

PROJECT 2030

WATER MAIN REPLACEMENT



CITRUS
HEIGHTS
WATER
DISTRICT

PROJECT 2030
WATER MAIN REPLACEMENT



Customer Advisory Committee Meeting 2

AUGUST 28, 2018



PLEDGE OF ALLEGIANCE

MEETING AGENDA

Public Comment

Approve Meeting #1 Summary

Water Demand Forecast

District Pipeline Asset Inventory Results

Main Replacement Basics and Benchmarking

Public Comment

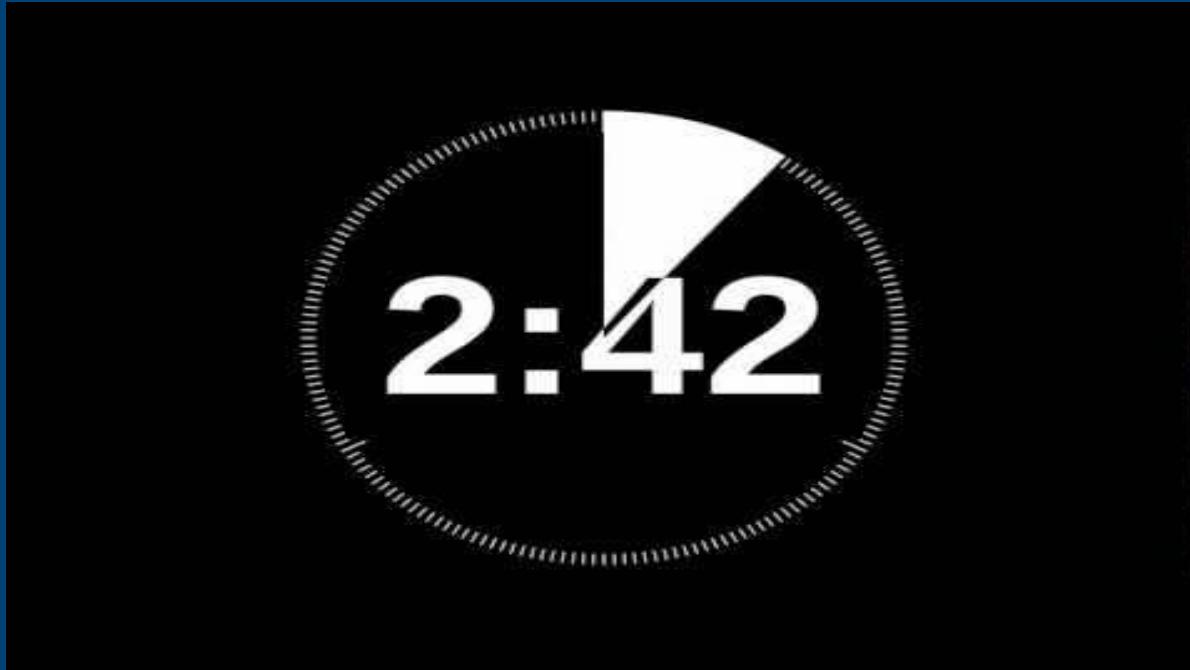
Preview of CAC Meeting 3 on December 11, 2018

