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Statewide Water Loss Training & Technical Assistance for Small Water Systems

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WaterSmart Innovations 2014

October 8, 2014

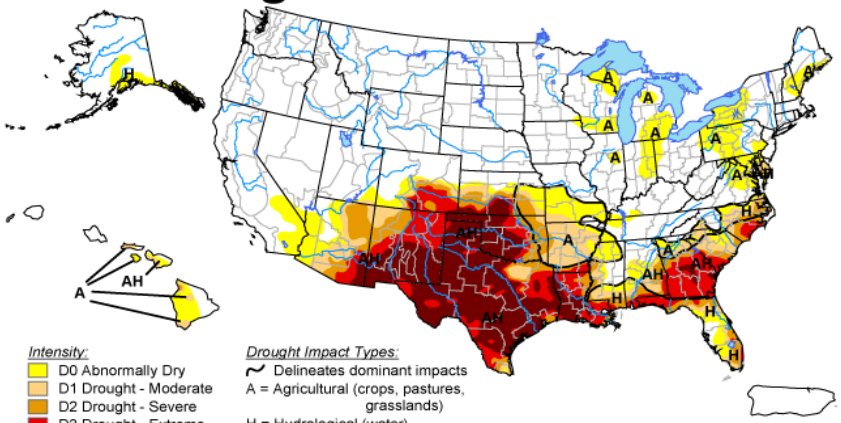
'Exceptional' drought wreaks havoc in southwest Georgia

Atlanta Expects Severe Water Restrictions Due to Drought

Historic Drought Prompts Water Wars in Normally Wet Region

U.S. Drought Monitor

July 26, 2011
Valid 8 a.m. EDT



Intensity:
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

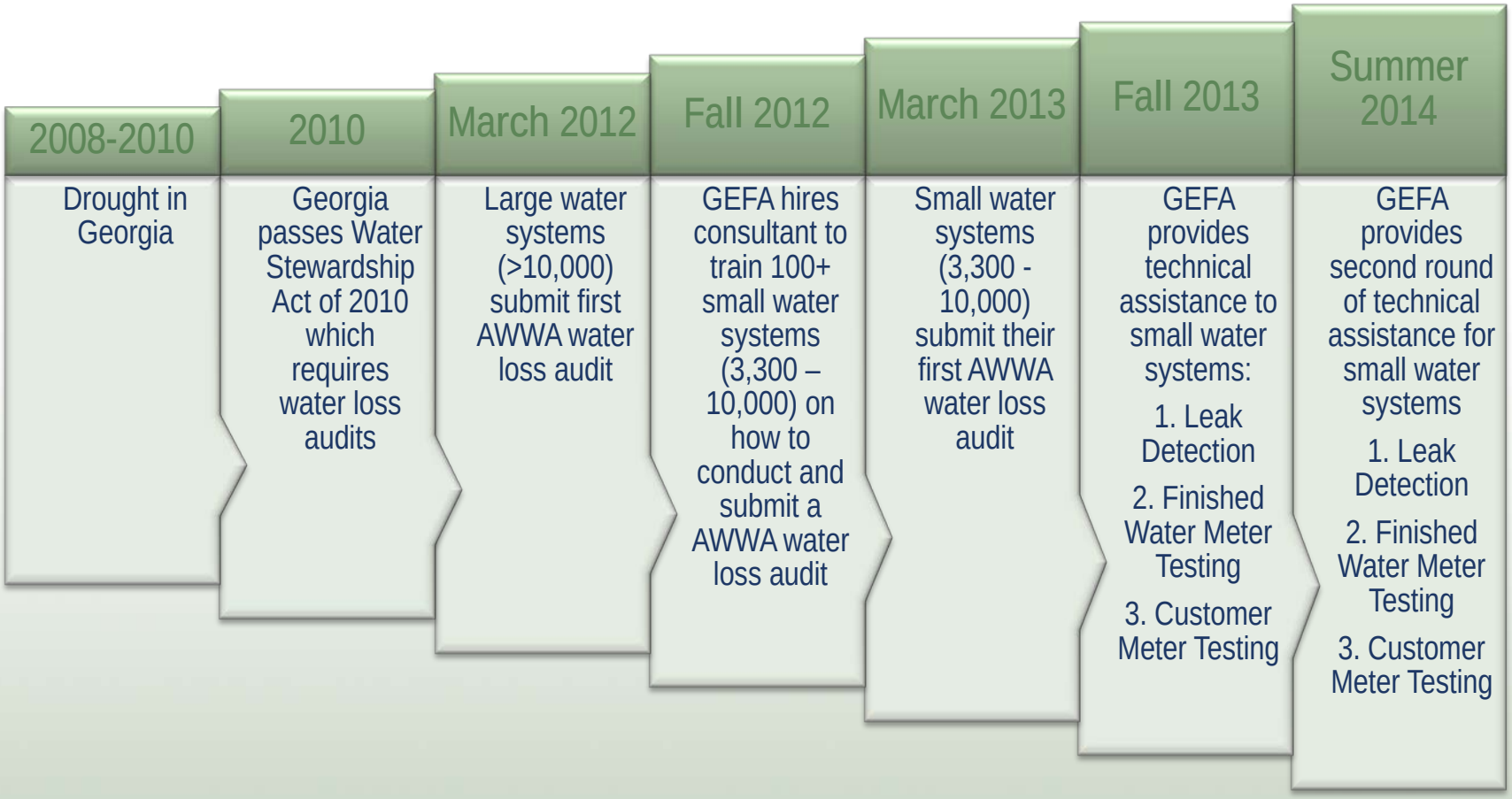
Drought Impact Types:
- Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://drought.unl.edu/dm

Released Thursday, July 28, 2011
Author: Brad Rippey, U.S. Department of Agriculture

Timeline of Events



Water Stewardship Act of 2010

Phased approach based on service population size*:

