 2014 through 2016

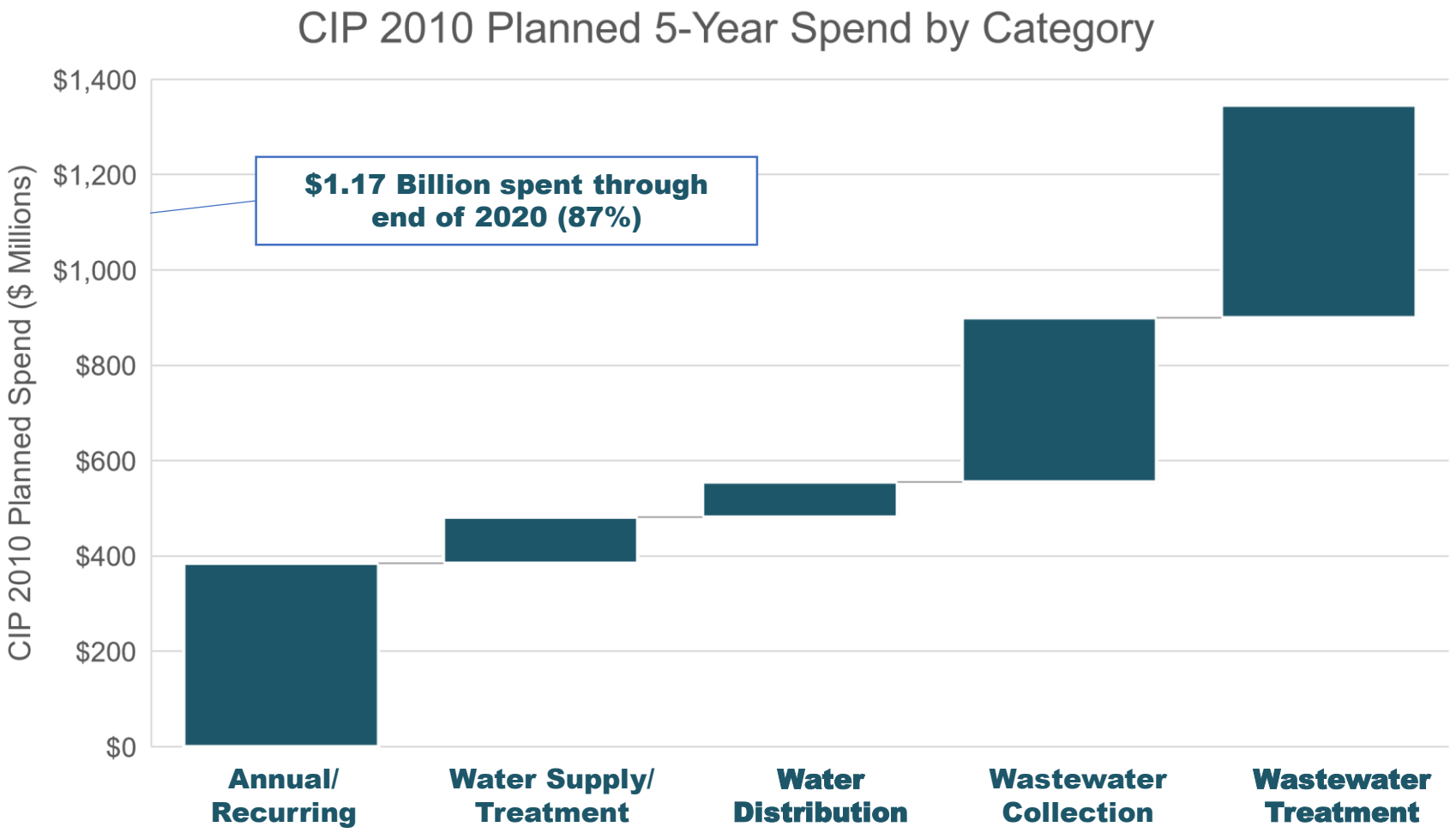


CIP 2010 OVERVIEW

2011-2015
$1.345 BILLION

PLANNED
$270 M/YR
Average annual investment

5 PROJECT CATEGORIES
Annual/Recurring
Water Supply and Treatment
Water Distribution
Wastewater Collection
Wastewater Treatment