Meeting Take Away's



PUBLIC COMMENT

PUBLIC COMMENT

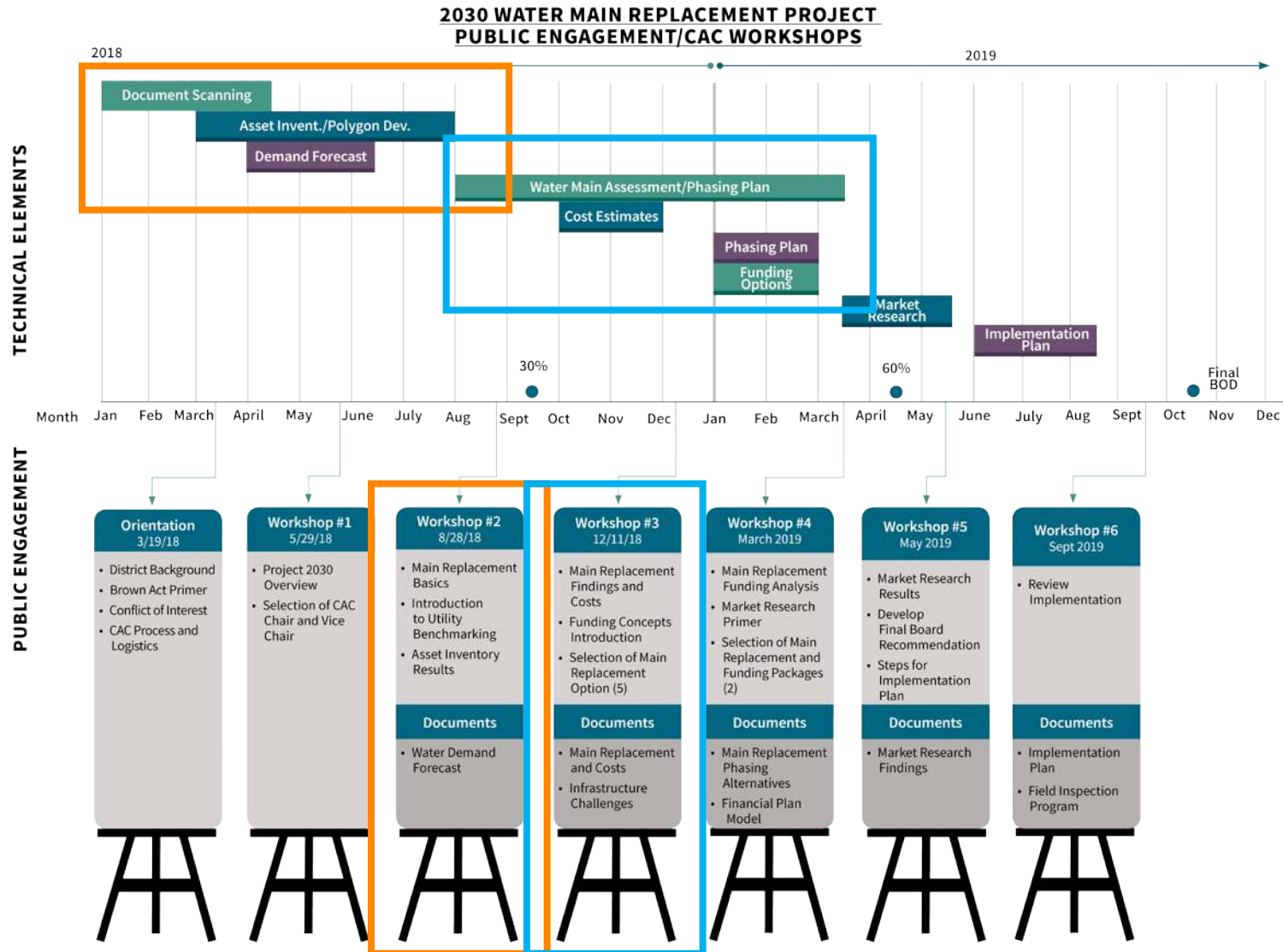




APPROVE MEETING #1 SUMMARY – MAY 29, 2018



WHERE WE ARE & WHERE WE ARE GOING



PROJECT 2030 SCOPE

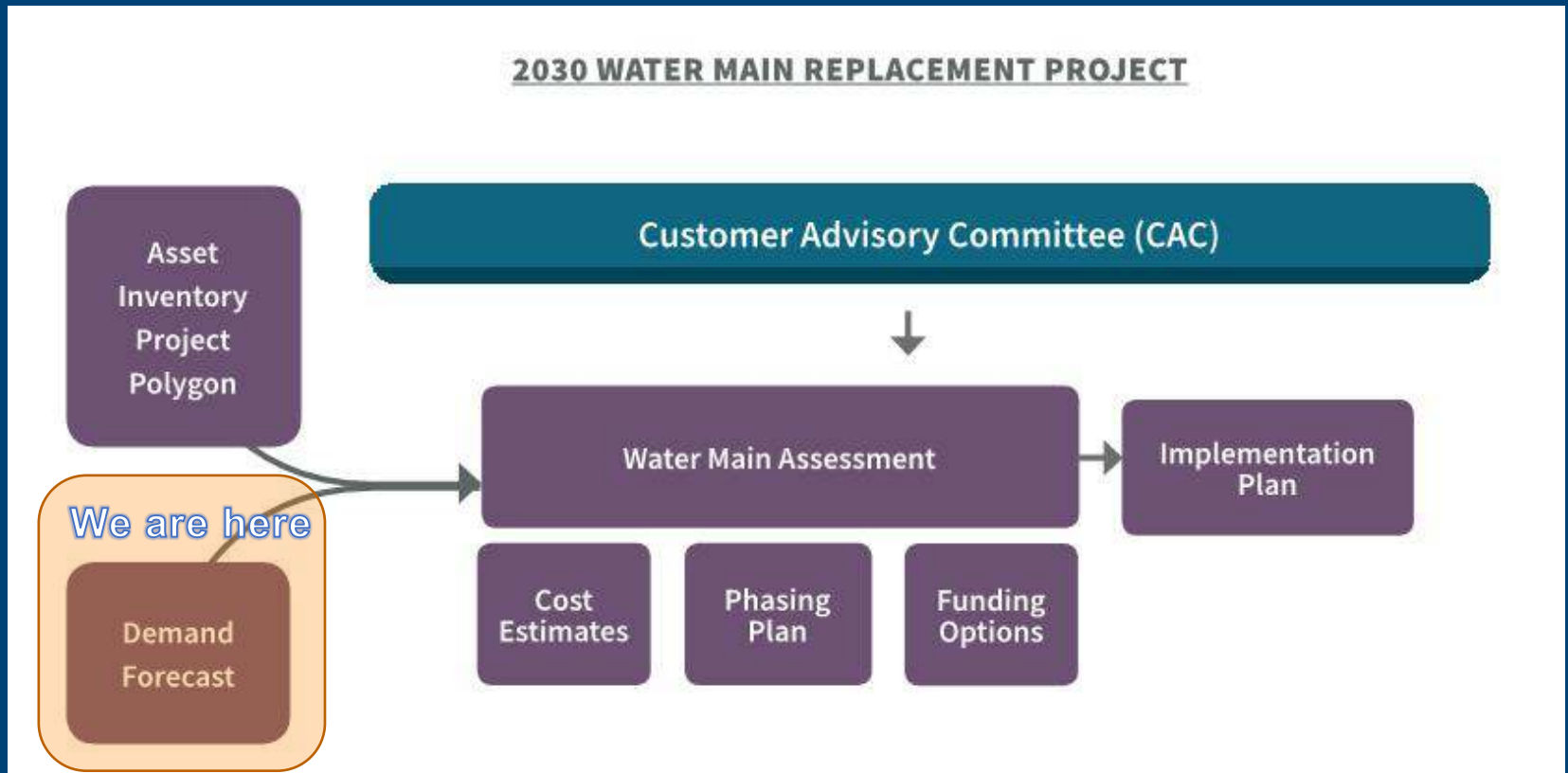




WATER DEMAND FORECAST

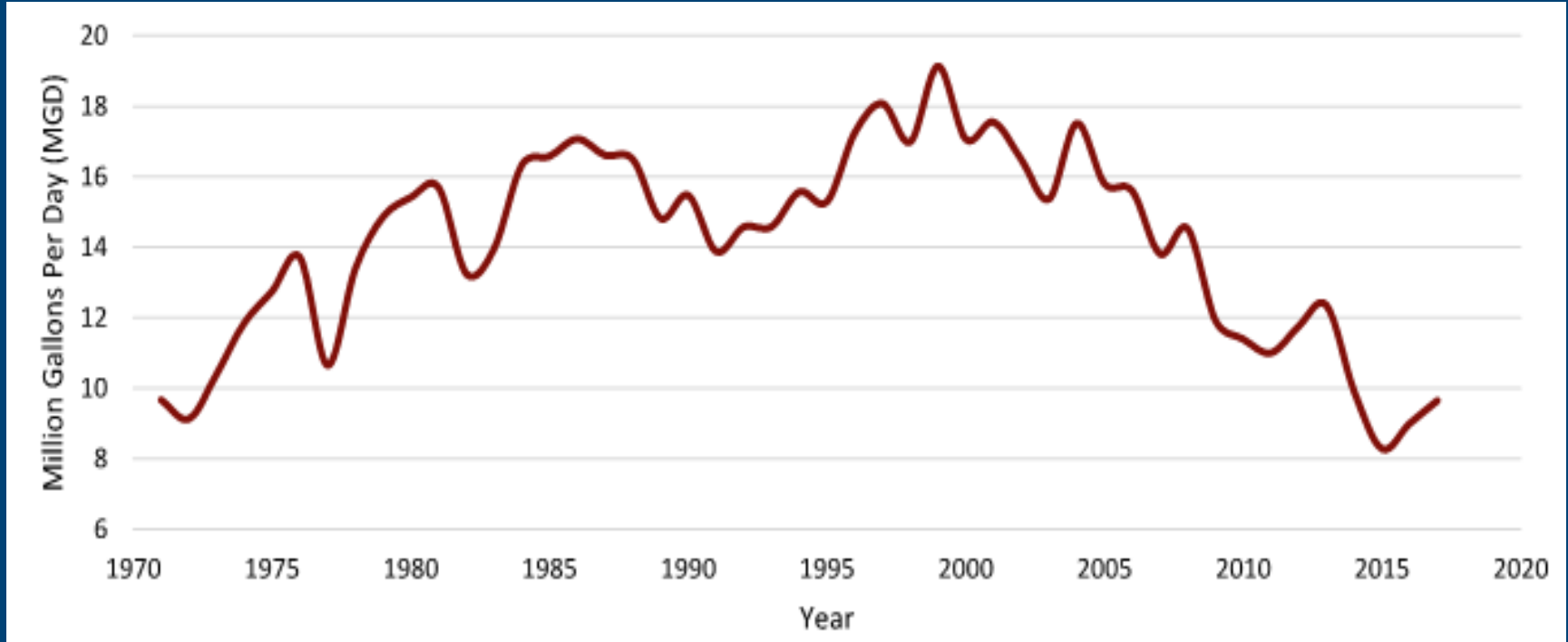
**How projected changes in water usage
will affect the way the District replaces
and sizes water main**

WATER DEMAND FORECAST





HISTORICAL WATER DEMAND

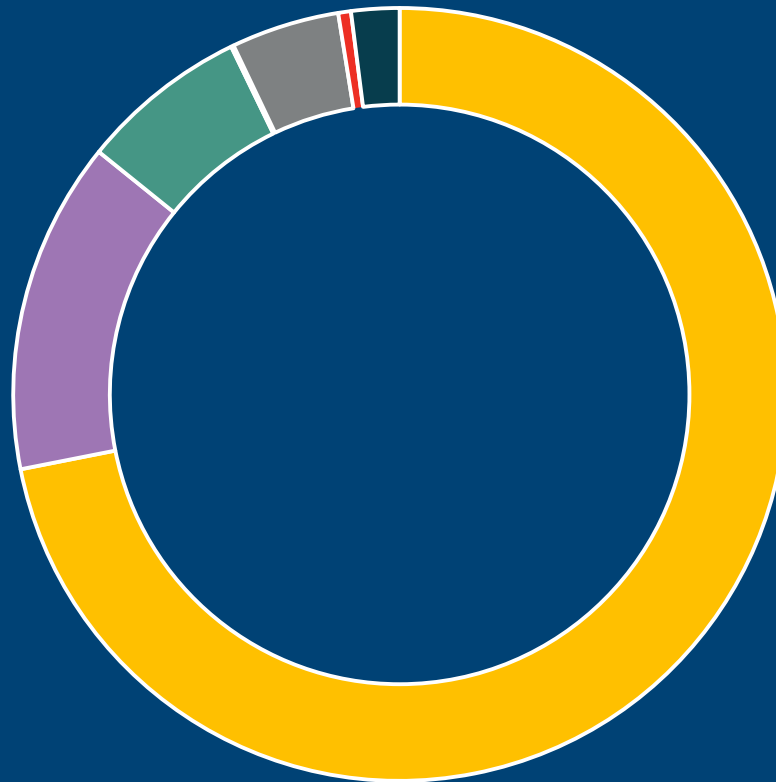


1971 – 9.7 MGD
1999 – 19.1 MGD

2015 – 8.2 MGD
2017 – 9.7 MGD

WATER DEMAND FORECAST

2017 WATER DEMANDS 9.7 MGD



From Table 1-2 – Demand Forecast Technical Memo

WATER DEMAND FORECAST

FACTORS AFFECTING DEMAND:

- POPULATION GROWTH






WATER DEMAND FORECAST

FACTORS AFFECTING DEMAND:

- Water Conservation Driven by State Legislation



CITRUS HEIGHTS WATER DISTRICT

State Water Efficiency Regulations

Summer 2018

Recent Changes to State Law

On May 31, 2018, Governor Brown signed two bills intended to "make water conservation a California way of life." SB 606 (Hertzberg) and AB 1668 (Friedman) emphasize water efficiency. These laws outline a framework for water use requirements for local water suppliers like CHWD. These requirements will be developed by the State Water Resources Control Board and are not expected to go into effect until 2022.

So, what do these Regulations mean for CHWD Customers?

Currently, not much will change for CHWD customers. Many details for implementing the new water use requirements will be determined over the next several years. The overall framework includes:

- A standard for indoor residential water use of 55 gallons per person per day beginning in 2022—dropping incrementally to 48 gallons in 2030. This standard will be measured across a water provider's entire service area, it is not for individual water use.
- A standard for outdoor residential water use based upon a community's climate and the amount of landscaped area.
- A standard for water loss due to leaks in water system pipes.

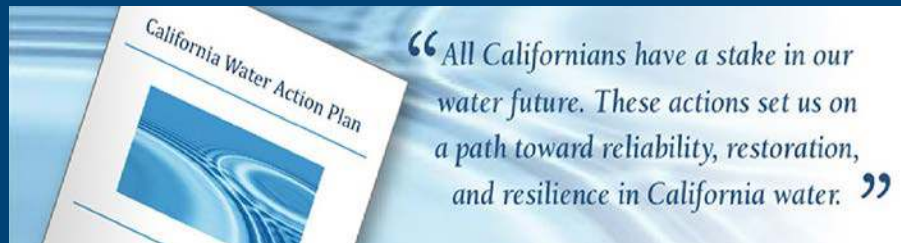
CHWD Offers Water Efficiency Resources

- CHWD offers a free Water Efficiency Review to help customers use outdoor water as efficiently as possible. For more information about the Water Efficiency Review, please contact us at (916) 725-5372 or water@chwd.org.
- Customers are encouraged to take advantage of the District's water efficiency programs and rebates found at chwd.org/our-water/rebates.

Living with California's Current Water Efficiency Regulations

The water use targets established in SB 1606 and AB 1558 may not affect CHWD customers for years to come. However, there are current water regulations that have been in effect since March 14, 2017. CHWD is at Stage 1 - Normal Water Supply, and the current regulations are:

- Water shall be confined to the customer's property. No run-off to streets or gutters is allowed.
- Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be used.
- Leaking customer pipes or faulty sprinklers shall be repaired within five (5) working days or less if the problem is severe.
- All pools, spas, and ornamental fountains/sponds shall be equipped with a recirculation pump.
- No washing streets, parking lots, driveways, sidewalks, or buildings, except as necessary for health, aesthetic or sanitary purposes.



