

California

Water loss is a particularly important issue in California, where approximately 96% of the population is served by public water suppliers. The US Geological Survey (USGS) estimates that in 2015 (the most recent year available), California's public water suppliers withdrew an average of about 5,147.74 million gallons of water per day for treatment and distribution to customers. Those public water suppliers face enormous challenges when it comes to replacing and repairing their systems. The U.S. Environmental Protection Agency (EPA) recently found a 20-year capital improvement need of more than \$51.03 billion for California's water systems to continue to provide safe drinking water.

The agency with jurisdiction over water loss reporting is the California Department of Water Resources (DWR). Additionally, the State Water Resources Control Board is responsible for setting performance standards for the volume of water losses.

In October 2015, California Governor Brown signed a [bill](#) that makes water loss reporting by water utilities more frequent, more accurate, more transparent, and far more useful. Taken together, these actions place the Golden State at the leading edge of all states that have acted to curb the loss of water from leaking urban water distribution systems - a huge issue when recurring droughts threaten the reliability of developed water supplies.

The new law, SB 555, builds upon legislation enacted in 2014 that required the inclusion of water loss audit reports in the Urban Water Management Plans submitted every five years by urban water suppliers, beginning in 2016. SB 555 now requires annual reporting, beginning in 2017, thus daylighting this important information on water leaks and losses every year, rather than waiting for information being held for 5 years.

SB 555 also directs that water audit reports be validated before being submitted to the state. Validation is the process whereby technical experts engage with individual water suppliers to review proposed submissions and ascertain the sources of the data and characterize the quality of the data. Validated audits provide more useful and actionable information for individual water suppliers and more meaningful data for aggregation and analysis by researchers and policy makers.

To strengthen transparency and accountability, the SB 555 also requires that -

- all audit reports must be consistent with terminology and reporting methods recognized by the American Water Works Association;
- all audit reports must include the name and technical qualifications of the person(s) providing validation;
- all audit reports must be attested by the utility's chief financial officer, chief engineer, or general manager;
- any person selected by a utility to validate its own audit must meet certification requirements approved by the Department of Water Resources.

- all validated audit reports submitted to the state are to be promptly posted on the department's web site "in a manner that allows for comparisons across water suppliers."
- All audit reports are to be accompanied by information on the steps taken by the water supplier in the previous year to improve data validity, reduce apparent losses, and reduce real losses.

To carry out the law's annual reporting requirements, the Department of Water Resources was charged with adopting rules for the form, content, and submission of water audit reports. DWR's rules took effect in January 2018, although most water suppliers had already met the statutory deadline for the initial submission of validated water audit reports, which was October 1, 2017. Several key issues were addressed in the rulemaking. Level 1 validation was appropriately described, drawing primarily from the 2016 Water Research Foundation guidance manual. Utilities were given the option of reporting on either a calendar year or fiscal year basis. (About 2/3 have chosen to report on a calendar year basis.) And utilities operating separate water distribution systems are required to submit a report on each separate system, rather than a single, rolled-up report. However, utility-operated distribution systems for recycled water were excluded from any reporting requirement.

Completed audit reports are now posted by the Department of Water Resources and are available for download and review at the link below.

With financial support from the state, the California-Nevada Section of the AWWA played an important role in offering training to utilities on the audit process, as well as hosting a consulting team that provided Level 1 validation for all audits being prepared under SB 555. The consultants' description of these programs, along with an initial overview of the first year of validated audits, is available here: <http://ca-nv-awwa.org/canv/downloads/2018/WLTapFinalReport.pdf>

An additional overview of these initial audit submissions, and an initial estimate for cost-effective water savings opportunities, prepared by Kunkel Water Efficiency Consulting is available here: <https://www.nrdc.org/resources/report-evaluation-2016-validated-water-audit-data-california-water-utilities>

An important additional feature of the law directs the State Water Resources Control Board to set performance standards for urban retail water suppliers regarding the volume of water losses. Notably, the board can act no sooner than 2019, ensuring that several years of validated water audits are available before water loss performance standards are set. This ensures that the board will have access to a sufficient body of validated audit reports that effectively characterize current practices, loss experience, statewide and regional trends, before setting specific water loss performance requirements. The Board is conducting a series of stakeholder workshops before initiating its formal rule-making.