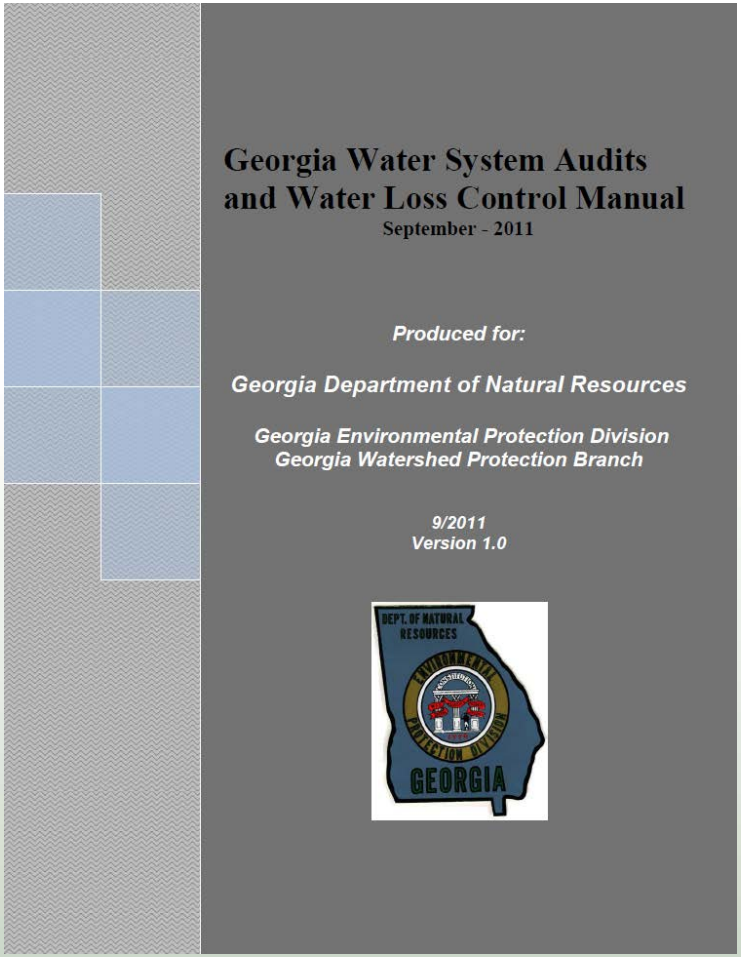
- Systems with >10,000 population, audit due March 1, 2012 based on 2011 data
- Systems with 3,300 to 10,000 population, audit due March 1, 2013 based on 2012 data
- On going annual requirement
- Infrastructure leakage index (ILI)
- In accordance with the American Water Works Association (AWWA) method/standard

Audits submitted to Georgia Environmental Protection Division and results will be posted online

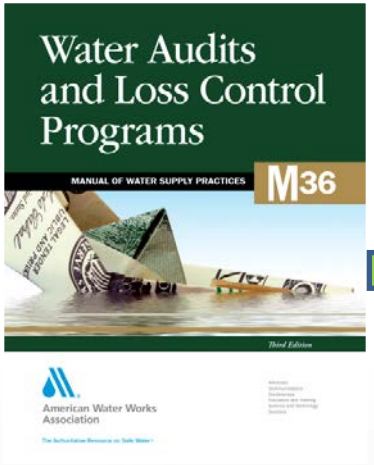
*Water systems above 3,300 represent 80% of Georgia population

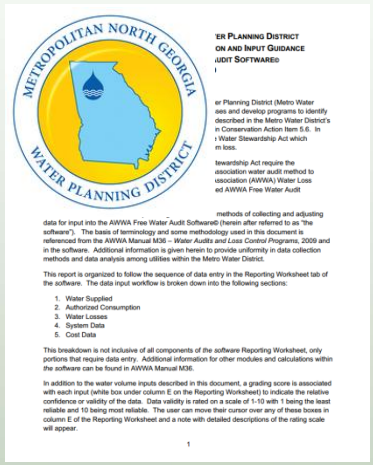
Specific Requirements for Water Systems – GA Water Loss Control Manual

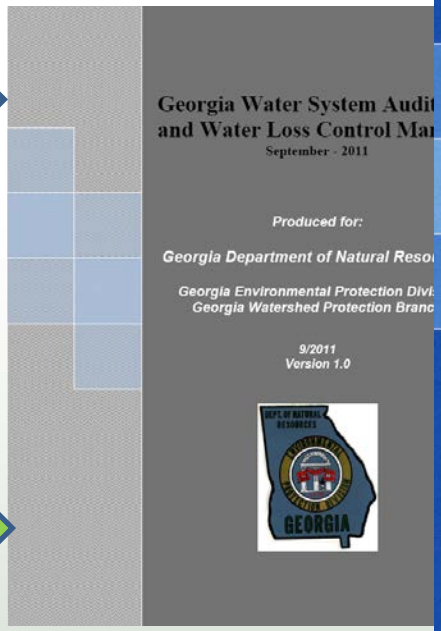
- Utilized existing resources
  - AWWA M36 Manual and Software
  - Metropolitan North Georgia Water Planning District
  - 2014: Addition of sample calculations addendum
  - Manual to be revised to include systems serving below 3,300



