

**Revised Draft Proposal:**  
**Inclusion of Apparent loss in Water Loss Control Regulation**

**Summary**

“Apparent loss” is defined in the American Water Works Association (AWWA) M36 manual as the non-physical water loss or revenue loss that occurs when water loss deliveries are not measured accurately. Real loss, or losses from physical leakage, are estimated in a water loss audit by subtracting delivered water and estimated apparent loss and production meter inaccuracies from total water supplied into the distribution system.

Stakeholders have suggested that real loss estimates need higher accuracy than currently reported data to set reasonable standards. The improvement in real loss estimates is contingent on reliable estimates of the large supply and delivery volumes, and thus the associated meter accuracy. Data handling and billing errors can contribute to errors in real loss estimates. Some stakeholders have also requested that the Water Board include apparent water loss control measures within the Water Code section 10608.34 regulatory requirements.

Several water suppliers report relatively low real loss, with 74 suppliers under 15 gallons per connection per day. A large number<sup>1</sup> of these suppliers do not conduct source meter testing or calibration, which could introduce an error in the real loss estimate. A deeper dive into the underlying data informing the audit would improve accuracy in water loss reporting.

Water Board staff is considering recommending an apparent water loss control regulatory component in the water loss regulation. Staff developed an initial draft of this proposal for requirements for regular flow meter testing for customer and production meters to address apparent loss based on the public comments received in September 2019. Water Board staff conducted a series of focused stakeholder calls to receive feedback on the initial draft in December 2019. Technical comments received included requiring random and representative sample testing of meters annually, instead of testing all meters in the meter fleet over a period of time. Some comments recommended against additional regulatory burdens.

Pursuant to comments received on the initial draft proposal, the revised draft proposal would require urban retail water suppliers to report on their current practices to improve the accuracy of apparent loss estimates, and thus their real loss estimates. Staff recommends that the reporting be in form of responses to the proposed data submission request by 2024 to minimize reporting burdens.

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<sup>1</sup> The number of suppliers that could not provide data on source meter inaccuracies, despite reporting water supplied through own sources, ranged from 160 to 183 suppliers (about 42 to 52% of reporting suppliers). About 20% of suppliers could not provide data on export meter inaccuracies, despite reporting water exports.

## Proposed regulatory requirements

Urban retail water suppliers would provide responses to the following data submission request by 2024:

1. How much of your agency's source water is metered?  
\_\_\_\_\_ %
  
2. Does your agency have a program for regular flow testing of its production and source meters?
  - Agency has a program for regular flow testing of source meters.
  - Agency plans to begin a program for regular flow testing of source meters by year \_\_\_\_\_.
  - Agency does not plan to have a program for regular flow testing of source meters.
  
3. On an average, how frequently are source meters installed in your system flow tested, to determine accuracy? Select all that apply.
  - All source meters are tested once every \_\_\_\_\_ years.
  - Source meters representing \_\_\_\_\_ % of the total flow are flow tested every \_\_\_\_\_ years.
  - Other \_\_\_\_\_
  
4. Does your agency have a program for regular electronic calibration of source meters?
  - Agency has a program for regular electronic calibration of source meters.
  - Agency plans to begin a program for regular electronic calibration of source meters by year \_\_\_\_\_.
  - Agency does not plan to have a program for regular electronic calibration of source meters. (skip question 4)
  - Other \_\_\_\_\_
  
5. How frequently are source meters installed in your system electronically calibrated?
  - All source meters are electronically calibrated once every \_\_\_\_\_ years.
  - Source meters representing \_\_\_\_\_ % of the total flow are electronically calibrated every \_\_\_\_\_ years.
  - Other \_\_\_\_\_
  
6. How much of your agency's billed water is metered?  
\_\_\_\_\_ %

7. Does your agency have a program for regular flow testing of its customer meters?
- Agency has a program for regular flow testing of customer meters.
  - Agency plans to begin a program for regular flow testing of customer meters by year \_\_\_\_.
  - Agency does not plan to have a program for regular flow testing of customer meters. (skip question 6)
  - Other \_\_\_\_\_
8. How frequently are customer meters installed in your system flow tested, to determine accuracy? Select all that apply.
- All customer meters are tested once every \_\_\_\_ years.
  - A representative sample of \_\_\_\_% or \_\_\_\_ meters out of the entire customer meter fleet is flow tested every \_\_\_\_ years.
  - Other \_\_\_\_\_
9. Does your agency have a process for reducing and managing data handling and billing errors?
- Yes
  - No

### **Background on apparent loss estimates in California water loss audit reports**

Recent California validated utility water audit data reported to the Department of Water Resources shows that for apparent water loss, meter inaccuracy is dominant; apparent water loss due to meter inaccuracy is about 6 times larger than the volumes each for unauthorized use and data management errors. However, this may be misleading, in that without exception utilities chose to use the M36 software default value of 0.0025 (0.25%) for both unauthorized use and data errors. Accepting these default volumes as roughly indicative of the real situation, in the aggregate across all validated utility water audit reports to DWR, apparent water loss makes up about 26% of total reported water loss. Real water loss makes up the remaining 74%.

The typical utility goal of customer meter testing is to identify meters that are significantly under- or over-registering, or inoperable, so they can be replaced. The goal for source meter testing is to measure errors associated with large volume measurements.