WATER USAGE CALCULATOR

DETACH AND RETURN THE ABOVE REMITTANCE PORTION OF THE BILL WITH YOUR PAYMENT IN THE RETURN ENVELOPE PROVIDED

Page 1 of 1



Citrus Heights Water District
8230 Sylvan Road Citrus Heights, CA 95610
PO Box 286 Citrus Heights CA 95611-0286

For Billing Inquiries Please Call
Tel: 916.725.6873 Monday - Thursday
Fax: 916.725.0345 8:00 am to 5:30 pm
Closed Fridays

Visit our web site at www.chwd.org to pay bill online

INFORMATION ONLY WATER STATEMENT

Account Number: [REDACTED]
Account Name: [REDACTED]
Service Address: [REDACTED]
Statement #: 1322902
Bill Date: 12/23/2016
Billing Cycle: 10/27/2016 - 12/21/2016

Service Type	Size	Meter No.	Service Dates	Readings		Units	Water Charge
				Previous	Current		
Domestic	1.00"	49079048	10/15/2016-12/07/2016	2958	2965	7	\$70.09

Water Charge Detail		Rate Effective	Rate	Usage	Charge
Service Charge		01/01/2016	63.98000		\$63.98
Usage Charge		01/01/2016	0.87350	7.00000	\$6.11



NEW STATE WATER CONSERVATION LAW

- Gov. Jerry Brown signed SB 606/AB 1668 on May 31, 2018
- Put in place water use requirements for water suppliers like CHWD
- Requirements to be developed and enforced by State Water Resources Control Board
- Expected to go into effect in 2022

LAW'S EFFECTS ON CHWD

- CHWD will be required to meet water use standards for:

Type of Water Use	Status of Regulation
Residential Indoor Use	In Place
Commercial/Institutional Use	To Be Determined
Outdoor Use	To Be Determined
Water Loss	In Place

- Residential Indoor Water Use measured at District-level:
 - Gallons Per Capita Per Day = average across the population

IMPACTS TO CUSTOMERS

- Standard for Indoor Water Use across District
 - 55 Residential Gallons per capita per day by 2022
 - 50 Residential Gallons per capita per day by 2030
- District is exploring available options to meet targets
 - Working with Customers
 - Combating unfair regulations

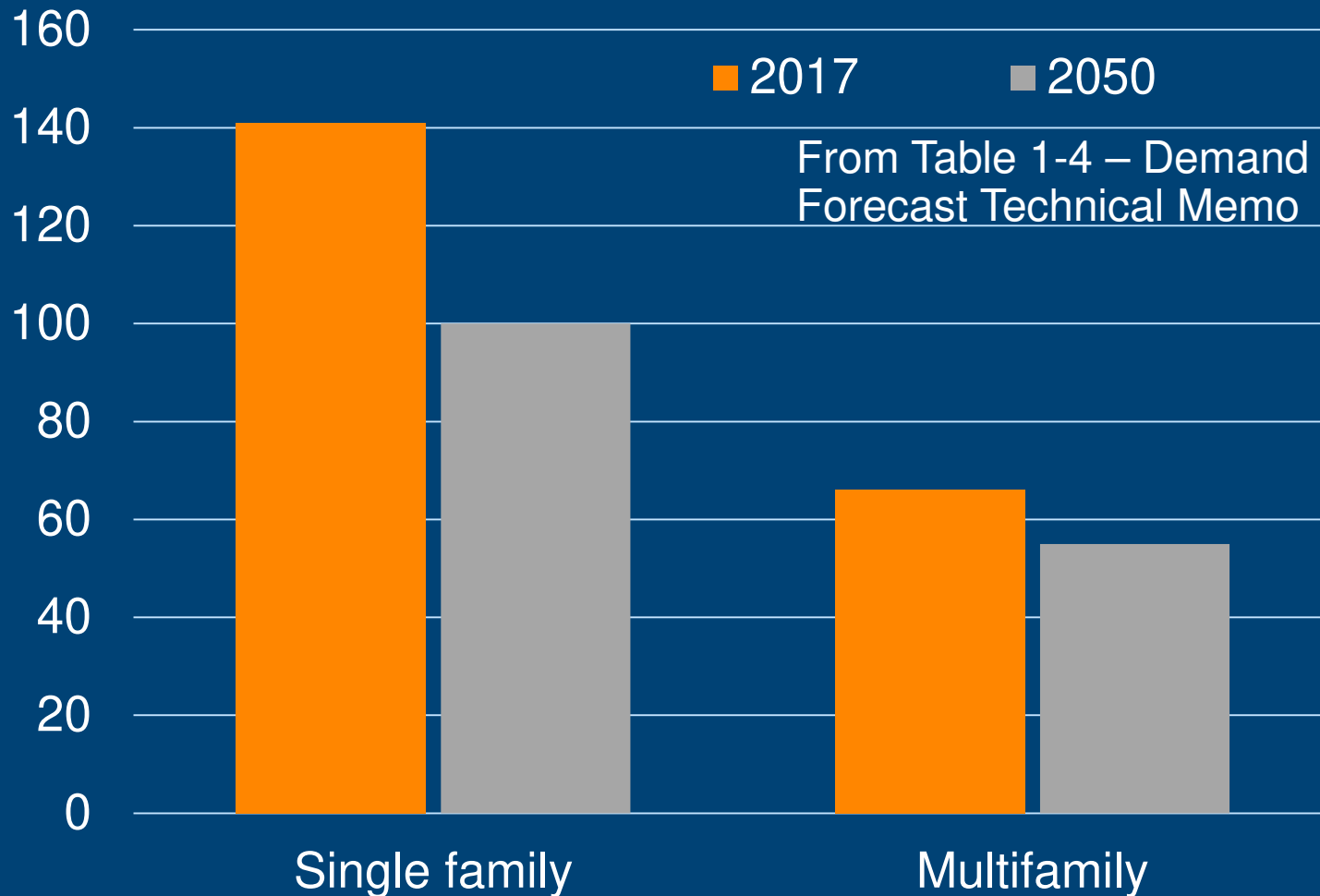


WHAT DOES THIS MEAN FOR PROJECT 2030?

- Legislation is the major factor in determining water demand

WATER DEMAND FORECAST

WATER DEMANDS (GPCD)