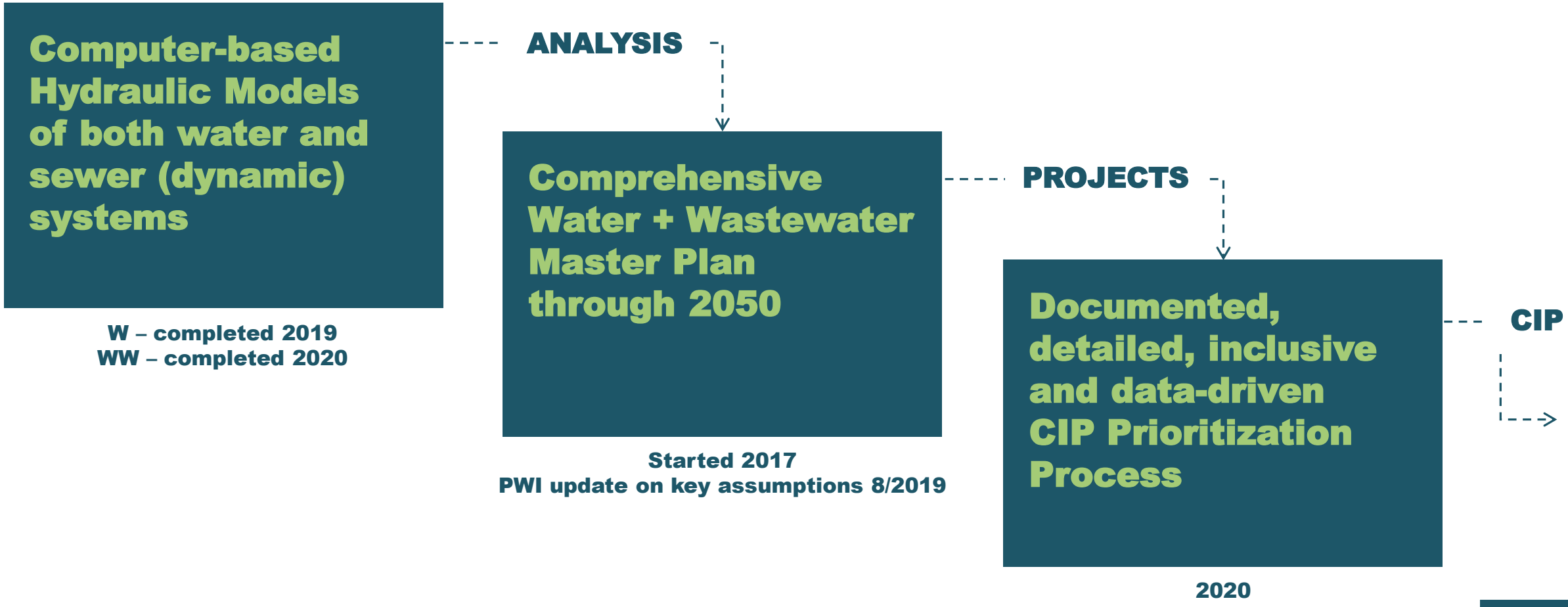


CIP 2021 DEVELOPMENT

A new era of planning that ensures responsible management, oversight and accountability.

PIVOT TO NEW PROCESSES FOR CIP 2021

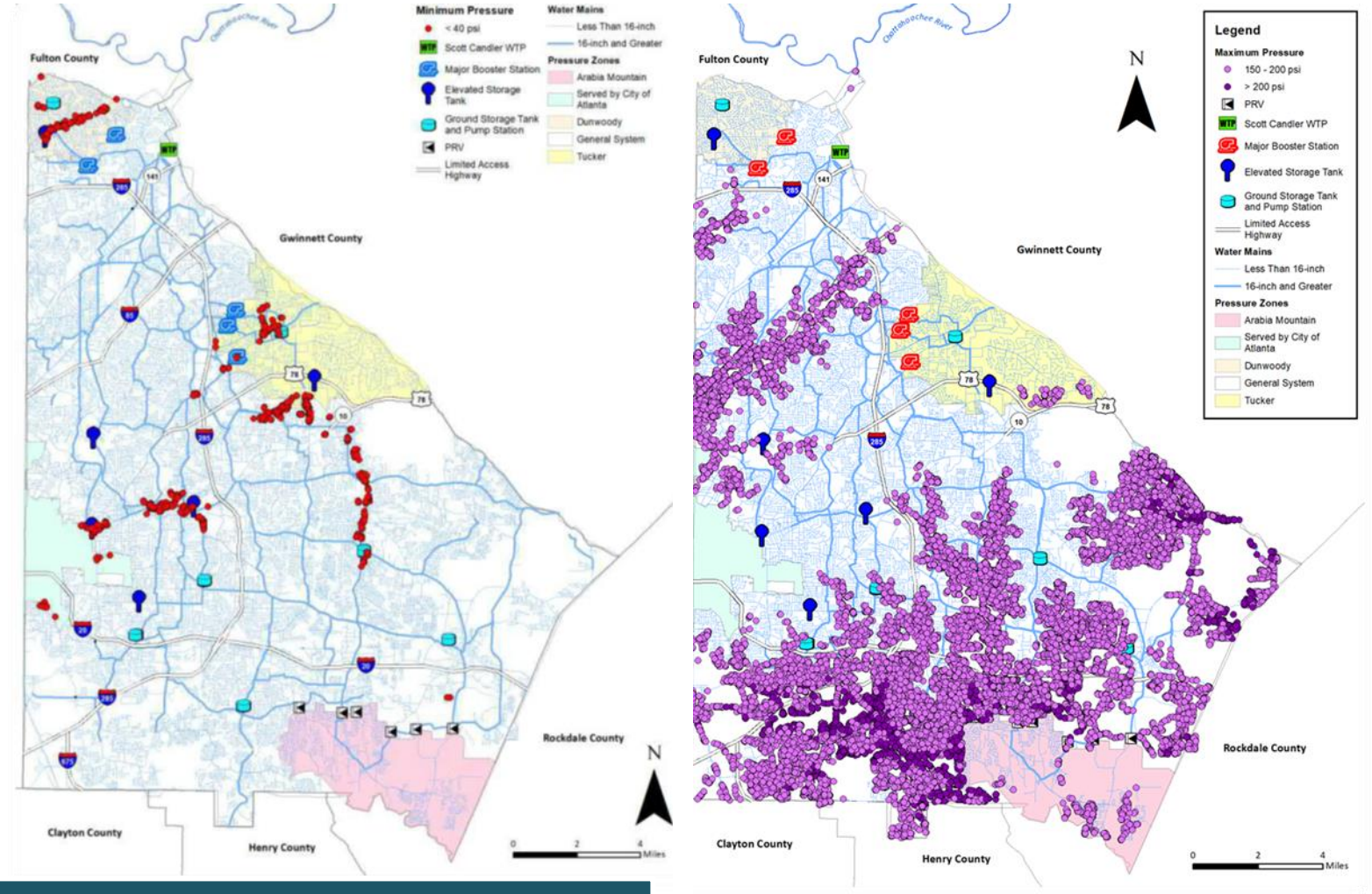
STATE-OF-THE-ART TOOLS ALLOW BEST-PRACTICE PLANNING & PRIORITIZATION



COMPUTER-BASED HYDRAULIC MODELS

Allow new level of understanding of the performance of DWM's system

- Identify & troubleshoot system issues (e.g. Briarcliff 2019)
- Evaluate and compare alternative future scenarios
- Compare costs and benefits of different alternative servicing solutions