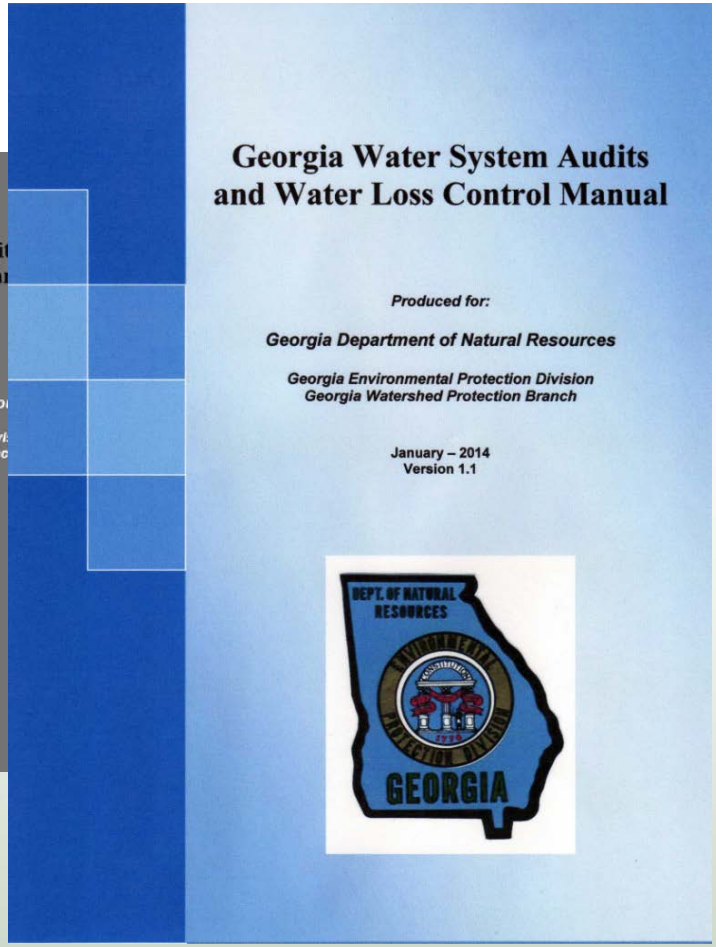
Water Loss Manual Development







2011



2014

Small Water System Audit Training - Phase I

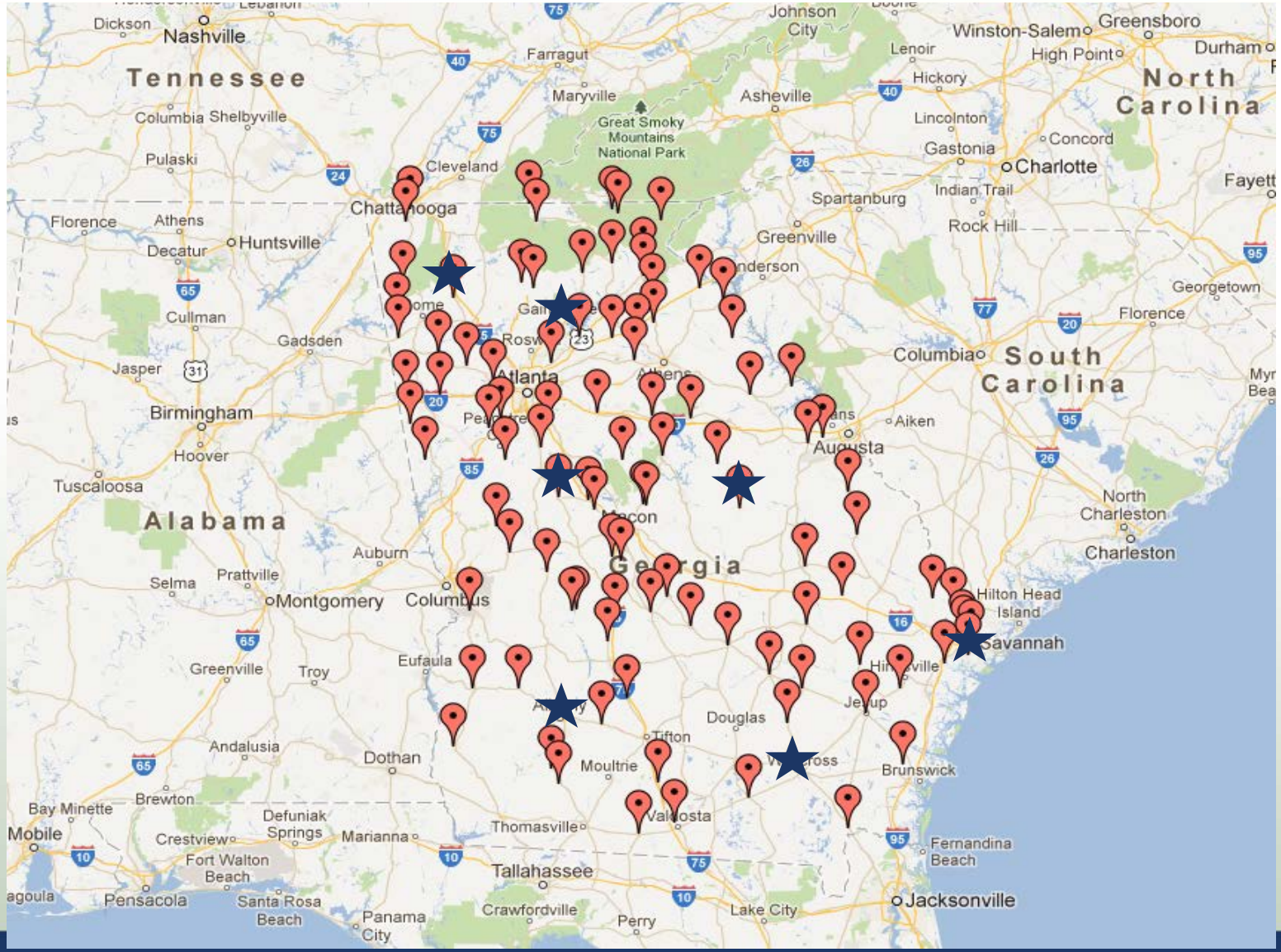
Program Design:

- Identified list of eligible systems (3,300 – 10,000 population)
- Issued RFP to locate a training contractor
- Negotiated terms of contract and structure of training program
  - Negotiation challenging due to uncertainly of how many small water systems would participate in training (variable costs vs. fixed costs)
  - Created tiered pricing structure based on marketing effort. More system participation = Greater contract value

Training Contractor Responsibilities:

- Marketed the training program to small water systems
- More than 95% (~110 of 115) signed up for the 9-month in-depth training program
- Established geographically beneficial training locations (7 locations)
- Training program encouraged small water systems to bring consulting engineer
- 100% water audit submission by deadline

Small Water System Audit Training – Phase I



Small Water System Audit Training – Program Overview

• Webinar – kick off	June 2012
• Workshop 1: Basics	June 2012
• 2011 Practice Audit & Validation Call	July 2012
• Workshop 2: Next Steps & Momentum	August 2012
• Homework Phase	Sept – Dec 2012
• Workshop 3: Showtime for 2012 Audit	Jan-Feb 2013
• 2012 Audit Validation Call	Feb 2013
• Submittal of your 2012 Water Audit to EPD	March 2013

Small Water System Feedback: Some of the Biggest Surprises

- “Apparent and Real loss - didn't realize how much could be lost through faulty meters.”
- “Updating/performing audit was easier than originally thought.”
- “Amount of money we do not collect”
- “Impact of water loss on finances”
- “The more money/water we find, the less we may need to borrow for capital projects”

Small Water System Technical Assistance – Phase II

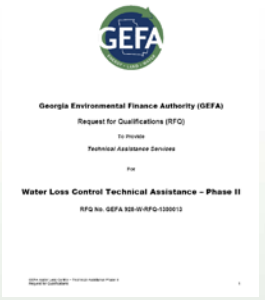
Program Design

- Identified lists of eligible systems (3,300 – 10,000)
- Only those small water systems that submitted their water loss audit by deadline were eligible (~109 of 117)

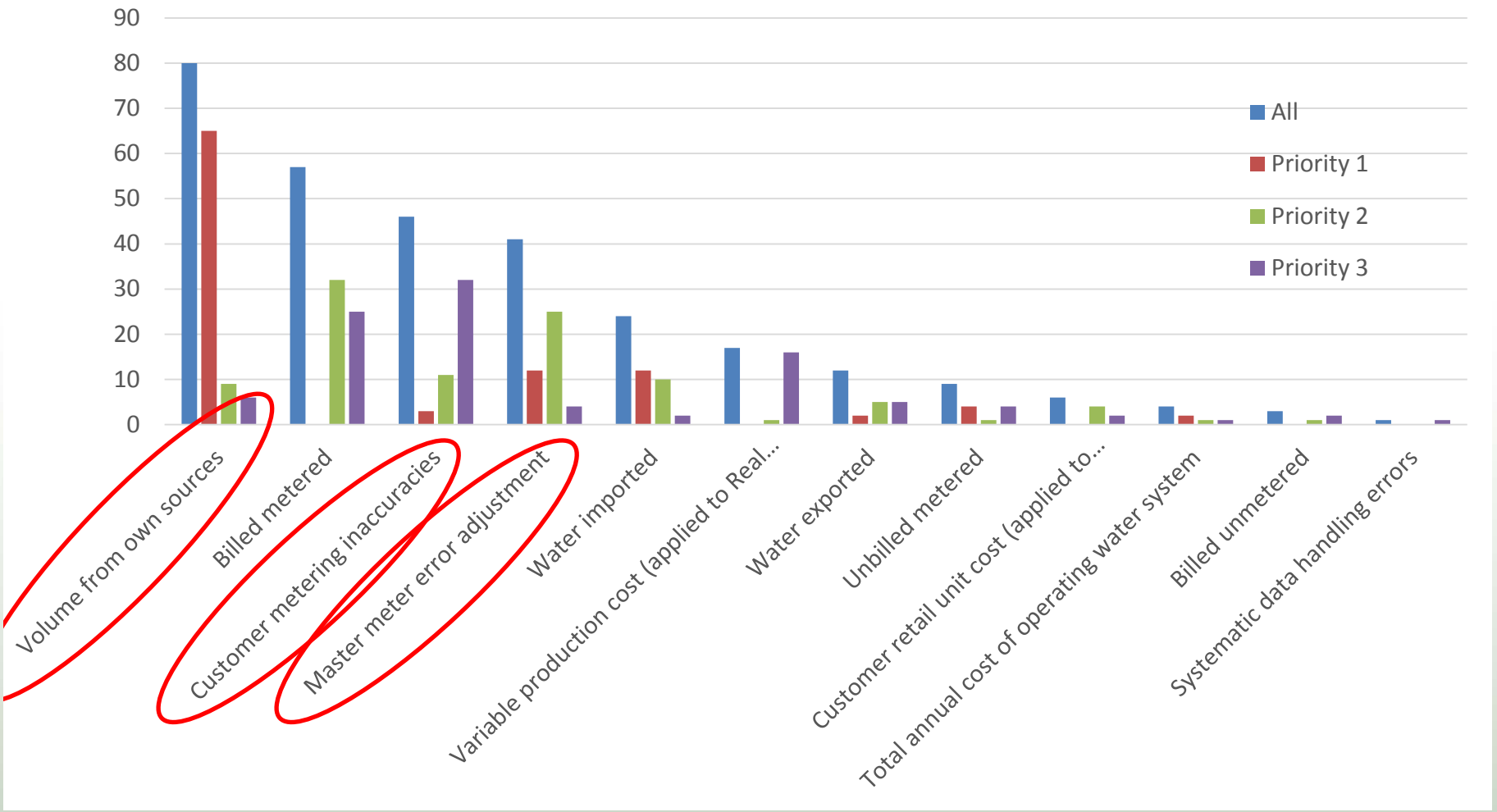
FREE!