WATER DEMAND FORECAST

Single family

Multifamily

Commercial

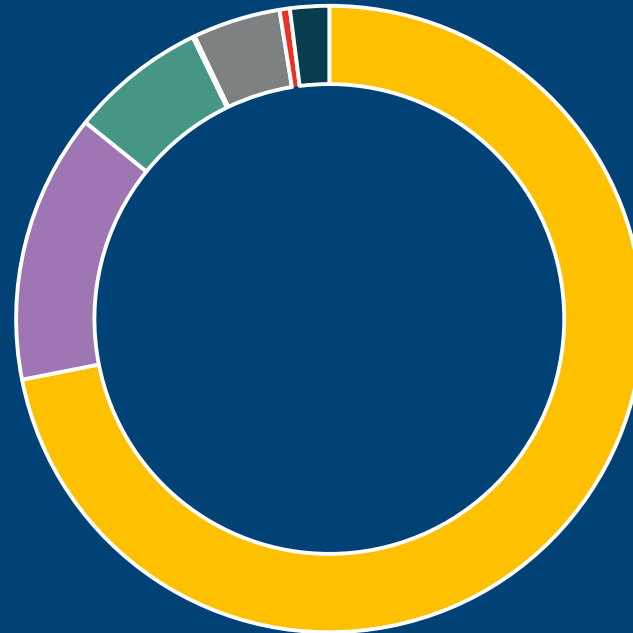
Industrial

Public

Vacant

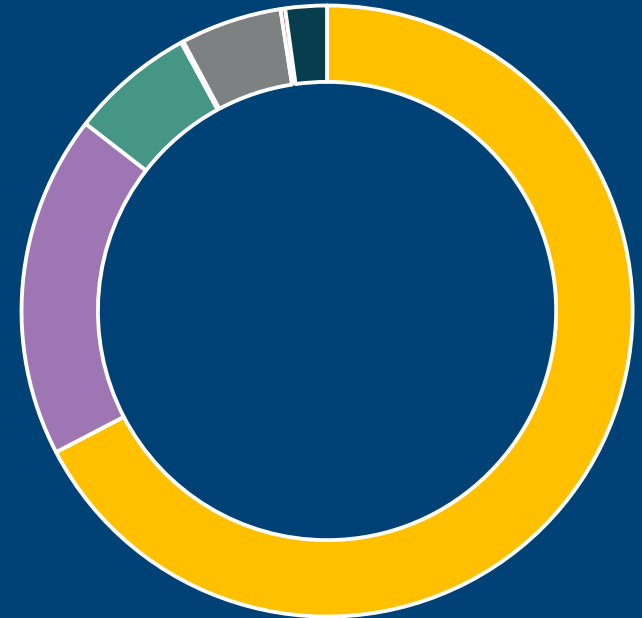
Other

2017 WATER DEMANDS
9.7 MGD



From Table 1-2 – Demand
Forecast Technical Memo

2050 WATER DEMANDS
8.2 MGD



From Table 1-6 – Demand
Forecast Technical Memo

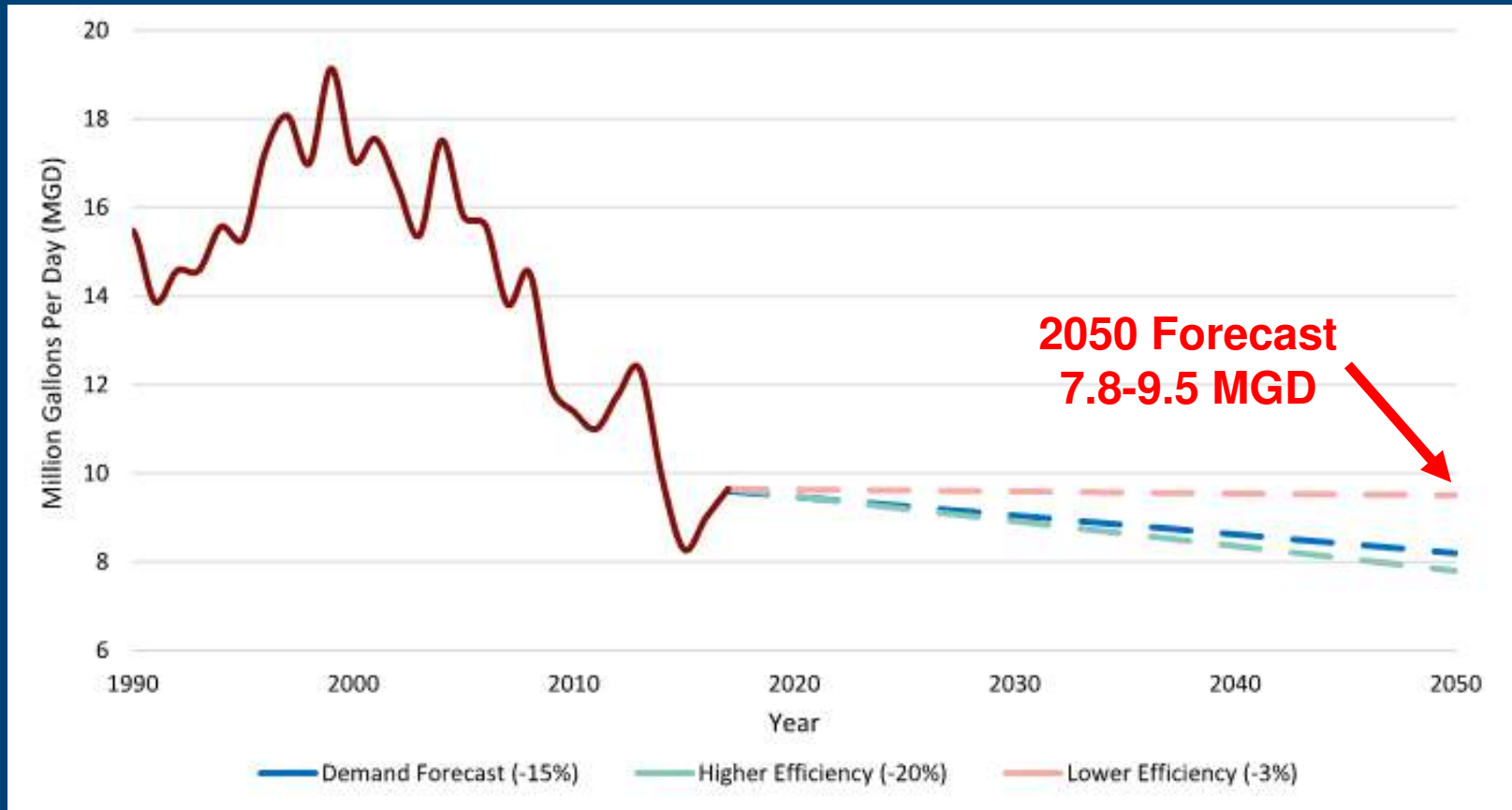


WATER EFFICIENCY MAY OUTWEIGH POPULATION GROWTH



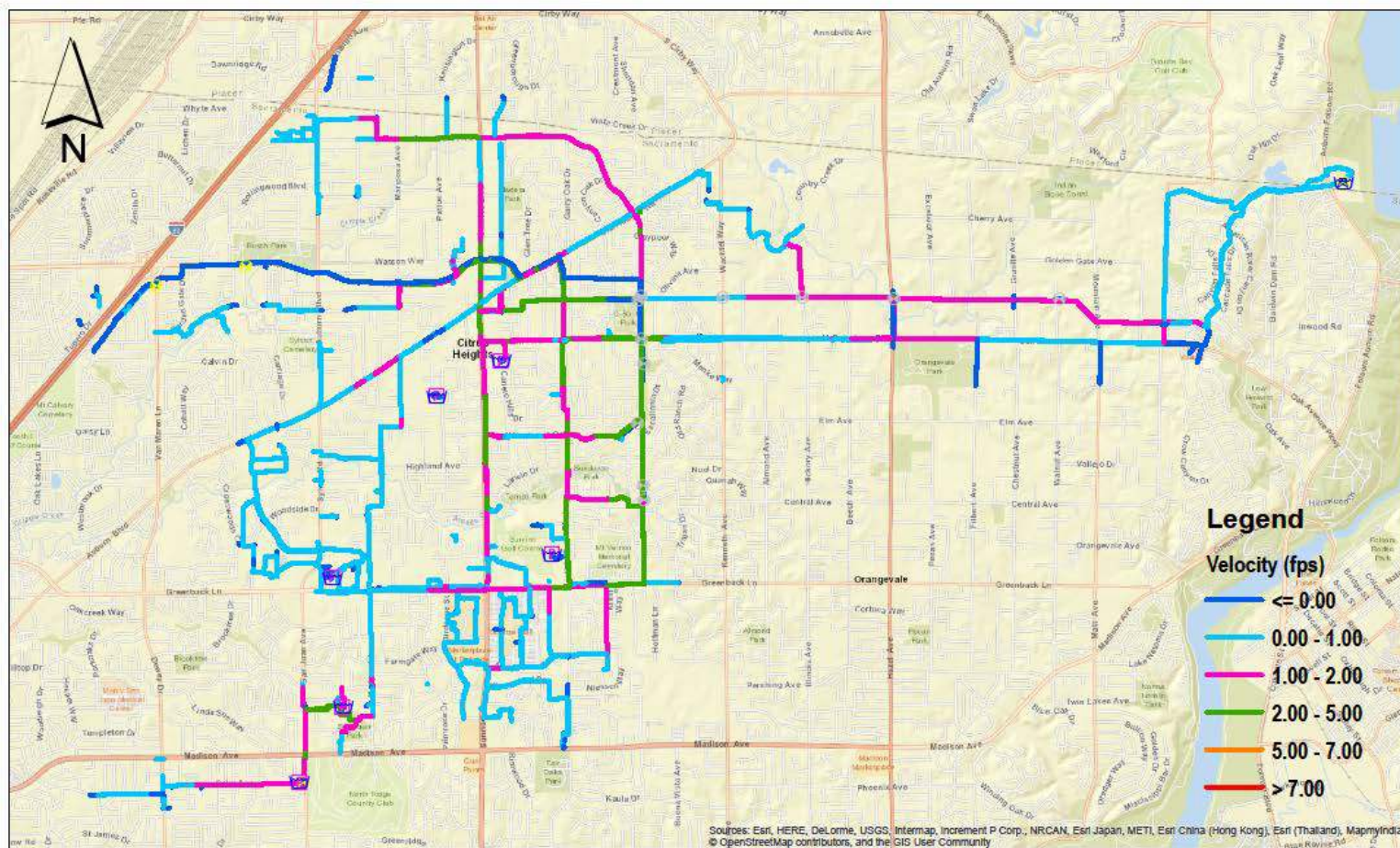


RANGE IN 2050 WATER DEMAND PROJECTIONS





NEXT STEPS – HOW WE’LL USE THIS DATA





CAC ACTIVITY

Q&A ACTIVITY

1. Break into groups of 4
2. Discuss what you have heard, and come up with 1 question per group
3. Please write your question on a large post-it note
4. Staff & Consultants to answer questions