WATER MODEL SAMPLE OUTPUT

DWM's FIRST WATER & SEWER MASTER PLAN

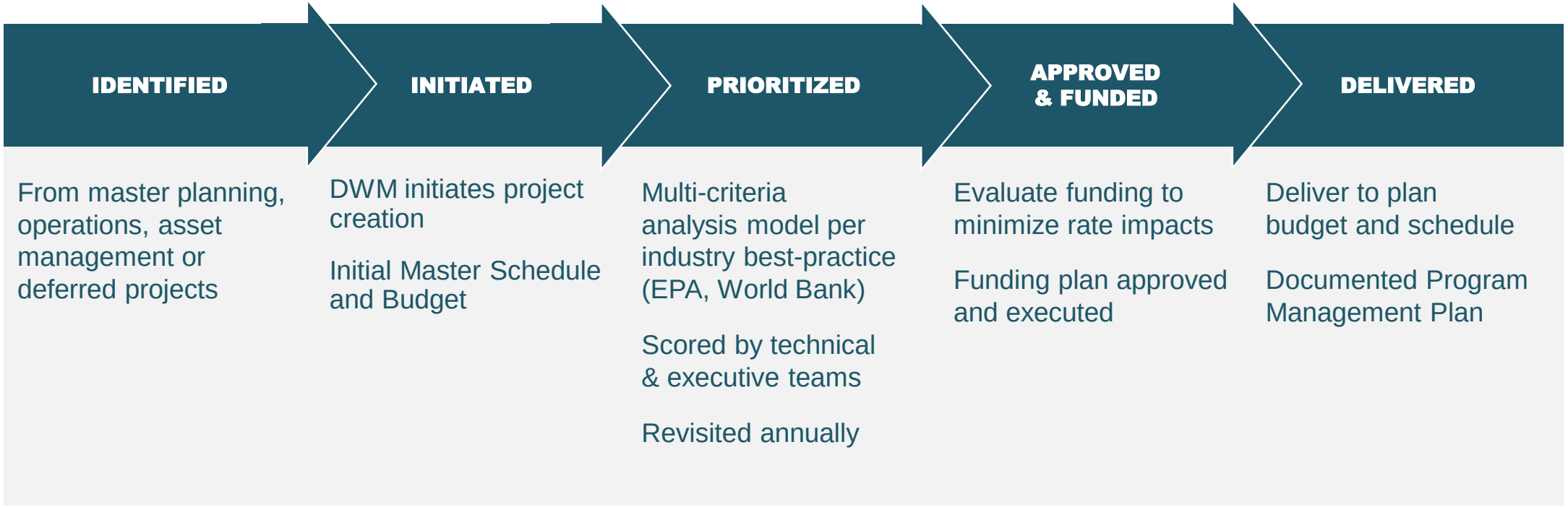
- Strategic planning for 2020-2050, with view to 2070
- Project future demand levels based on best-practice projections of future population and employment
- Develop and evaluate servicing alternatives to meet future demand
- CIP 2021 is the short-view, 10-year, action plan of the Master Plan.

STAKEHOLDER INVOLVEMENT

- DeKalb County Executive
- DeKalb County Board of Commissioners
- DWM Project Management Teams
- DWM Leadership
- Technical Committee (DWM technical, operational and CDPMT staff)
- Steering Committee (incorporated cities and local agencies in DeKalb County – MARTA, DMA)
- Other DeKalb County department leadership and support staff (Planning, Fire Rescue)
- Regional and state agencies (consultation regarding permit requirements)

DATA-DRIVEN, BEST-PRACTICE PRIORITIZATION PROCESS

Projects are:



PROJECT PRIORITIZATION

- Multi-criteria tool allows competing priorities to be systematically evaluated by a broad group of stakeholders
- 44 water and 105 wastewater projects identified to meet level of service, prioritized and ranked - with ~80% in CIP 2021

FACTORS	FACTOR WEIGHT	CRITERIA	CRITERIA WEIGHT
COMPLIANCE	50%	Water Quality / Surface Water Quality	5%
		Tighten of System	5%
		Public Health & Safety	30%
		Regulatory Compliance	30%
		Resilience	30%
FINANCIAL	20%	Cost Recovery	25%
		Reduction of Operational Cost	25%
		Concurrence w/ Other CIP Projects	25%
		Life Extension of Asset	25%
SOCIAL & ENVIRONMENTAL STEWARDSHIP	30%	Employment (More Jobs)	10%
		Economic Growth / Development (Social Justice)	30%
		Quality of Life / Customer Satisfaction	30%
		Impacts to Natural Resources	10%
		Energy Efficiency Lower Carbon Footprint	20%

PROJECTS DEFINED & SCORED

DWM CIP Program - Project Information

Project Manager:

Project Name	Project Number	Proposed Planning Budget	Date Created	Commisioner 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 Openig	BOC Date	NTP

Design Schedule (anticipated)		
Duration Days	Substatial 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

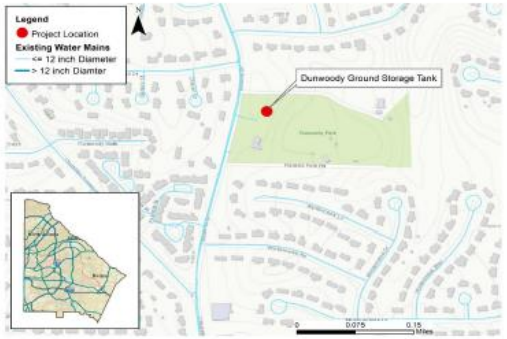
implementation Considerations test

Details

details test

Benefits

benfits test



DeKalb County GEORGIA

DWM Project Prioritization
CIP Program

Project Name
Dunwoody Ground Tank Replacement

Overall Score
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	

STAFF PROPOSED ANNUAL CYCLE OF CIP PRIORITIZATION

- Projects revisit prioritization before any they progress to the next phase of Delivery (Planning, Design, Construction)
- Ensures multi-year projects are in line with changing funding and needs

MONTH	ACTIVITY	LEAD	INPUT
JANUARY	New Funding in Place	Finance	
	Close Financials From Previous Calendar year	CIP PMO	Finance
FEBRUARY	Prepare Project Information Sheets	CIP PMO	
MARCH	Gather Scoring Data		
APRIL	Project Prioritization	CIP PMO	Technical Committee
MAY			Executive Committee
JUNE	Match Funding Needs & Projects Prioritized	CIP PMO	Finance
JULY			
AUGUST	BOC Approval of CIP & Funding	CIP PMO	Finance
SEPTEMBER			
OCTOBER			
NOVEMBER	Implement New Funding For New Year		
DECEMBER			

