

# CALIFORNIA WATER LOSS CONTROL COLLABORATIVE

## Stakeholders



CA-NV Section AWWA



CA Department of Water Resources



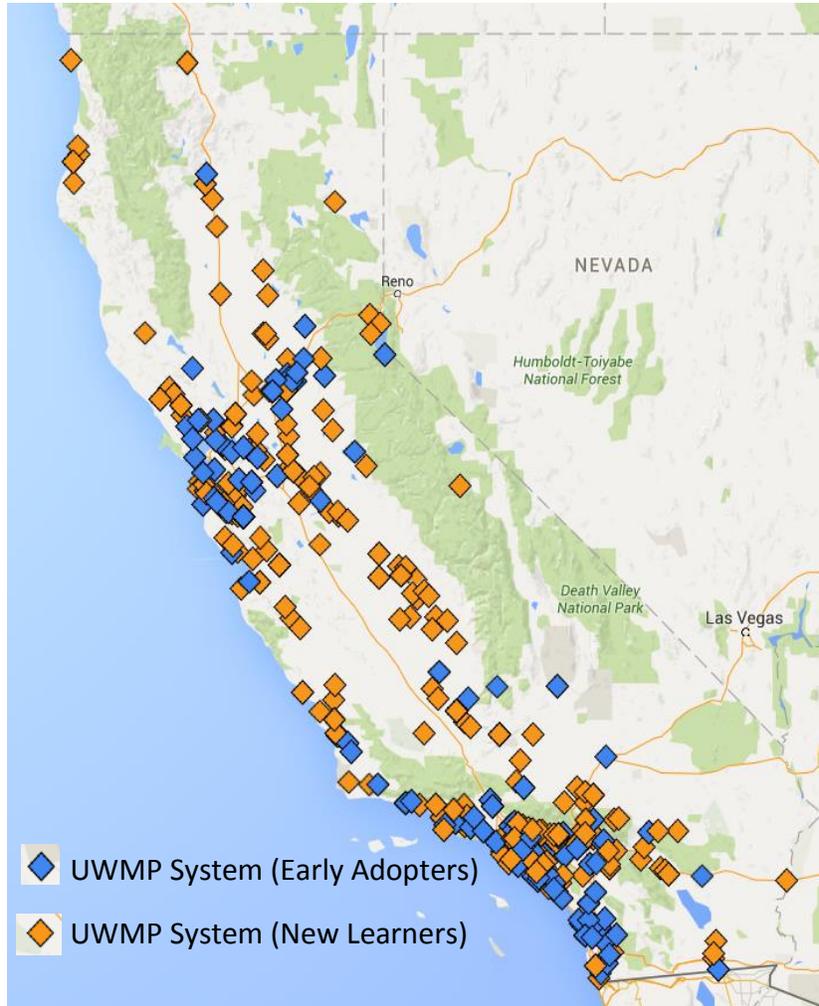
State Water Resources Control Board



California Urban Water Conservation Council



Natural Resources Defense Council



US Environmental Protection Agency



Sweetwater Authority



City of Sacramento



Water Systems Optimization



Cavanaugh

## CALIFORNIA WATER LOSS CONTROL COLLABORATIVE

September 2015

The CA-NV AWWA Section has assembled a statewide steering committee to coalesce related but independent water loss initiatives across the State into the California Water Loss Control Collaborative. The collaborating team includes water Utilities across California, representatives from EPA, the State Water Resources Control Board, the California Urban Water Conservation Council (CUWCC), California Department of Water Resources (DWR), conservation advocacy organizations, and subject matter experts.

The goal of the Collaborative is to create a unified water loss control training, data validation, and long-term loss reduction strategies tailored to meet Utilities wherever they are on their water loss control continuum. This will be achieved through enhancement of Utility knowledge and application for accounting and control of water system losses, resulting in water conservation, system efficiency improvements and revenue recovery at the Utility level.

Phase 1 of the Collaborative is designed to accommodate new learners, early adopters and advanced practitioners, in a 30-month program that culminates in the universal submittal of validated AWWA M36 water audits by all Utilities required to submit Urban Water Management Plans in California. The Collaborative is modeled after the successful multi-year water loss program in Georgia, with adaptations for California's needs. The learning model is built on a series of graduating training steps that provide practical application and learning through reinforcement.

