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# A BILL FOR AN ACT

RELATING TO WATER AUDITS.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

1           SECTION 1. Article XI, section 7, of the Hawaii State  
2 Constitution obligates the State to protect, control, and  
3 regulate the use of Hawaii's water resources for the benefit of  
4 its people.

5           Fresh water is the lifeblood of society. The quantity and  
6 quality of fresh water directly impact the health, welfare,  
7 economy, and quality of life in Hawaii. Fresh water  
8 infrastructure has been constructed to withdraw water from  
9 available sources, to treat it to acceptable standards, and to  
10 distribute it to our various communities.

11           Based on the department of health's database, there are a  
12 little over fifty county-run public water systems statewide and  
13 another fifty large capacity public water systems and public  
14 water systems operating in designated ground water management  
15 areas. Many of these water distribution systems, however, may  
16 be operating with inefficiencies that result in the loss of  
17 water, increased energy costs, and lost revenue.



1 Water conservation is among the least expensive and most  
2 efficient ways to increase the available supply of fresh water.  
3 It requires improving the efficiency of water delivery and  
4 identifying losses to the system. A water audit helps a utility  
5 understand how much water is lost from a distribution system  
6 through the detailed analysis of data, which the utility can use  
7 to make informed decisions to reduce real or apparent losses.

8 There is a growing trend across the United States where  
9 states, including California, Colorado, Delaware, Georgia, New  
10 Mexico, Pennsylvania, Tennessee, Texas, Washington, and  
11 Wisconsin, and their water authorities have begun to mandate  
12 water audits by water utilities.

13 The purpose of this Act is to establish a program to  
14 implement standardized water audits of public water systems in  
15 accordance with the method adopted by the American Water Works  
16 Association's Water Audits and Loss Control Programs, Manual of  
17 Water Supply Practices - M36, as amended.

18 SECTION 2. The commission on water resource management  
19 shall establish a five-year program to provide technical  
20 assistance to public water systems to conduct standardized water  
21 audits of public water systems in accordance with the method



1 adopted by the American Water Works Association's Water Audits  
2 and Loss Control Programs, Manual of Water Supply Practices -  
3 M36, as amended.

4 In the first two years, the commission shall establish a  
5 program for the counties to conduct standardized water audits of  
6 public water systems operated by the counties. In the following  
7 two years, the commission shall extend the program to all  
8 remaining large capacity public water systems and public water  
9 systems in designated water management areas.

10 In establishing the program, the commission shall utilize  
11 the American Water Works Association's Free Water Audit  
12 Software, Version 5.0 or subsequent versions. The program  
13 elements shall include water audit training workshops, level 1  
14 validation of water audits and follow-up communication, and  
15 recommendations to improve water audit validity scores and to  
16 address system losses.

17 SECTION 3. The standardized water audits shall follow the  
18 key parameters for establishing a water audit outlined in the  
19 American Water Works Association's Water Audits and Loss Control  
20 Programs, Manual of Water Supply Practices - M36, as amended,  
21 including:



- 1           (1) Describing the distribution system boundaries to  
2           identify all water sources supplying water to the  
3           system, calculate the system input volume, and  
4           calculate the volume of water supplied into the  
5           distribution system;
- 6           (2) Setting time periods for the audit that are sufficient  
7           to allow analysis and evaluation of the system water  
8           supply;
- 9           (3) Establishing standardized units of measure so supply  
10          and consumption units are the same;
- 11          (4) Assembling records and data from a wide variety of  
12          operations in the water systems, including:
  - 13           (A) Water supplied, including volume from own  
14           sources, and water imported or exported;
  - 15           (B) Authorized water consumption, including billed  
16           metered, billed unmetered, and unbilled metered;
  - 17           (C) Water system data, including length of mains,  
18           number of service connections, average length of  
19           customer service lines, and average operating  
20           pressure; and



1 (D) Cost data, including total annual cost of  
2 operating the water system, customer retail unit  
3 cost, and variable production costs; and

4 (5) Identifying, quantifying, and assigning costs to  
5 apparent losses and real losses.

6 SECTION 4. On January 1, 2017, the commission shall  
7 implement the water audit program developed pursuant to sections  
8 2 and 3 of this Act, and shall include a process for level 1  
9 validation of water loss audit reports which follows the  
10 principles and terminology in the American Water Works  
11 Association's Water Audits and Loss Control Programs, Manual of  
12 Water Supply Practices - M36, as amended, including the Free  
13 Water Audit Software, version 5.0 or subsequent versions.

14 The commission shall provide the counties and other  
15 operators of public water systems subject to this Act the  
16 technical assistance and information necessary to help prepare  
17 and validate the water loss audit reports.

18 SECTION 5. Beginning in 2018, and for each subsequent year  
19 thereafter, the counties shall submit, on July 1 of each year, a  
20 completed and validated water loss audit report for each public  
21 water system operated by the counties for the previous calendar



1 year to the commission. Beginning on July 1, 2020, and for each  
2 subsequent year thereafter, all remaining large capacity public  
3 water systems and public water systems in water management areas  
4 shall submit, on July 1 of each year, a completed and validated  
5 water loss audit report on their water systems for the previous  
6 calendar year to the commission. Each water loss audit report  
7 submitted to the commission shall be accompanied by information  
8 identifying steps taken in the preceding year to increase the  
9 validity of data entered into the final audit, reduce the volume  
10 of apparent losses, and reduce the volume of real losses.

11 SECTION 6. As used in this Act:

12 "Commission" means the commission on water resource  
13 management.

14 "Designated water management area" means a geographic area  
15 that has been designated pursuant to section 174C-41, Hawaii  
16 Revised Statutes.

17 "Large capacity public water system" means a public water  
18 system that serves a population of one thousand or more.

19 "Level 1 validation" means a water audit that has been  
20 subject to a third-party desktop review of data that is  
21 immediately available, which may include supply reports,



1 consumption reports, and testing reports. "Level 1 validation"  
2 includes utility staff interviews with third-party validators  
3 focused on outlining organizational practices to ensure that  
4 data validity scores have been assigned correctly and  
5 consistently, and confirmed, corrected, or noted as needing  
6 further investigation.

7 "Public water system" means a system subject to Federal  
8 Safe Drinking Water Act regulations, which provides water for  
9 human consumption through pipes or other constructed  
10 conveyances. Such a system includes any collection, treatment,  
11 storage, and distribution facilities under the control of a  
12 utility and used primarily in connection with the system.

13 SECTION 7. There is appropriated out of the general  
14 revenues of the State of Hawaii the sum of \$ or so much  
15 thereof as may be necessary for fiscal year 2016-2017 to  
16 establish and implement the program to conduct standardized  
17 water audits of public water systems in accordance with this  
18 Act.

19 The sum appropriated shall be expended by the commission on  
20 water resource management.

21 SECTION 8. This Act shall take effect on July 1, 2050.



**Report Title:**

Water Audits; Public Water Systems; Large Capacity Water Systems; Designated Water Management Areas; Appropriation

**Description:**

Requires the commission on water resource management to establish a program to provide technical assistance to the counties and public water systems to implement standardized water audits of public water systems. Makes an appropriation. Eff. 7/1/2050. (SD2)

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