OVERVIEW OF CIP 2021 PROJECTS

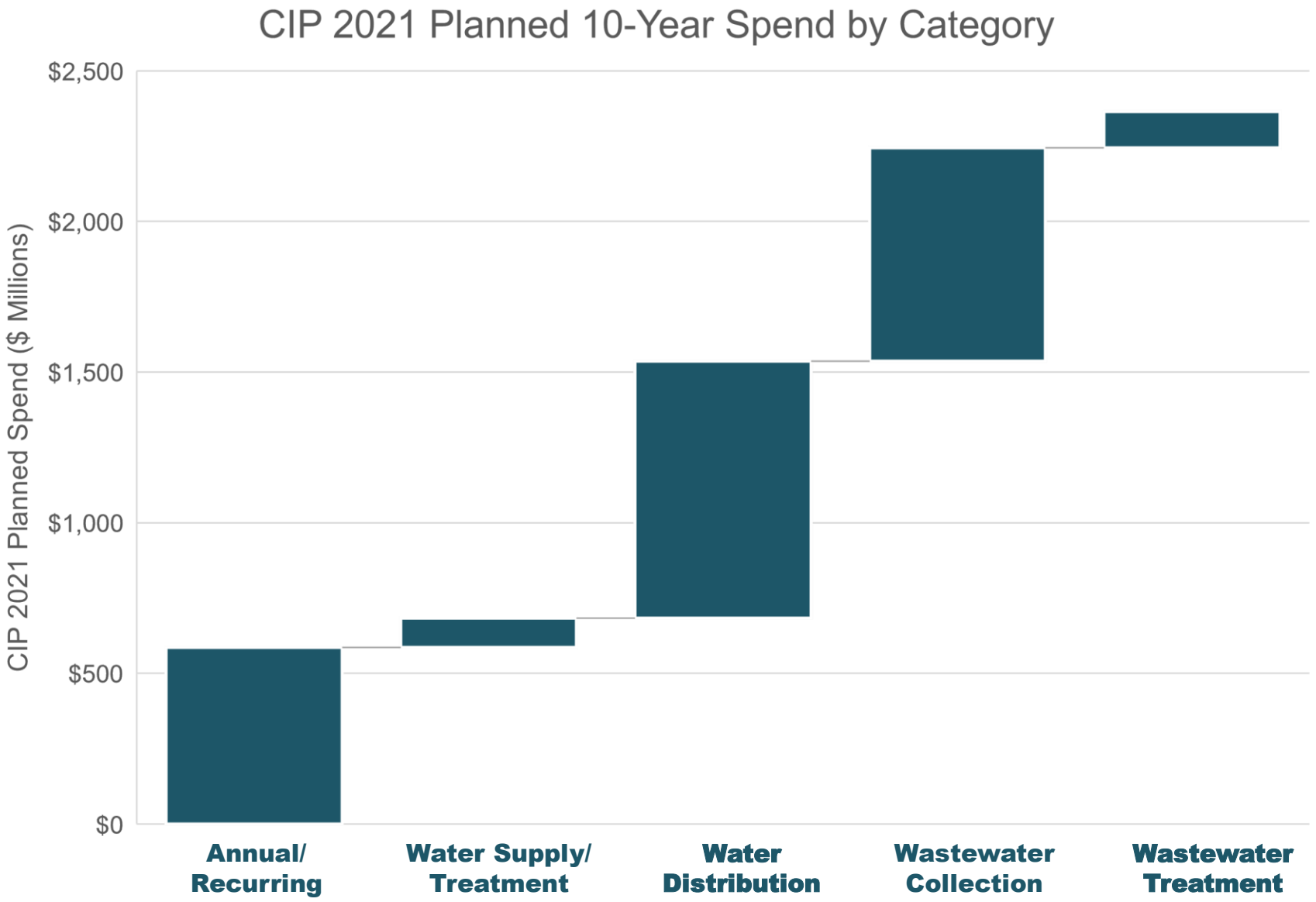
CIP 2021

PROPOSED PLANNED SPEND $235 M/YR

Average annual investment

5 PROJECT CATEGORIES

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

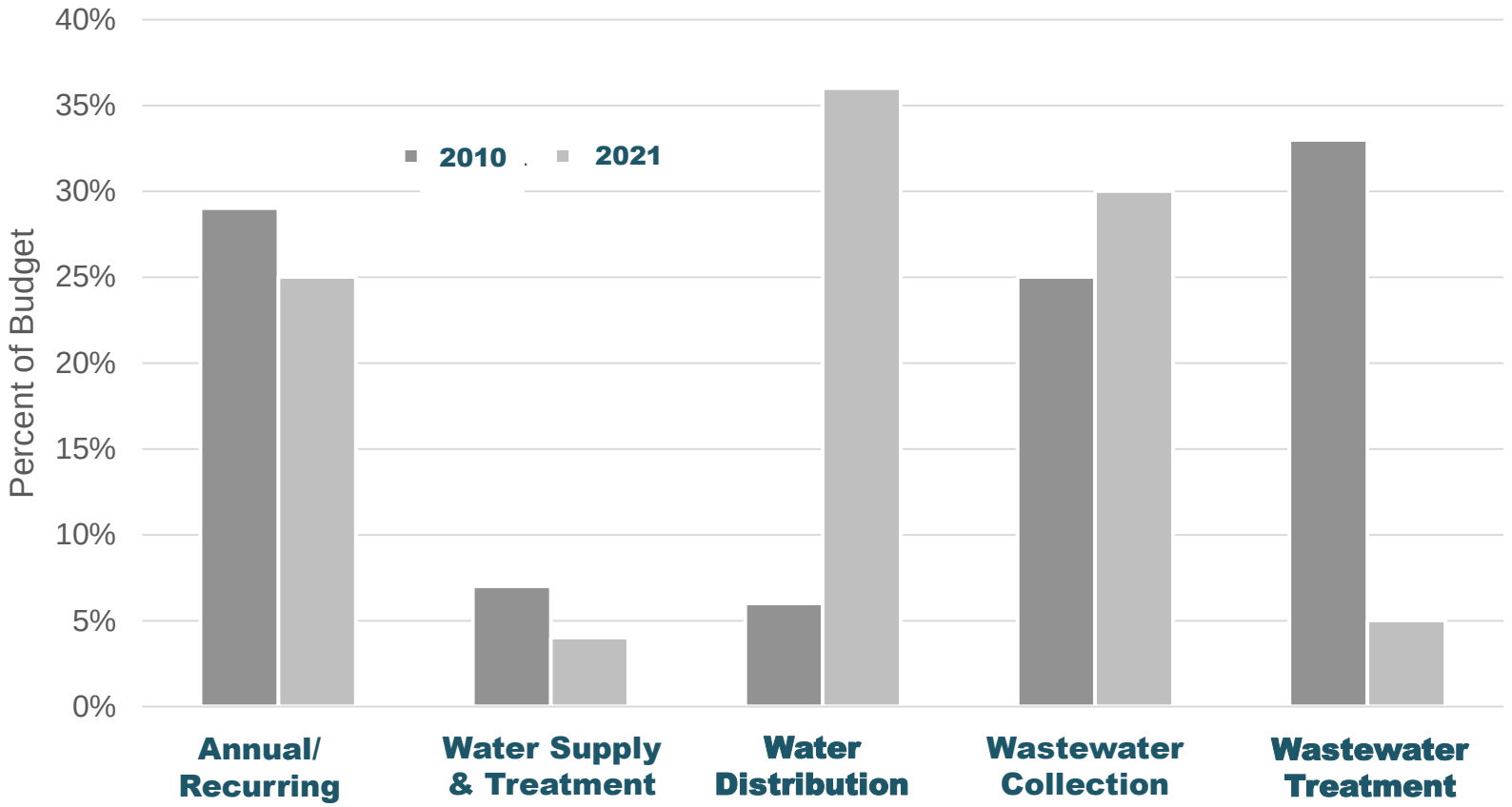


CIPs 2010 AND 2021 COMPARED

PERIOD
CIP 2010 – 5 yrs
CIP 2021 – 10 yrs (1)

INVESTMENT
CIP 2010 – $1.3B
CIP 2021 – $2.4B

ANNUAL SPEND (2)
CIP 2010 – $269M/yr
CIP 2021 – $235M/yr



Staff is proposing:
(1) 10 year period, but with annual review process
(2) Lower annual spend than CIP 2010

ONGOING/RECURING

INTERGOVERNMENTAL AGREEMENTS (IGA)