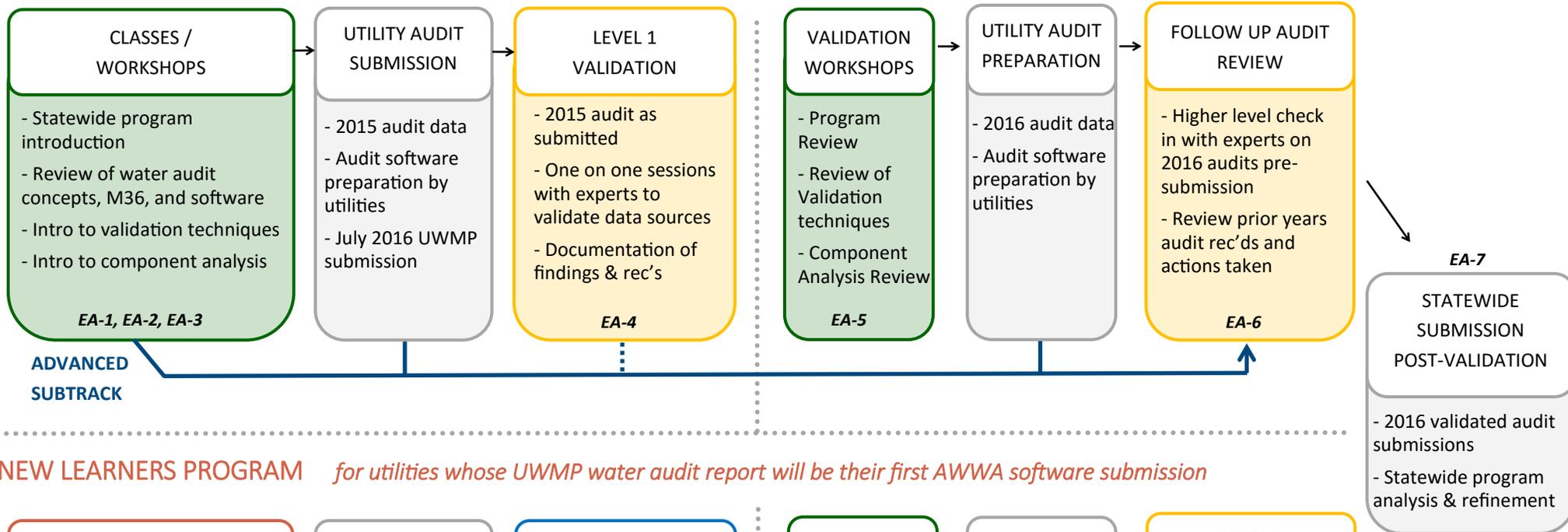
Budget needs for Phase 1 have been developed by the Collaborative Steering Committee. Total budget needed for Phase 1 is approximately \$3.25 Million.