BREAK



DISTRICT PIPELINE ASSET INVENTORY RESULTS

**Age of the water system, various pipe
types, and where they're located
throughout the system**

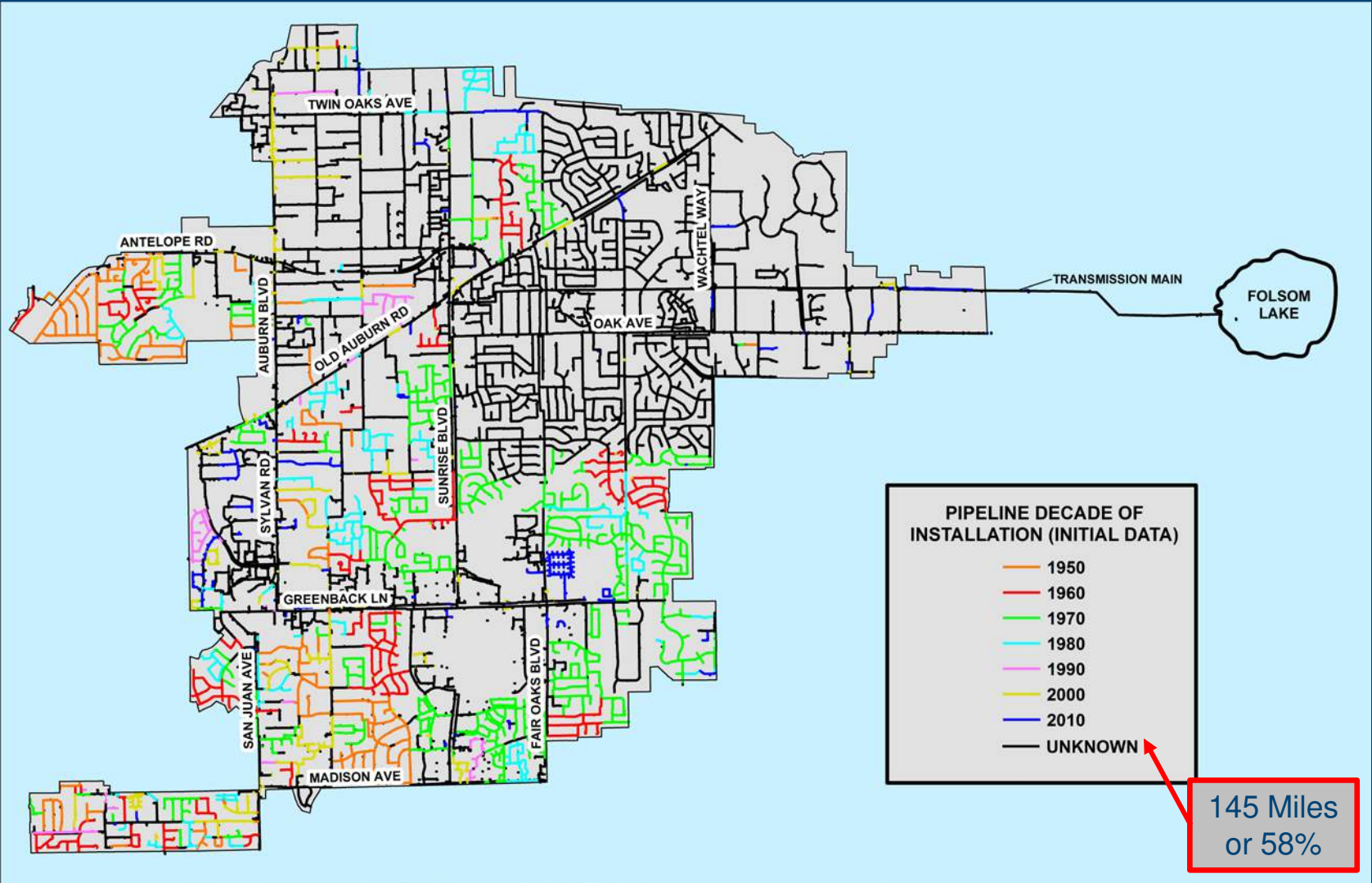
ASSET INVENTORY

- Goal: Add key data to the District's GIS water facility map
- Tasks:
 - Go through project files
 - Scan documents
 - Data entry into map
 - Decade of Installation
 - Pipe Type
 - QA/QC