Program Manager Responsibilities

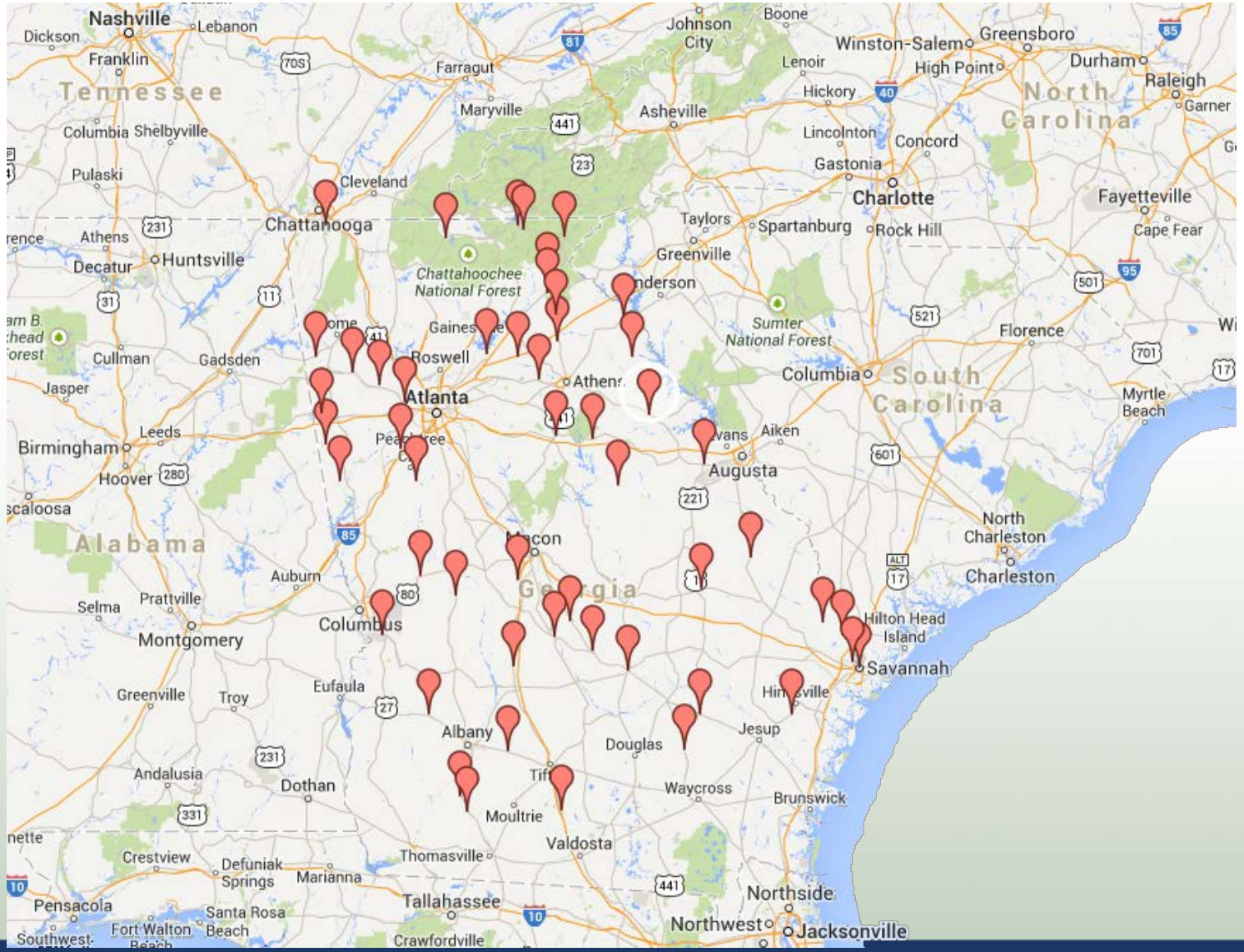
- Analyze data to determine where money should be spent:
  - No capital improvement projects
  - No ongoing soft costs
- Develop application process to prioritize projects
- Draft RFPs to locate qualified companies to provide the technical assistance
- Manage technical assistance projects via multiple contractors
- Advisor to small water system in project scope



