

Distribution System Water Loss Reporting in UWMPs

Currently urban water suppliers are required to report on past and current water use, as well as projected water use, among the various water use sectors. This recommendation would add distribution system water loss as a new water use sector, in addition to the existing list of nine sectors.

Urban water systems deliver treated water under pressure to customers through miles of pipes. These pressurized systems include large numbers of valves, joints and connections and incur some amount of unavoidable water losses. The California Water Plan Update 2013 reports that distribution system water loss statewide amounts to ten percent of the total volume of water supplied¹, based on literature reviews and an analysis of water audit data from 17 water agencies throughout California. In 2011 a multi-state evaluation showed that water losses ranged from 20 to 60 gallons per service connection per day in many water agencies in the US.² Optimum water management reduces these water losses to the extent cost-effective, saving resources as well as the chemical and energy costs associated with treatment and distribution of the water.

An important first step for water agencies looking to reduce distribution system losses is a water audit. Performing water audits would raise awareness of the level of real losses in water distribution networks, and motivate agencies to implement best management practices to curb their real loss volumes. In recent years the American Water Works Association (AWWA), working with the International Water Association, developed a new and more sophisticated water audit methodology, and a user-friendly software tool to perform water system audits. The AWWA Water Audit methodology is published in the M36 Water Audits and Loss Control Programs Manual (2009). The new auditing practices include conducting a “top-down” water audit and water balance, a “bottom-up” validation of meter accuracy of system data, and an analysis of system components. In this new approach, the AWWA moved away from earlier practices that emphasized ‘acceptable’ percentages of unaccounted-for water to focus on cost-effective water loss control. This approach generally results in lower water losses overall, but focuses on a water agency discovering the amount of water loss that is cost effective for them to recover. Operational practices include fixing reported and unreported leaks, pressure reduction, and meter calibration and replacement. Potential benefits of a water loss control program include improvement to water resource management, increased revenue recovery, reduced system disruptions, and reduced potential of contamination.³

The states of Georgia, Maryland, New Mexico, and Texas have requirements for water systems to complete water audits based on the AWWA Water Audit Software methodology. The California Urban Water Conservation Council BMP 1.2 requires water utility members to complete the AWWA software annually. By incorporating this AWWA methodology into the UWMP reporting process, water loss

¹ California Water Plan 2013 Update, Chapter 3, Urban Water Use Efficiency.

² AWWA Water Loss Control Committee, 2011 Validated Data.

³ AWWA. *M36: Water Audits and Loss Control Programs*, Third Edition. 2009.

control in California is expected to improve, helping individual water agencies to meet their overall water use efficiency goals and the state to meet the 20 by 2020 target.

ITP Recommendation #_:

Require distribution system water loss reporting in Urban Water Management Plans

The Independent Technical Panel on Demand Management Measures (ITP) recommends that the Legislature revise the Urban Water Management Planning Act to require urban water suppliers in updating their urban water management plans (UWMPs) to include annual estimates of distribution system water loss. This recommendation would add distribution system water loss as a new water use sector, in addition to the existing list of nine sectors.

For the 2015 UWMP updates, urban water suppliers would only be required to provide distribution system water loss estimates for at least one year prior to 2015. All subsequent UWMPs would be required to provide distribution system water loss estimates for each of the five years preceding the plan update.

To ensure consistency in reporting, the California Department of Water Resources (DWR) would be directed to develop guidelines for the estimation and reporting of distribution system water loss. In developing the guidelines, DWR would require reporting of water loss audits based on the methodology developed by the American Water Works Association (AWWA). Water suppliers in reporting on water loss would be required to use the DWR guidelines and report audit outcomes using worksheets from the AWWA method.

Suggested statutory language: Modify Section 10631(e) of the Water Code with the addition of a new subsection (1)(J) and new subsections (3) and (4), as shown in underlined and italicized text below:

10631 (e) (1). Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

- (A) Single-family residential.
- (B) Multifamily.
- (C) Commercial.
- (D) Industrial.
- (E) Institutional and governmental.
- (F) Landscape.

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(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(3) For the year 2015 Urban Water Management Plan update, the distribution system water loss shall be quantified for a minimum period of one year prior to 2015. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.

(4) The distribution system water loss shall be reported in accordance with guidelines to be developed by the department. In developing guidelines for distribution system water loss reporting, the department shall consider requiring water loss audits based on the methodology developed by the American Water Works Association, and consider Best Management Practices promulgated by the California Urban Water Conservation Council.