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

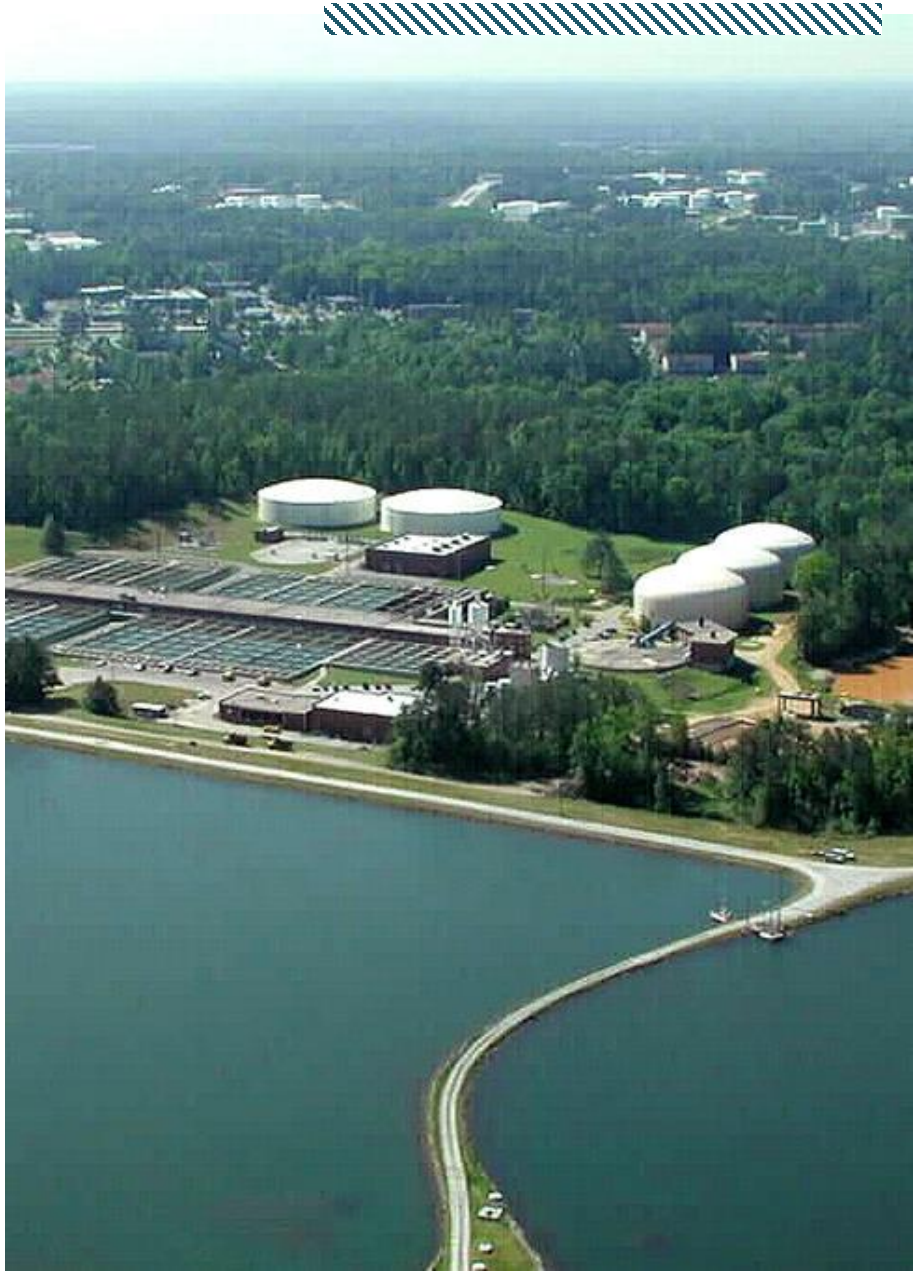
EMERGENCY & ANNUAL CONTRACTS

- 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

WASTEWATER TREATMENT

Snapfinger Wastewater Treatment Plant

Photo: Google Maps