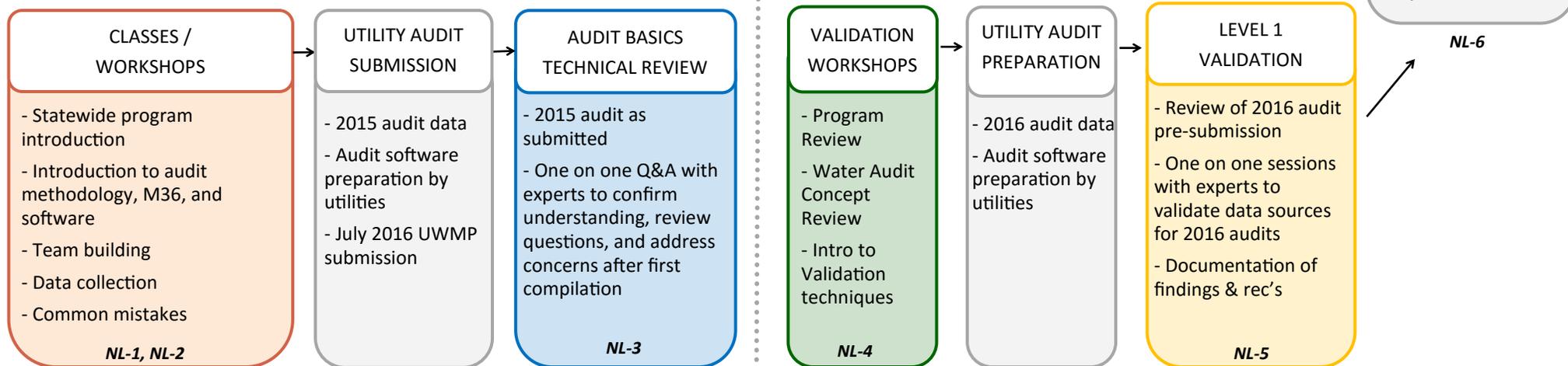
2015/2016

2017

**EARLY ADOPTERS PROGRAM** *for utilities that have submitted an AWWA water audit to the CUWCC*



**NEW LEARNERS PROGRAM** *for utilities whose UWMP water audit report will be their first AWWA software submission*



# Statewide Water Loss Management Program

## Phase 1

## Phase 2

## Phase 3

**Establish Annual M36  
Water Auditing**

**Achieve Minimum  
Standard of Audit  
Reliability**

**Manage Water Loss  
Performance for Long-  
Term Reduction**

**Requirement**

Implement established requirement for annual M36 Water Audits

**Data Management**

Augment DWR Data Management & Review Process  
 Establish posting system and communication protocols

**Benchmarking**

Suite of Performance and Process Measures  
 System specific improvement over time in a cost-effective manner

**Outreach**

Educate Regulatory Community on M36 Method and appropriate use of performance indicators

**Validation**

Establish minimum standards of validation for quality assurance  
 Determine by Agency or 3<sup>rd</sup> Party

**Compliance**

No universal targets  
 Excessive thresholds established

**Training & Tech Asst**

Establish Statewide Water Loss Control Committee

Develop State Manual and Training Framework

Provide extended, progressive training to utilities

**Certification**

Establish validation program until certification program is in place

Design and implement a Certified Water Audit program for sustained quality control

CA-NV Section Administers Qualified Water Loss Auditors Certification Program

Annual audit submission threshold exceedances  
 System specific progress review during Urban Water Management Plan submissions

Year 1

Year 2

Year 3

Year 4

Year 5

Year 6

Year 7

## Validation Levels

Level	Descriptor	Validation Focus	What's involved	Outcome	Depends on
1	Top down score review validation	Data grades, data validity score, gross errors and anomalies in the metrics	Desktop review of what is immediately available. 1 to 2 hour phone call to interview utility staff, preparatory and documentation time. Interview questions are focused on practices to make sure the data grades have been applied correctly and consistently. Through this discussion, anomalies are discussed and either confirmed, corrected, or noted for needing further investigation.	Validation interview form documenting the call, including any recommendations from the validation expert.	System size & complexity
2	Top down data mining validation	Supply and consumption volumes from existing data that is mined	Data mining for limited desktop analysis. Analysis of available data, including production database and reports from SCADA system to identify gaps in the data chain. Data mining in the billing system to confirm and cleanse consumption volumes to remove redundancies from the data mining process which can come about from record duplications. Also validates exclusion of non-potable volumes in the totals. Validates that consumption volumes from low mid and high level detail extractions are corroborated. Analysis of available meter testing data for audit calculations. Applies 95% confidence limits to the AWWA water balance.	Technical Memo with findings and recommendations	Complexity of supply setup, metering setup and billing setup. Can limit scope to just look at 1 of the 3 between supply, metering and billing.
3	Bottom up field investigation validation	Supply and consumption volumes from new data that is gathered or mined	Field investigations and extensive data mining. Supply meter testing and in-field verification of meter-transmitter-SCADA data chain. In field customer meter testing. Night flow testing & analysis for leakage.	Technical Memo with field data, findings and recommendations	Varies widely by system, mainly on how much field work is involved