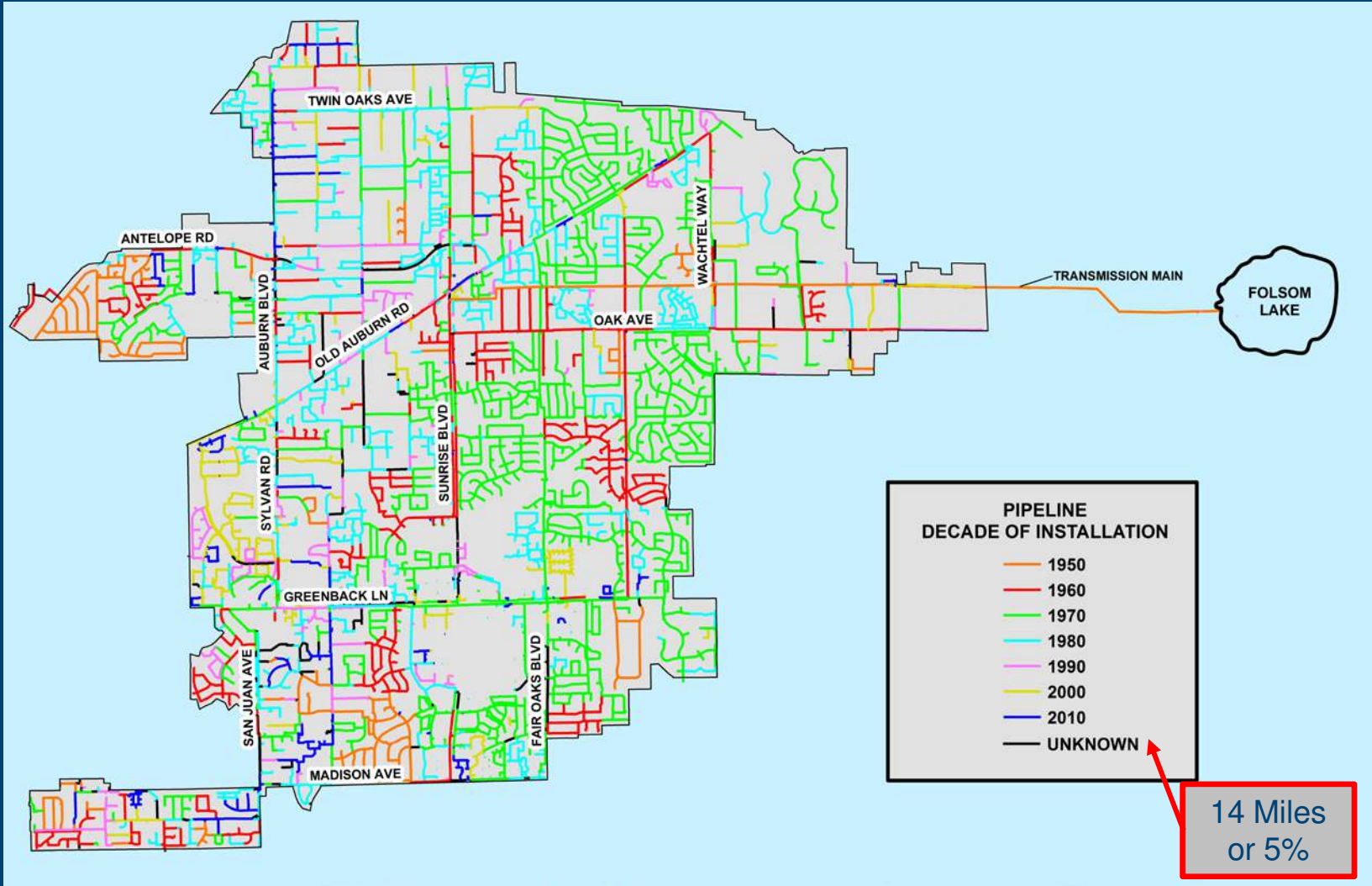


BEFORE PIPELINE INVENTORY – DECADE OF INSTALLATION





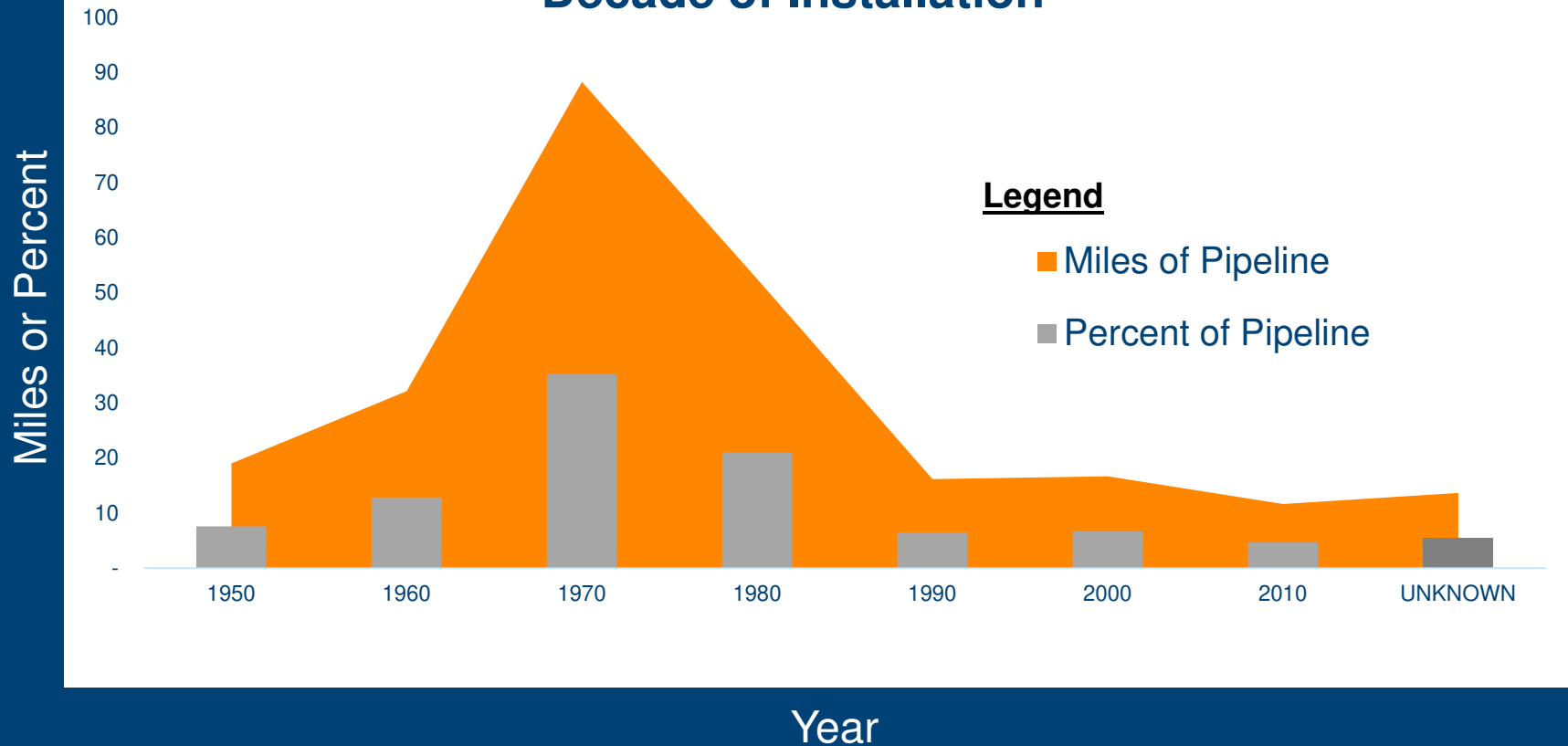
AFTER PIPELINE INVENTORY – DECADE OF INSTALLATION





AFTER PIPELINE INVENTORY – DECADE OF INSTALLATION

**Pipeline Inventory
Decade of Installation**





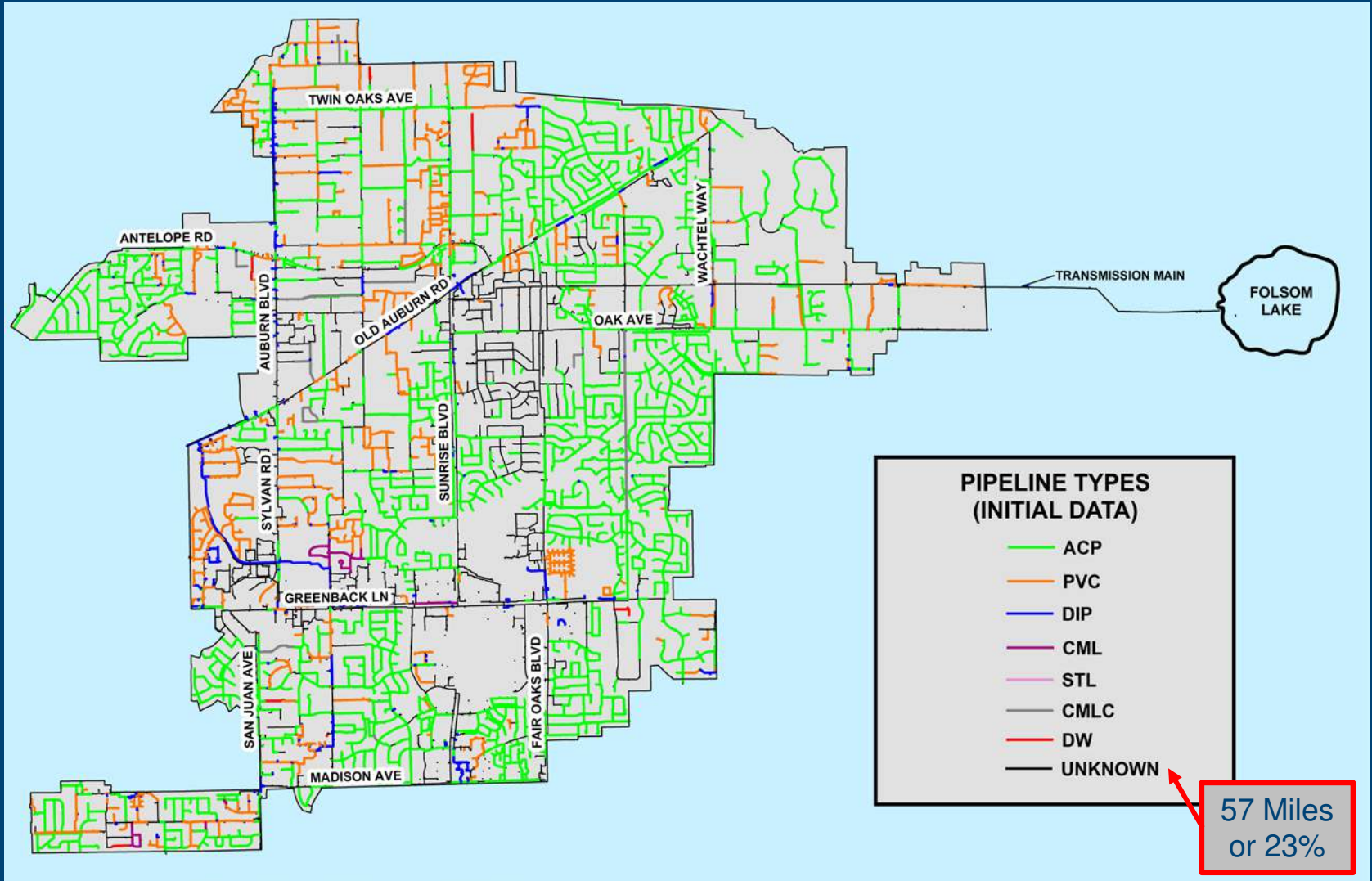
AFTER PIPELINE INVENTORY – DECADE OF INSTALLATION

Decade of Installation	Pipe Age (Years)	Miles of Pipeline	Percent of Pipeline
1950	68	19	8
1960	58	32	13
1970	48	88	35
1980	38	53	21
1990	28	16	6
2000	18	17	7
2010	8	12	5
Year Unknown	-	14	5
Total	-	250	100