- 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

WATER DISTRIBUTION

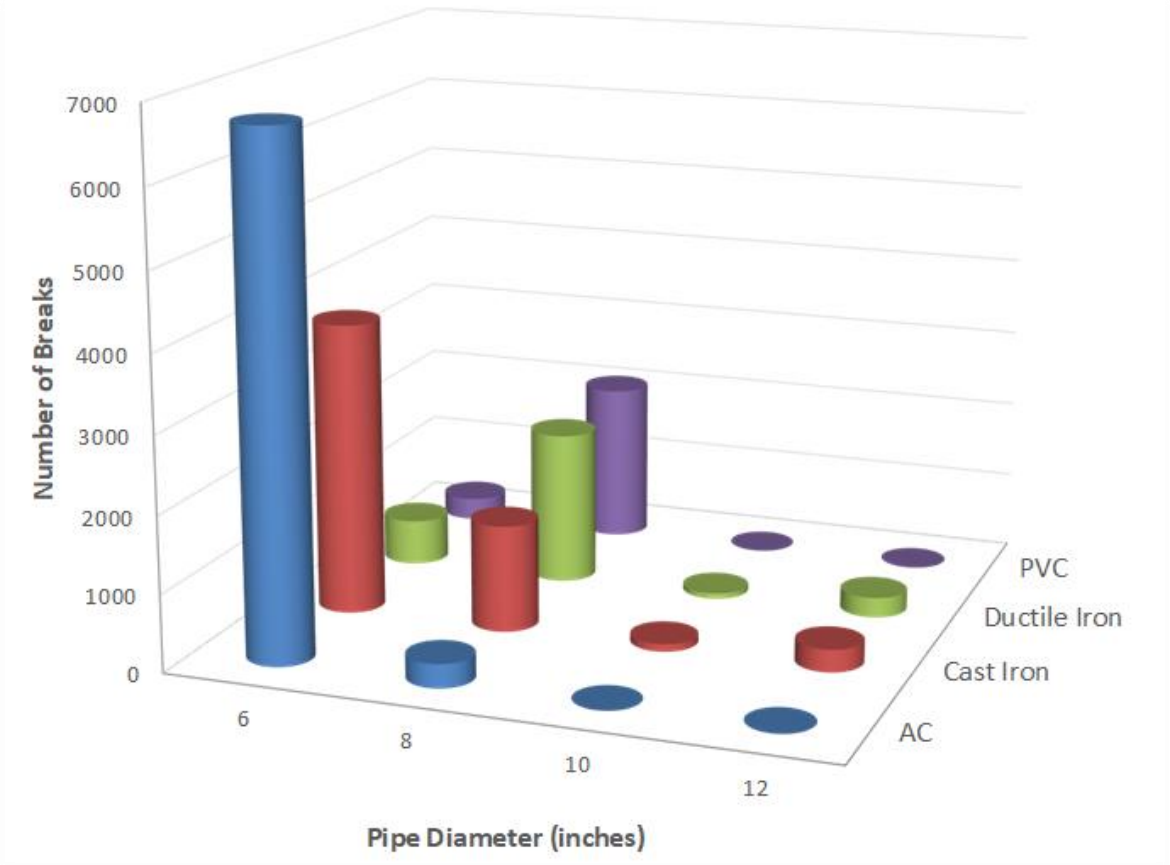
Tuberculation: build-up of corrosion that restricts water flow

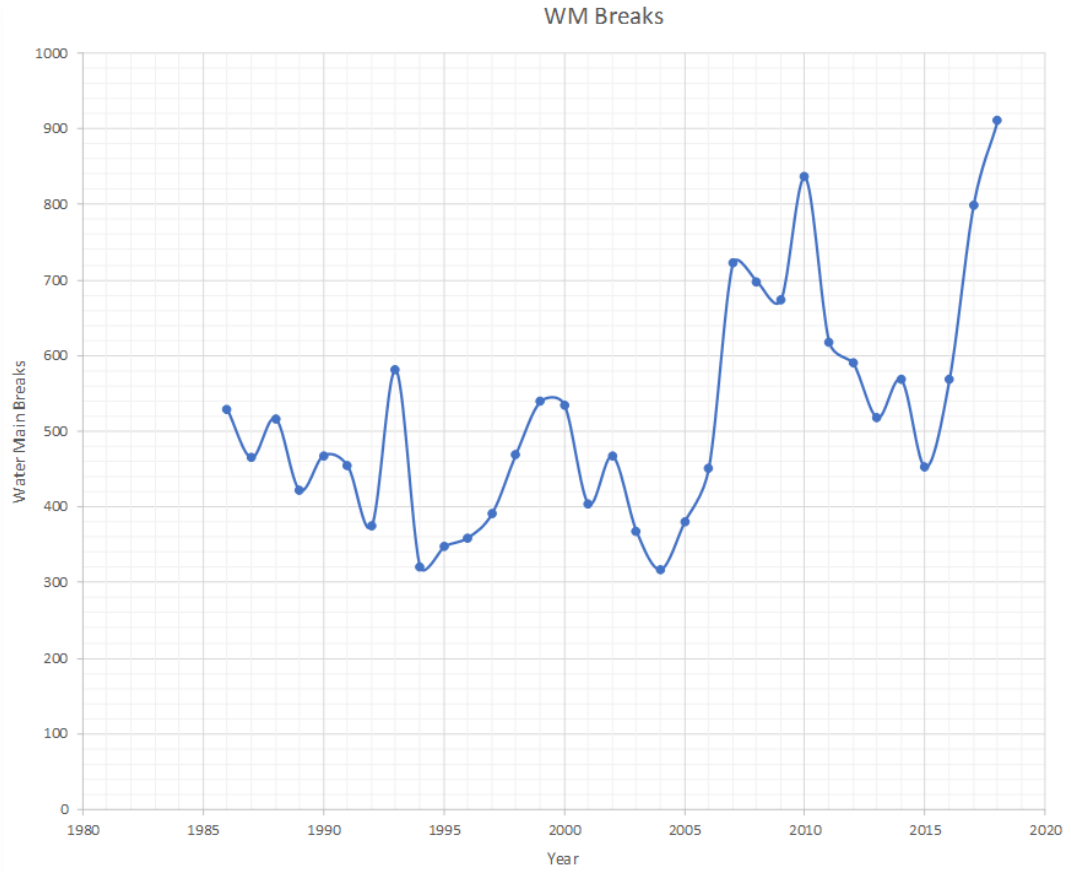
Aging AC pipe is past its service life and prone to breaks.