Previous Policies Relating to Water loss in California

In 2009 California enacted SB 7X7, which called for a 20 percent reduction in urban per capita water use

by 2020. Water use was defined to include water losses as well as water deliveries to customers, so reductions in water losses are fully credited to meeting a water supplier's 2020 goal.

In January 2014, Governor Edmund G. Brown declared a drought state of emergency for the State. As part of this declaration, and in subsequent executive orders in April 2014, April 2015, and May 2016, state agencies have been directed to accelerate implementation of a wide range of water conserving activities and programs.

In September 2014, Governor Brown signed SB 1420, a set of amendments to the Urban Water Management Planning Act. This change in the law required, among other things, that all urban water suppliers include a quantification of distribution system water losses in their respective urban water management plans, beginning with the 2015 plan updates which were to be filed by July 1, 2016. As amended, the law required urban water suppliers to describe their demand management measures, which must include programs to assess and manage real water losses from their distribution systems. Water suppliers are also required to quantify past, current, and projected water use, including distribution system water losses. Water loss is to be reported on a worksheet based on the water system balance methodology developed by the American Water Works Association.

In May 2016, a new executive order was issued aimed at "Making Water Conservation a California Way of Life." Directive 2 of this EO calls for the Department of Water Resources and the State Water Resources Control Board to develop a permanent framework of water use targets for urban water suppliers, including strengthened standards for water lost through leaks. Directive 5 calls for DWR and the Water Board to "direct actions to minimize water system leaks that waste large amounts of water" and for the Board to prioritize funding from the Drinking Water State Revolving Fund for "local projects that reduce leaks and other water system losses."

The California Urban Water Conservation Council was a non-governmental organization made up of a majority of the state's urban water suppliers as well as several non-profit environmental organizations, including NRDC. Under a Memorandum of Understanding regarding Urban Water Conservation in California originally signed in 1991, water auditing and water loss control activities were required of all utility members. In 2009, the Council adopted a Best Management Practice (BMP) for water loss control. This BMP specifically called for the use and reporting of the Standard AWWA Water Audit and Water Balance, and further committed members to conduct a more detailed Component Analysis of their system within four years. Signatories also committed to improving the accuracy of reported information, keeping records of all reported leaks and breaks, and informing customers of potential leakage on the customer side of the meter. Implementation of this BMP was voluntary. (The Council disbanded in 2016, and reconstituted itself as an association of utilities called the California Water Efficiency Partnership.)

Validated Water Loss Audit Reports as posted by the Department of Water Resources:

<http://wuedata.water.ca.gov/>

Water Loss Reporting Regulations: California Code of Regulations, Title 23, Division 2, Chapter 7, Water Loss Audits and Water Loss Control Reporting --

[https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I3F753FD3B2324FA1B4832DED207FFEEB&originationContext=documenttoc&transitionType=Default&contextData=\(sc.Default\)](https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I3F753FD3B2324FA1B4832DED207FFEEB&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default))

SB 555 (2015) -- http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB555

SB 1420 (2014) --

http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201320140SB1420&search_keywords=water

Drought State of Emergency - <http://gov.ca.gov/news.php?id=18368>

Executive Order April 25, 2014 - <http://gov.ca.gov/news.php?id=18496>

Executive Order April 1, 2015 - https://www.gov.ca.gov/docs/4.1.15_Executive_Order.pdf

Executive Order May 9, 2016 - <https://www.gov.ca.gov/news.php?id=19408>

CUWCC BMP 1.2 Water Loss Control - <http://www.cuwcc.org/Resources/Memorandum-of-Understanding/Exhibit-1-BMP-Definitions-Schedules-and-Requirements/BMP-1-Utility-Operations-Programs>

U.S. Geological Survey's "Estimated Use of Water in the United States County-Level Data for 2015", September 28, 2017- <https://www.sciencebase.gov/catalog/item/59a96d18e4b07e1a023db323>

EPA's "Drinking Water Infrastructure Needs Survey and Assessment, Sixth Report to Congress", March 2018 - https://www.epa.gov/sites/production/files/2018-03/documents/sixth_drinking_water_infrastructure_needs_survey_and_assessment.pdf