Small Water System Technical Assistance - All Priority Areas for Improvement



Small Water System Technical Assistance – Phase II

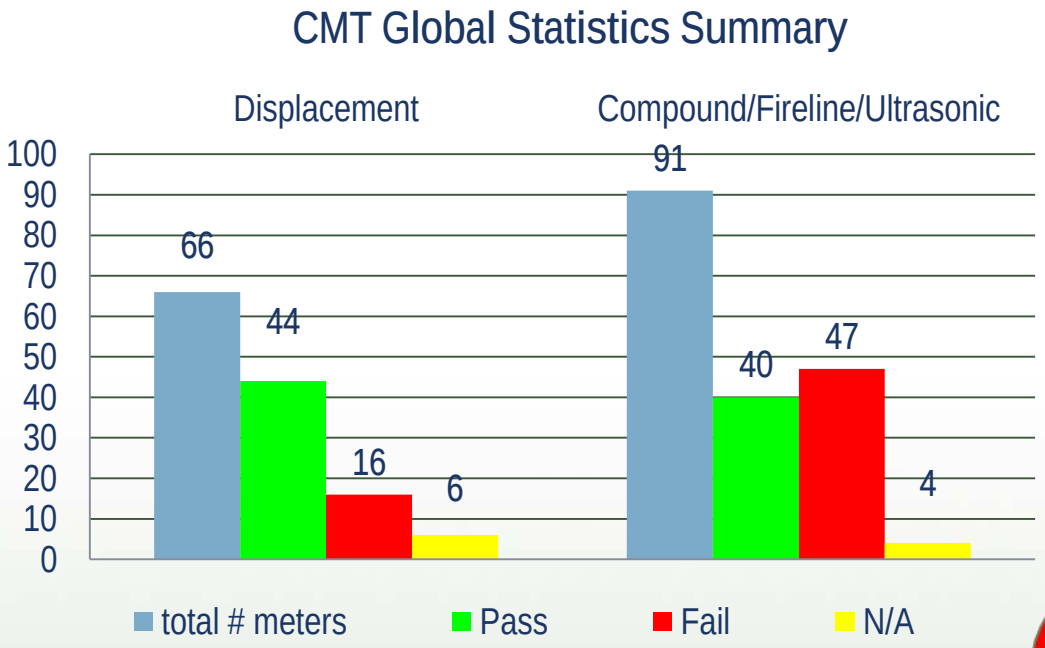


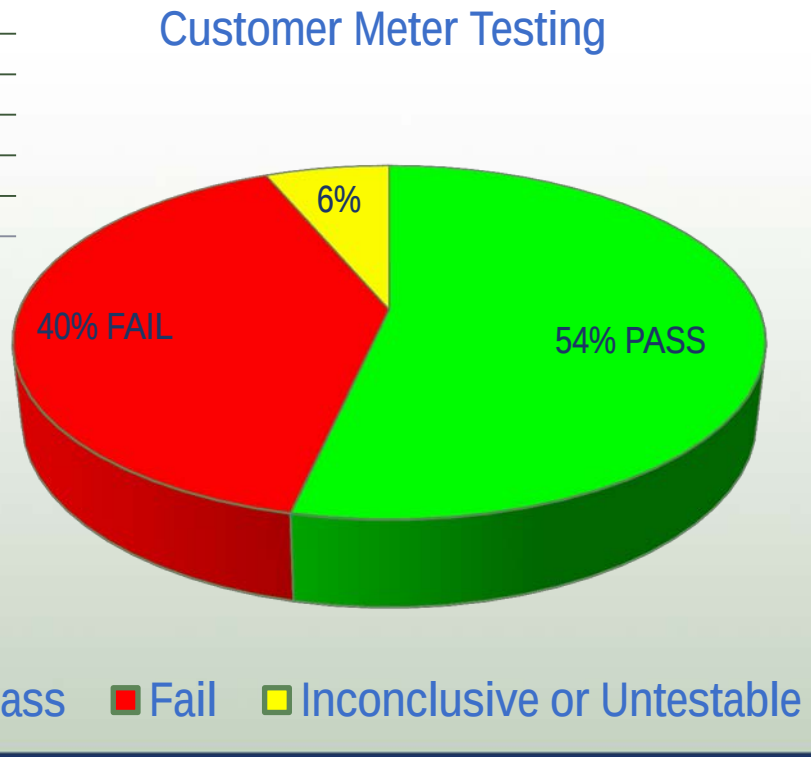
51 projects

Small Water System Technical Assistance – Phase II Program Structure

- Hired two contractors per project type for negotiation purposes
- Program Manager manages the daily activities of contractors

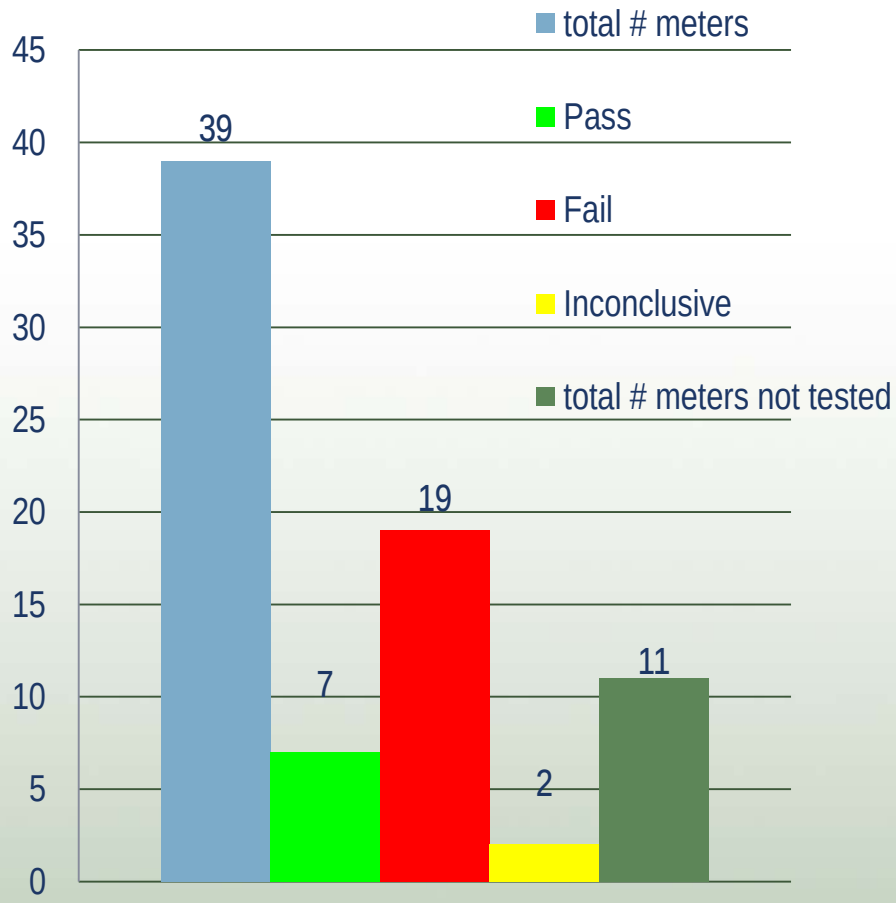
Small Water System Technical Assistance – Customer Meter Testing (CMT)