- 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

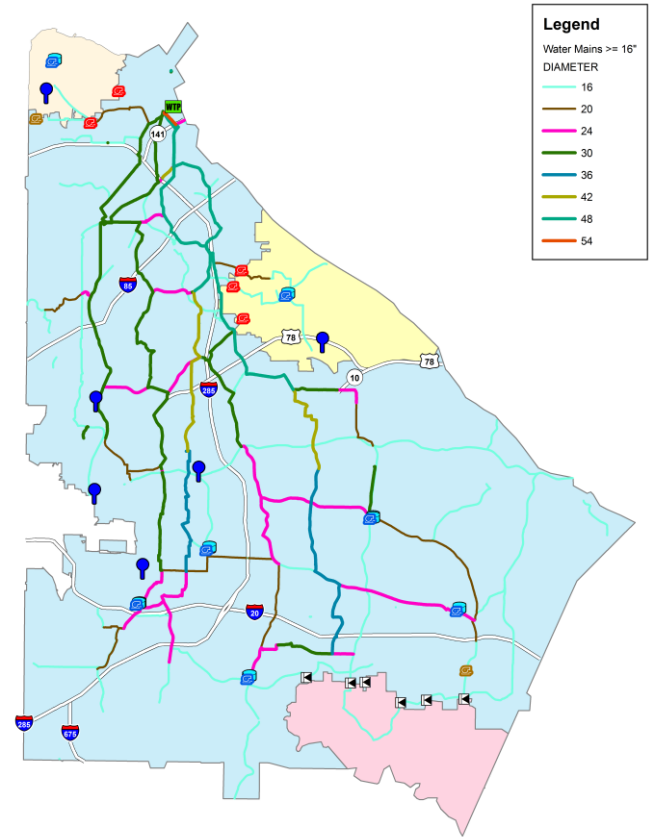
MATERIAL	LENGTH (MILES)	BREAKS (% of overall)	CHALLENGE
PRESTRESSED CONCRETE PRESSURE PIPE (PCCP)	7	<1	9x as likely to break as other materials, often catastrophically
ASBESTOS CEMENT (AC)	522	35	High break rate after 50-70 years of service (132 miles already greater than 65 years old)
POLYVINYL CHLORIDE (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)