56%

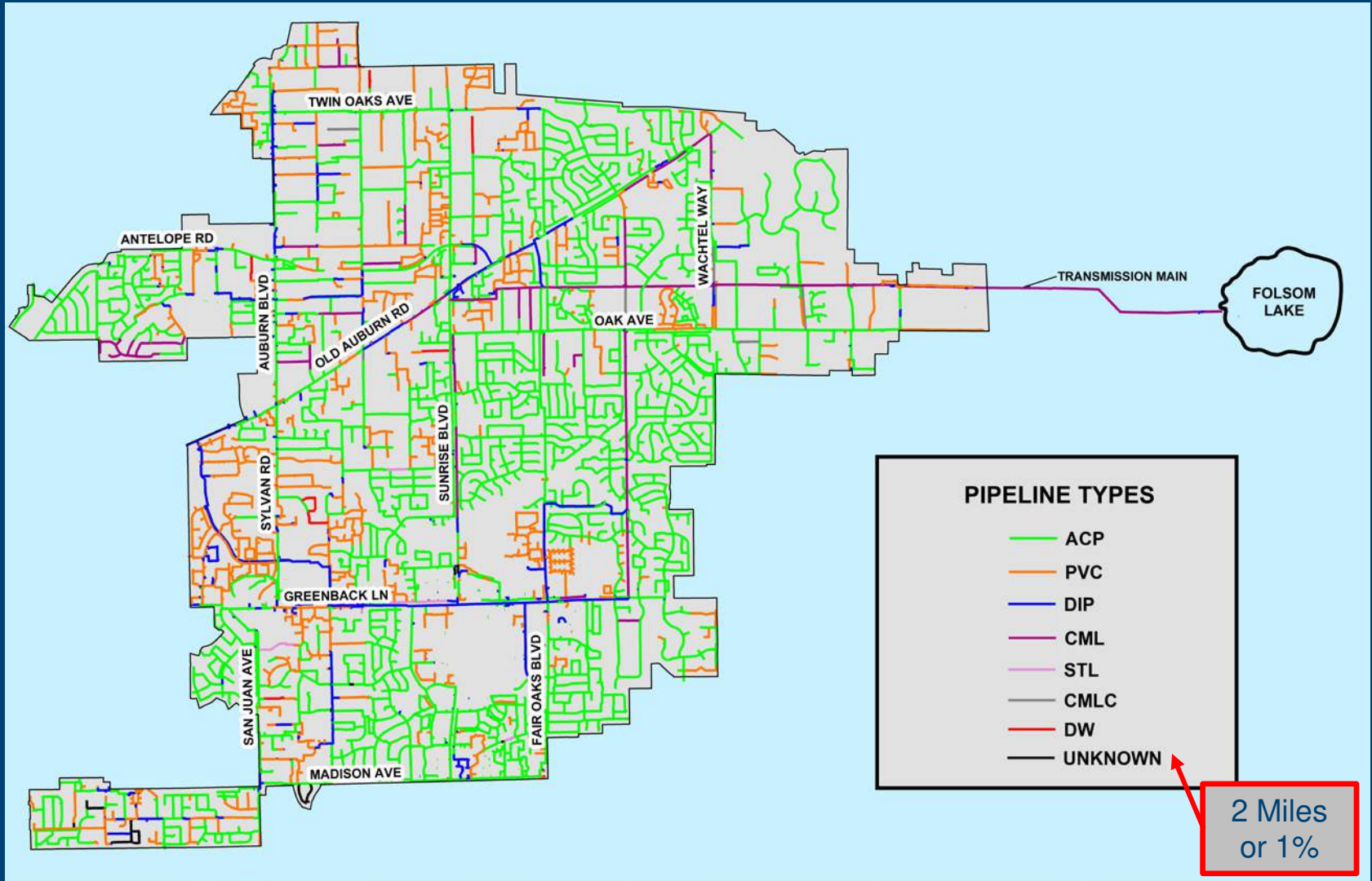


BEFORE PIPELINE INVENTORY – PIPE TYPE



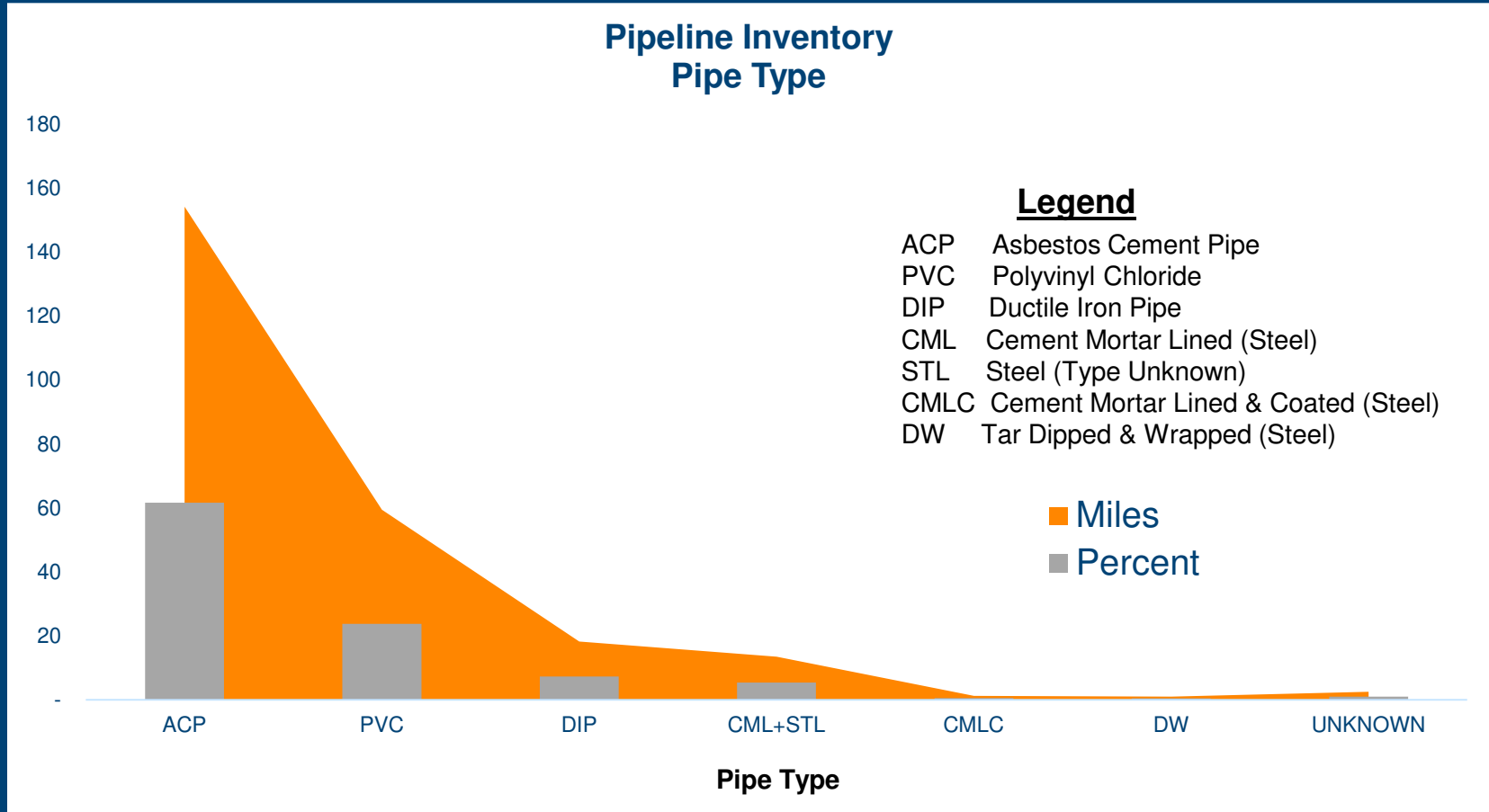


AFTER PIPELINE INVENTORY – PIPE TYPE





AFTER PIPELINE INVENTORY – PIPE TYPE





AFTER PIPELINE INVENTORY – PIPE TYPE

Pipe Type	Miles of Pipeline	Percent of Pipeline
ACP	154	61.7
PVC	59	23.8
DIP	18	7.3
CML+STL	13	5.4
CMLC	1	0.5
DW	1	0.4
Pipe Type Unknown	2	1.0
Total	250	100

HOW IS THIS DATA GOING TO BE USED?

- Age and Pipe Type Data will be used when prioritizing water main replacement in the Water Main Assessment/Risk Analysis Step
 - Generally replace older mains first
 - When comparing two pipes of the same year – pipe type may be a factor in determining which pipe is replaced first.



QUESTIONS?



MAIN REPLACEMENT BASICS AND BENCHMARKING

**Major benchmarks to evaluate
various options**

MAIN REPLACEMENT BASICS

- A day in the life of CHWD engineering and operations staff
- Why does this cost so much?



A DAY IN THE LIFE OF...

- Operations
 - Ensure delivery and quality of supplied water
 - Schedule planned repairs / respond to unplanned repairs
 - Exercise valves, flush hydrants and mains
 - Water quality sampling
 - Customer relations
- Engineering
 - Capital Improvement Plan implementation
 - Plan checking and inspections
 - GIS/mapping
 - Business relations

MAIN REPLACEMENT COSTS

■ Labor

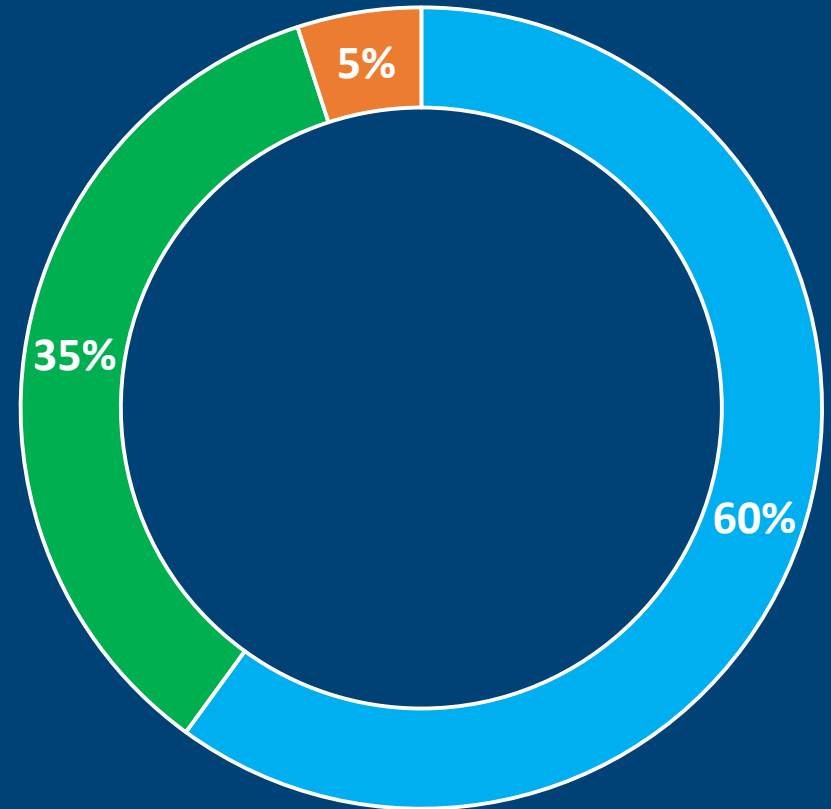
- Excavation
- Installation and Connections
- Testing (Pressure and Water Quality)
- Pavement Repair

■ Materials

- Pipe
- Backfill
- Asphalt

■ Other

- Traffic Control
- Environmental
- Temporary Service

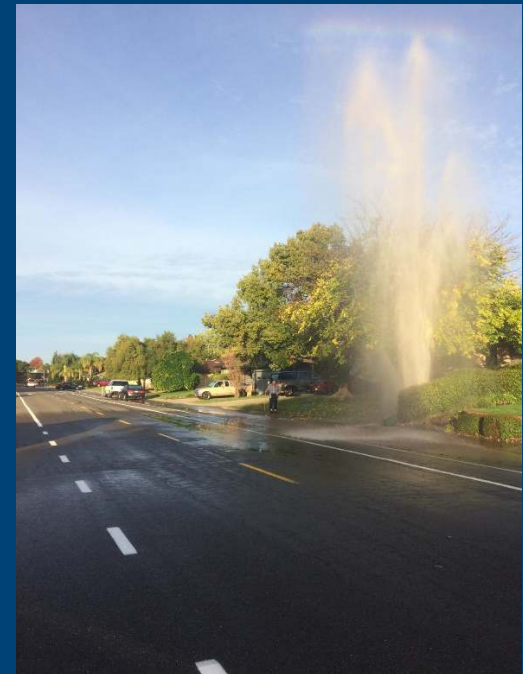


WHAT IS BENCHMARKING?

- “A standard by which something can be measured or judged.”
- Track performance indicators
- Show whether goals are being met

WHY UTILITIES DO THIS

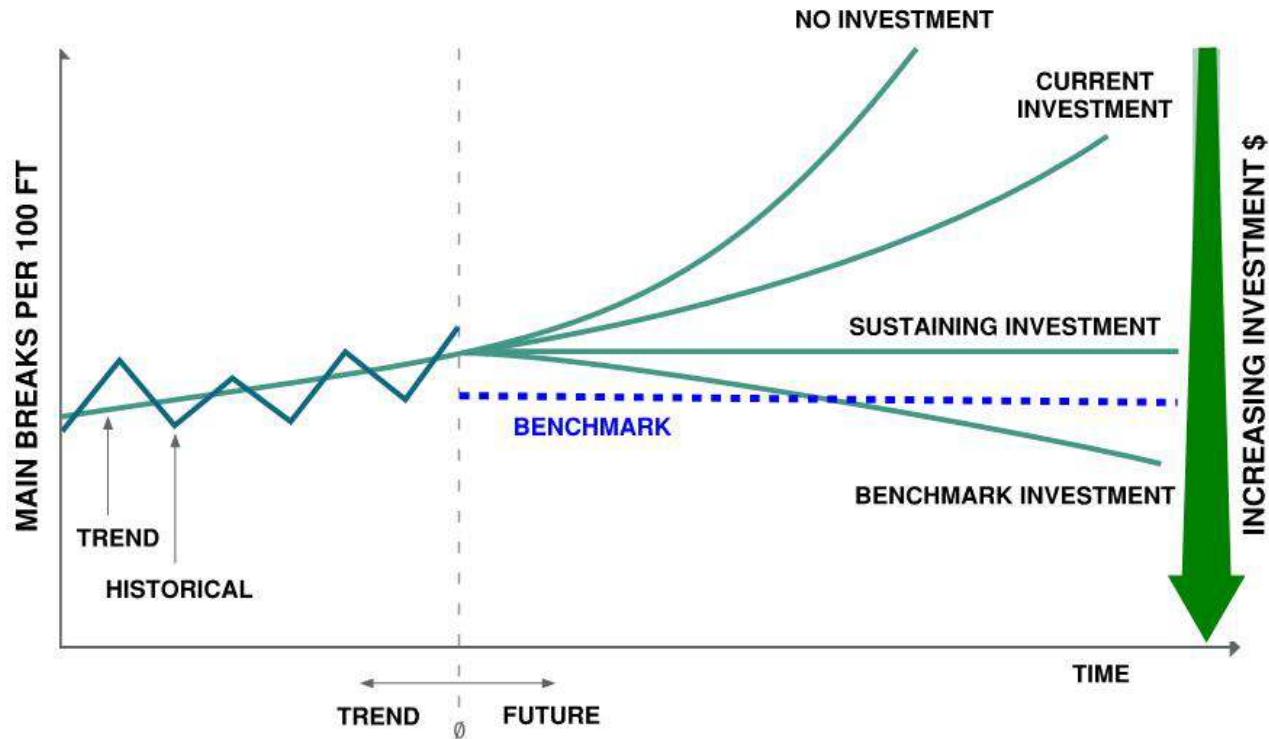
- Prioritize main replacement
- Improve operational efficiency
- Optimize future capital investments
- Make informed decisions