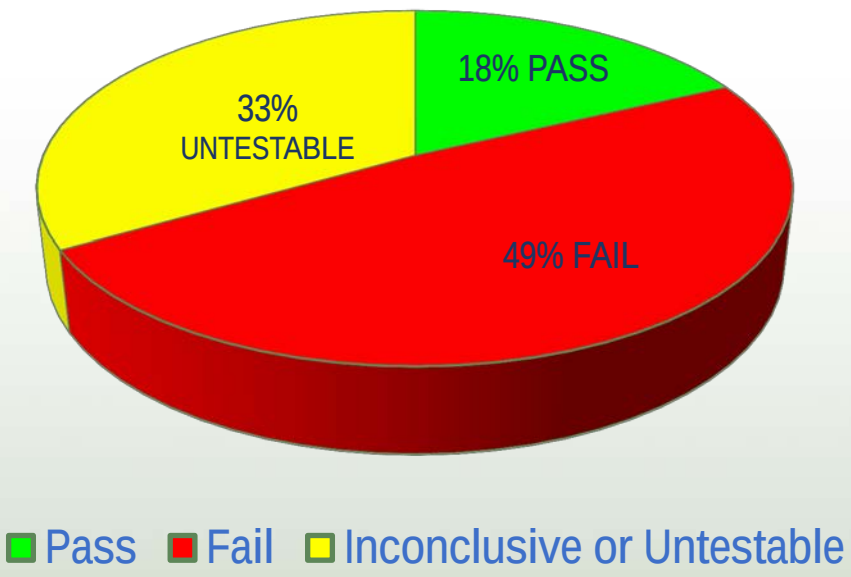


Small Water System Technical Assistance – Finished Water Meter Flow Verification (FWM)

FWM Global Statistics Summary



Finished Water Meter Flow Verification



Small Water System Technical Assistance – Phase II - Project Summary

Finished Water Meter Flow Verification					
Number of Participating Water Systems	Number of Finished Water Meters tested	Number of meters passing within AWWA accuracy limits		Average inaccuracy for meters not passing within AWWA accuracy limits (%)	
17	28	7		13%	
Customer Meter Testing					
Number of Participating Water Systems	Number of Customer Meters tested	Number of meters passing within AWWA accuracy limits		Average inaccuracy for meters not passing within AWWA accuracy limits (%)	
12	147	84		24%	
Pilot Leak Detection					
Number of Participating Water Systems	Number of miles of distribution line surveyed	Number of leaks found	Annual leakage volume found (Mgal)	Annual Energy Cost Savings ($)	Annual Chemical Cost Savings ($)
23	731	118	270	35,700	67,800

Production costs include chemical and energy costs

Georgia's water loss initiatives are gaining national attention

CNT

Prepared by the Center for Neighborhood Technology
February 2014

Stepping Up Water Loss Control
Lessons from the State of Georgia

For any state or agency looking to increase adoption of M36, there are several key takeaways from Georgia's new auditing requirements:

State agencies and their partners should place emphasis on the value and usefulness of M36 for utilities. Beyond instituting any auditing requirement, states should highlight the benefits of this practice in helping utilities improve business operations.

Data validation is paramount. Water loss audits and future planning must be based on accurate and reliable audit results in order to effectively improve water systems.

Encourage strong relationships between state and local governments. It is critical for states to have a strong commitment to providing training resources and support to utilities as e M36 auditing method.

ublic reporting. Sharing audit results improves , accountability and understanding between a customers.

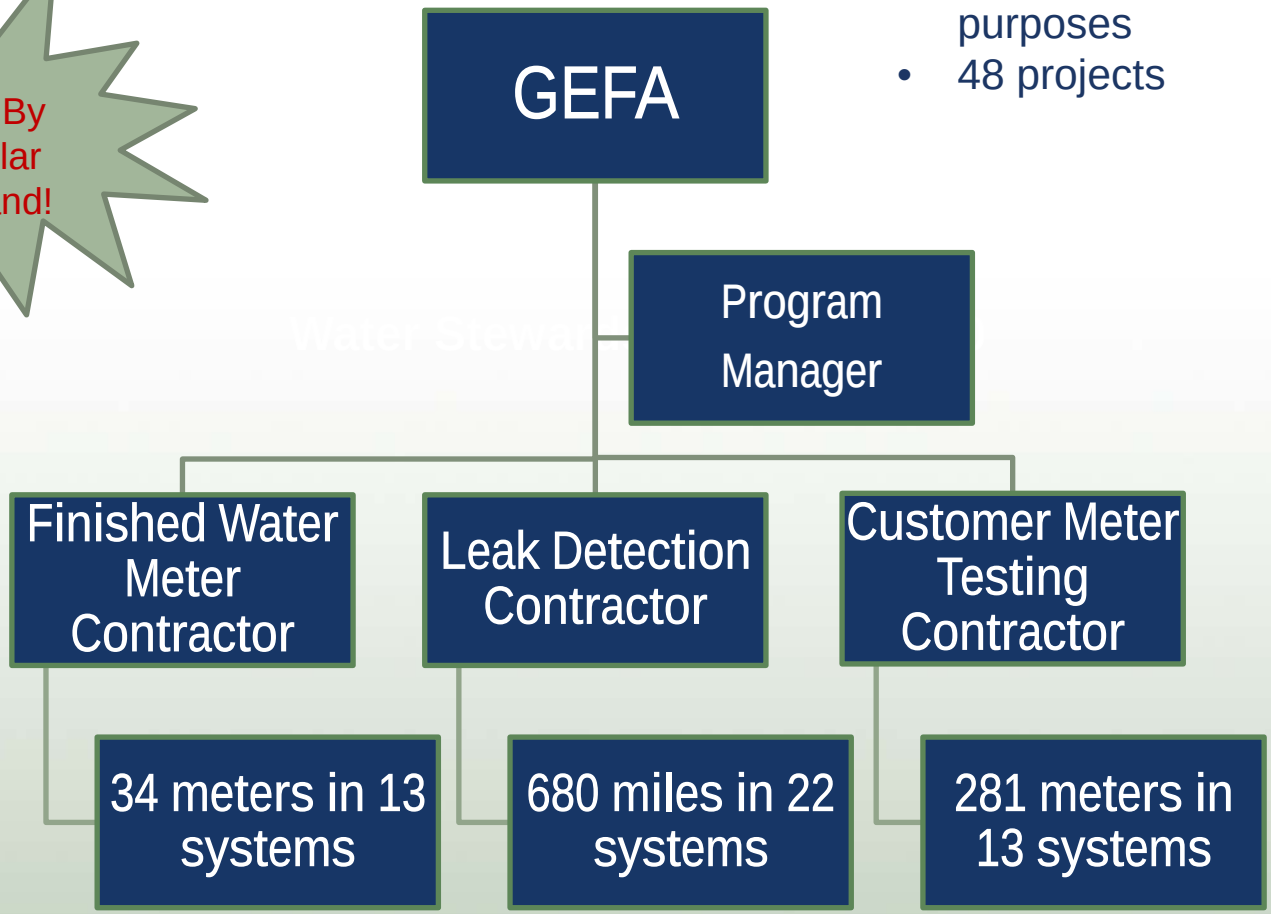
c training sessions. The auditing process can mportant to provide engaging trainings that e benefits of adopting the M36 method.