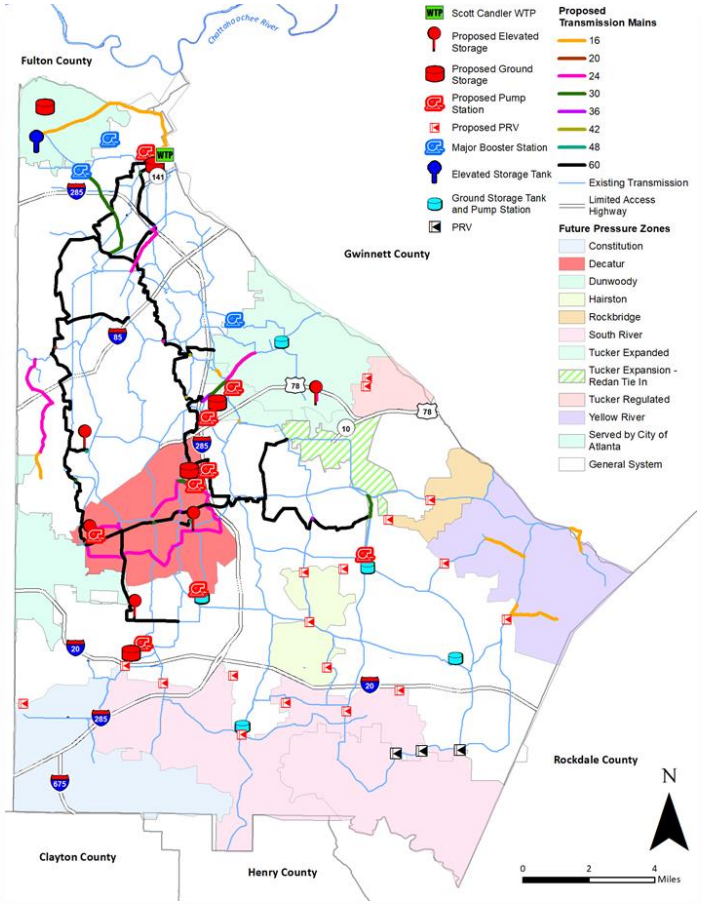
SYSTEM DEVELOPMENT

- 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

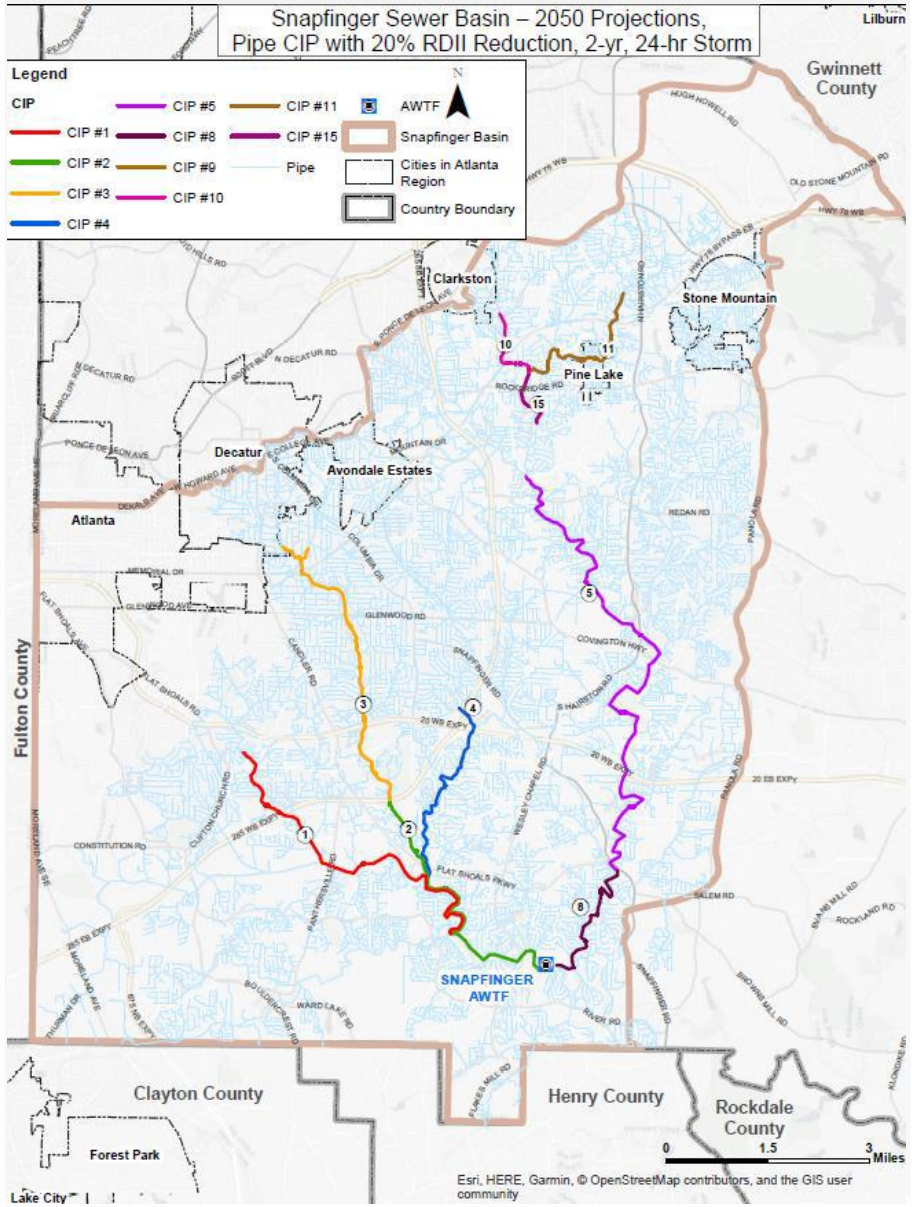
2020



2050



CONSENT DECREE – REQUIRED PROJECTS



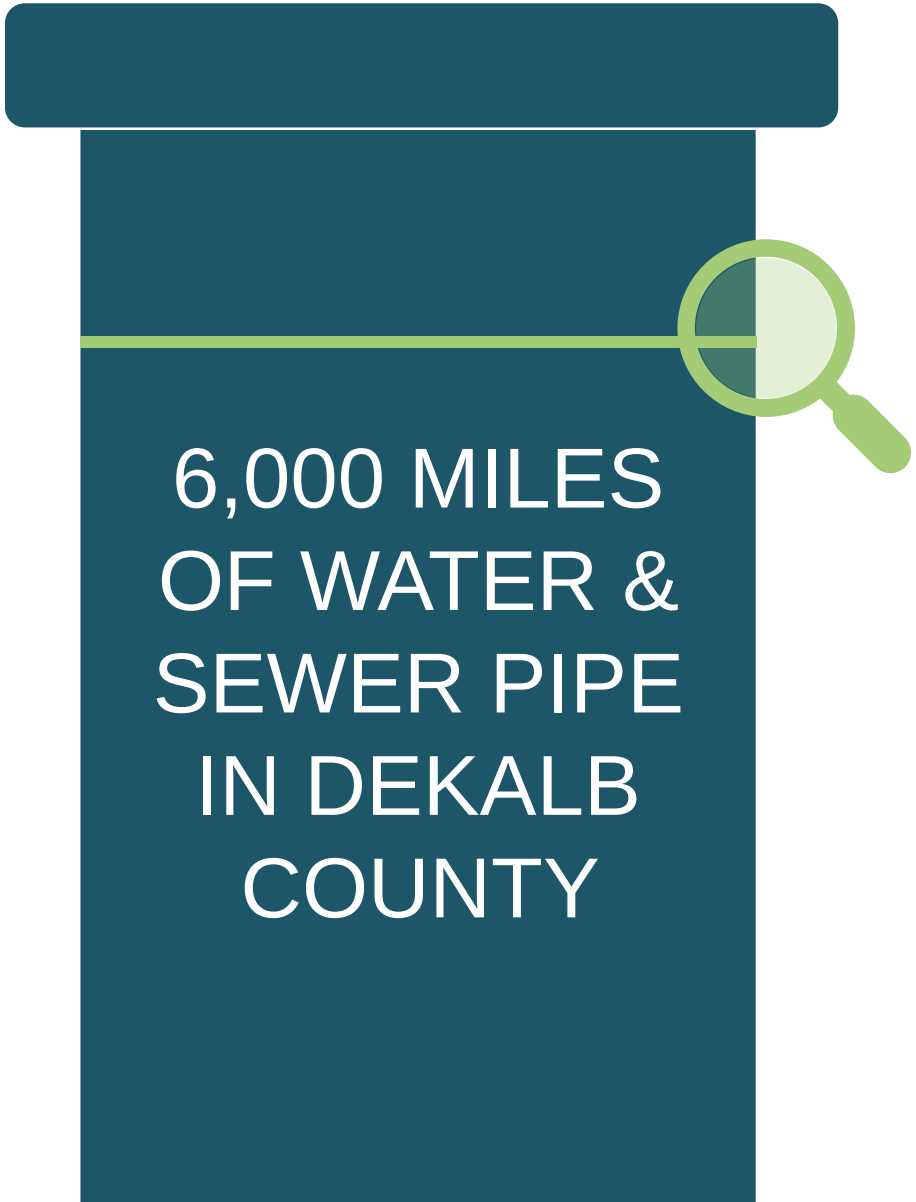
- Priority Area Sewer Assessment and Rehabilitation Program (PASARP) began in CIP 2010 and must be completed in CIP 2021
- Ongoing Sewer Assessment and Rehabilitation Program (OSARP) rehabilitation and upsizing
- Key focus of CD extension addresses trunk sewer projects, particularly in the Snapfinger Basin

Key trunks in Snapfinger Basin

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



1% = 60 MILES

60 MILES = ~$100 M/YR to replace

TIMING

UPDATED TIMELINE

STARTED

INFORMATION SESSION ON MASTER PLAN

SEPTEMBER

WIFIA LOAN

SEPTEMBER

STARTED

APPROVE CD MODIFICATION

TBD

GEFA LOAN

SEPTEMBER

STARTED

APPROVE CIP 2021

OCTOBER

APPROVE FUNDING PLAN

NOVEMBER

REVIEW BILLING IMPROVEMENTS

DECEMBER


QUESTIONS?