BENCHMARKING STEPS

1. Identify Improvement Goals
2. Establish Benchmarks
3. Collect Data - goals need to be measurable
4. Track Progress and Identify Trends

PERFORMANCE VS. INVESTMENT





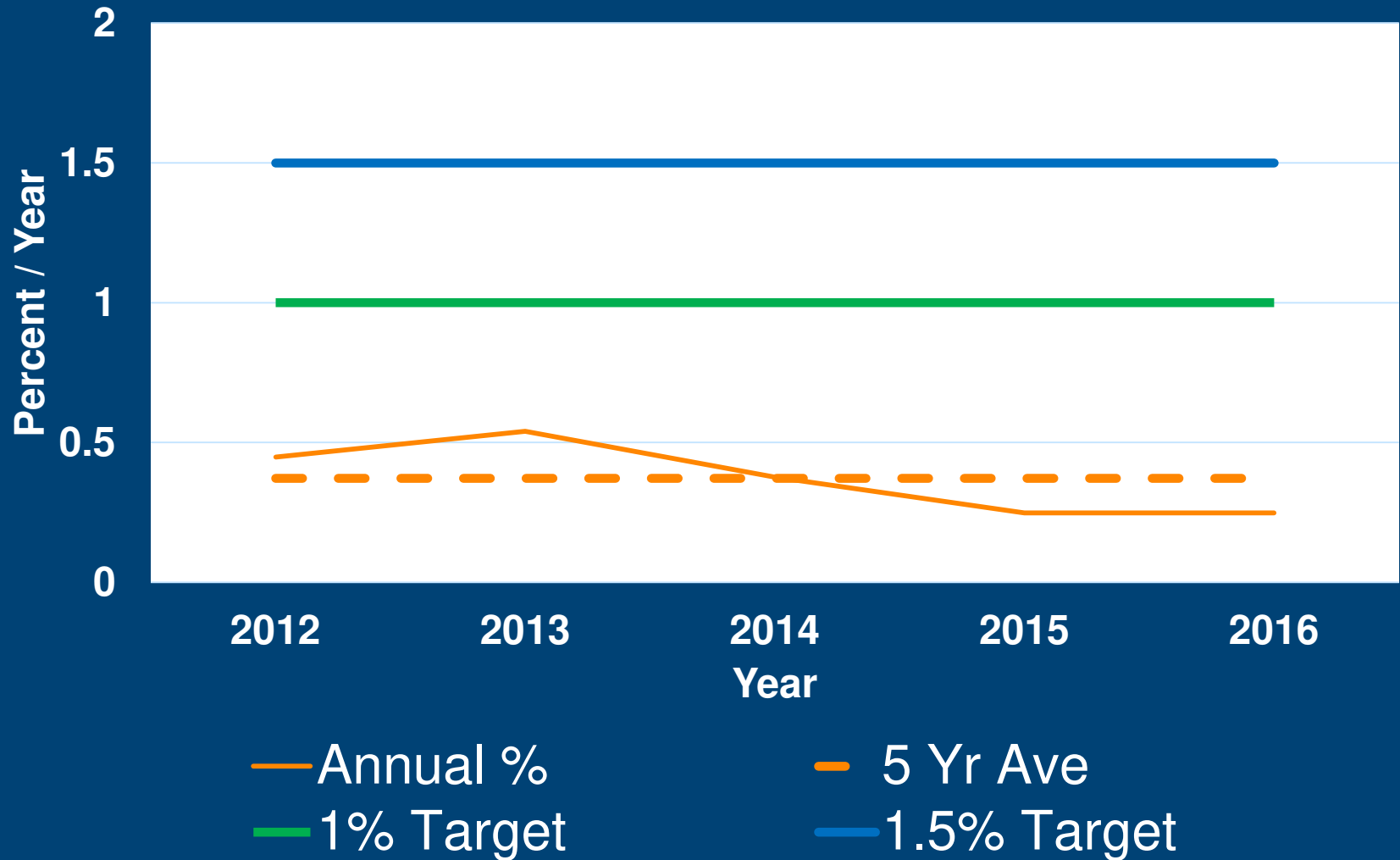
COMMON UTILITY WATER DISTRIBUTION BENCHMARKS

Benchmark	How We Measure	Indicator Of
Mains Replaced	Percent per Year	Pace of Replacement
Water Loss	Percent, GPD/Connection	Integrity of System
Breaks and Leaks	Events per 100 miles of Main	Integrity of System





CHWD MAIN REPLACEMENT BENCHMARK



WATER LOSS BENCHMARKS

Water Loss Benchmark	Units of Measure	AWWA Survey Median (25 th -75 th %ile)	CHWD Performance
Real Losses per Service Connection	Gallons / day per connection	35.9 (29.5 – 48.3)	24.4
Leakage Index	--	1.9 (1.5 – 2.5)	1.2

NEXT STEPS

- Finalize annual main replacement goal.
- Review District's historical main break and leak data.
- Conduct main replacement prioritization and rate analysis. Focus on pipes with higher risk of failure.
- Develop data collection procedures for Implementation Plan.



QUESTIONS?



PUBLIC COMMENT



PUBLIC COMMENT



KEY TOPICS OF MEETING 2

- Water Demand Forecast – Future water use is projected to decline
- District Pipeline Asset Inventory Results – Water main age and pipe type will be two key components in prioritizing water main replacement
- Main Replacement Basics and Benchmarking – Use Benchmarks to track progress towards goal



NEXT STEPS

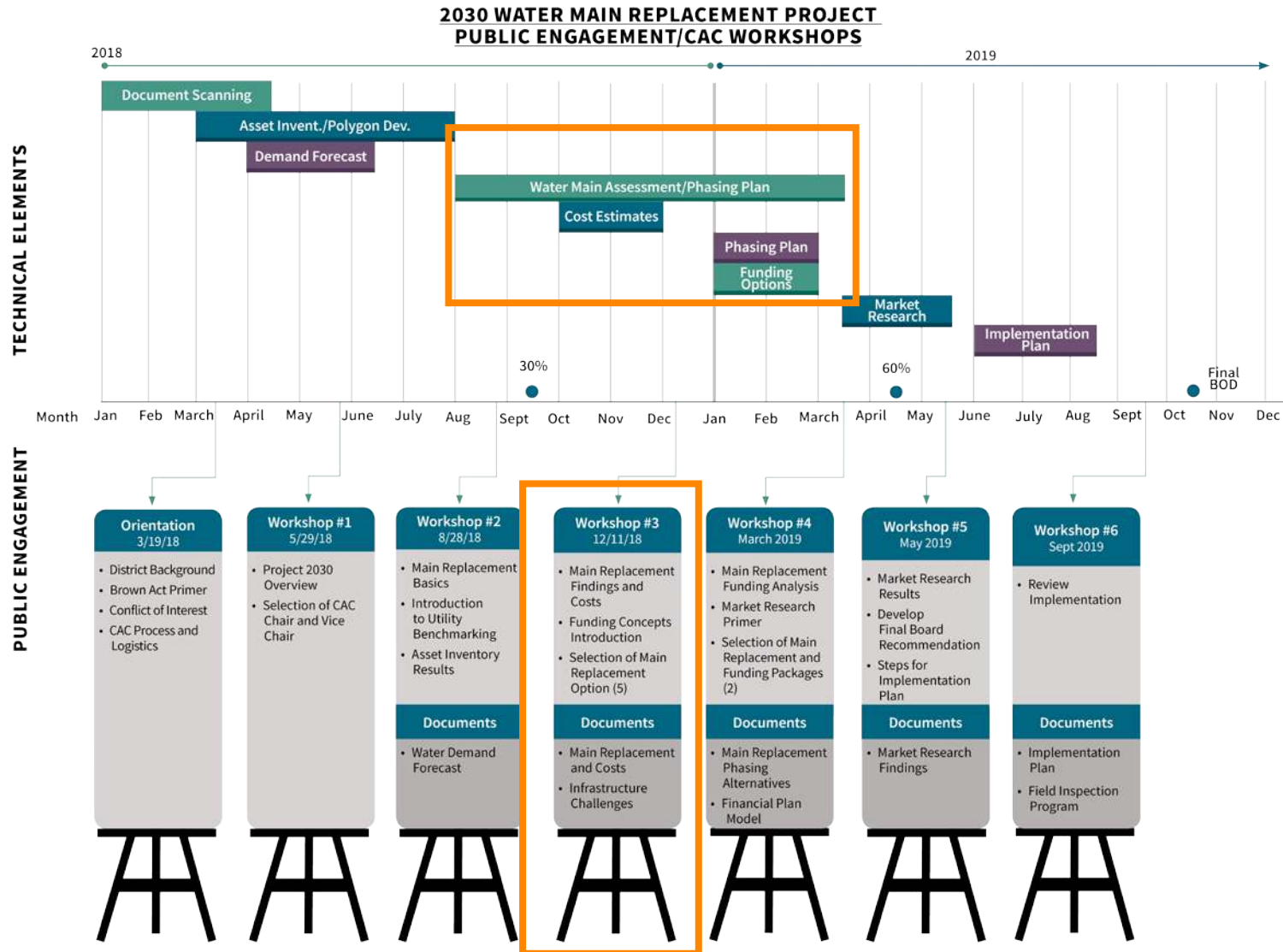
Next Meeting: Tuesday, December 11th

Time: 6:30 pm – 9:15 pm

Location: Citrus Heights Community Center, Hall A



PREVIEW OF CAC MEETING 3





VISIT THE CAC WEBPAGE

[chwd.org/customer-
advisory-committee/](https://chwd.org/customer-advisory-committee/)



PARTICIPANT TAKE- AWAY'S



CLOSING