THE AMERICAN WATER WORKS ASSOCIATION (AWWA) AND INTERNATIONAL WATER ASSOCIATION (IWA) WATER AUDITING METHODOLOGY PRODUCT (M36) IS NATIONALLY RECOGNIZED AS THE BEST METHOD FOR ACHIEVING A ROBUST AND STANDARDIZED WATER LOSS AUDIT. IT ALLOWS UTILITIES TO RATE THEIR DATA VALIDITY AND IDENTIFY INTERNAL ISSUES, WHILE HELPING STATES AND REGIONS TO LOOK AT WIDER-SCALE WATER LOSS TRENDS. THIS ENABLES THEM TO MORE EFFECTIVELY REDUCE WATER WASTE, AND MAKE A STRONGER ECONOMIC CASE FOR INFRASTRUCTURE REINVESTMENT AND OTHER WATER LOSS INITIATIVES.[2]

Small Water System Technical Assistance – Phase IIa Program Structure

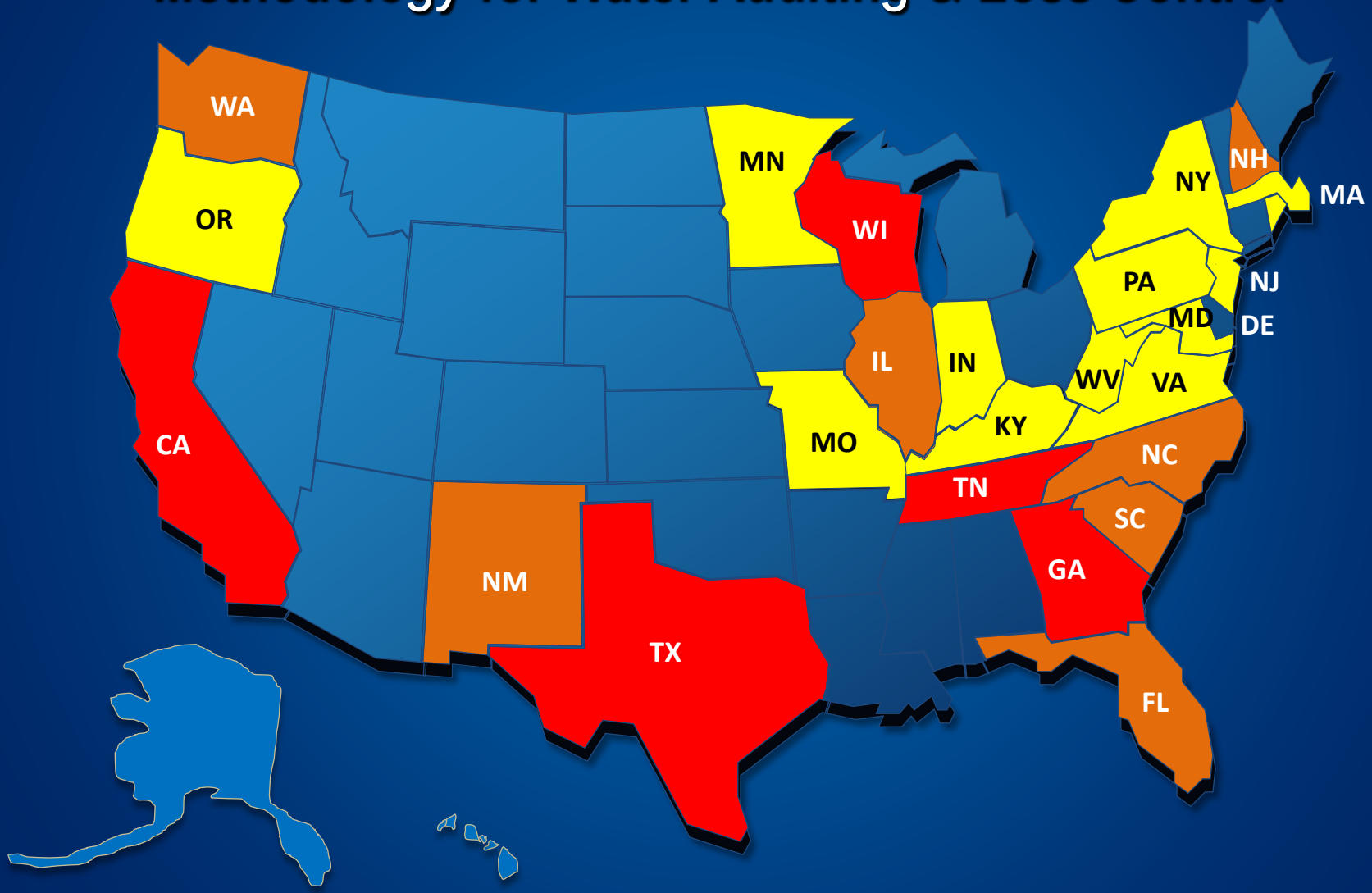
- Hired one contractors per project type for negotiation purposes
- 48 projects

Back By Popular Demand!



Landscape of Water Loss Auditing, Reporting & Performance Targets

Requirements or References to AWWA M36 Methodology for Water Auditing & Loss Control



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