

A RESOLUTION to amend the Commission’s *Water Code* and *Comprehensive Plan* to implement an updated water audit approach to identify and control water loss in the Basin.

WHEREAS, an estimated 150 million gallons of treated and pressurized water is physically lost from public water supply distribution systems in the Delaware River Basin each day, and current methods to account for, track and reduce this loss are inadequate; and

WHEREAS, in order to minimize water loss in the Basin, by Resolutions Nos. 76-17 and 92-2 codified at Section 2.1.2 C. of the *Water Code*, the Commission established conservation requirements for water supply systems serving the public; and by Resolution No. 87-6 codified at Sections 2.1.6 A. and B. of the *Water Code*, the Commission required purveyors to develop and implement leak detection and repair programs and to measure and report levels of “unaccounted-for water” (UFW); and

WHEREAS, a water loss accountability structure known as a “Water Audit” has since been developed by the American Water Works Association (AWWA) and the International Water Association (IWA) and has gradually come to be regarded within the water industry as superior to existing methods for tracking UFW for the following reasons, among others;

- it is based upon precise definitions and rational accounting procedures that result in a clearer understanding of the causes of water loss;
- it facilitates more consistent tracking and reporting and thus helps utility managers and regulators target their efforts to improve water supply efficiency; and
- the above benefits will potentially lead to reduced water withdrawals; and

WHEREAS, objective 1.3.C. of the *Water Resources Plan for the Delaware River Basin* (“Basin Plan”) calls for ensuring maximum feasible efficiency of water use across all sectors; and

WHEREAS, between May of 2004 and early 2005, the Commission’s Water Management Advisory Committee (WMAC), whose members represent a range of public and private sector organizations, reviewed the AWWA/IWA Water Audit methodology and the current *Water Code* provisions and recommended that the methodology be adopted within the Basin; and

WHEREAS, with the express support of the Commission, DRBC staff participated in an effort led by the AWWA Water Loss Control Committee (WLCC) to develop new software for implementing the Water Audit approach, and with the assistance of the WMAC, engaged a half-dozen water purveyors within the Basin in a nation-wide pilot study that led to improvements in the software; and

WHEREAS, in March of 2006, the software was approved by the AWWA WLCC and was posted on the AWWA website, where it is available at no charge to all users; and

WHEREAS, the pilot study demonstrated that use of the Water Audit methodology and AWWA software can help water purveyors identify ways to improve water supply efficiency, reduce water withdrawals and enhance utility revenues, in part by helping them to reduce actual and apparent thefts of service, unbilled connections, meter discrepancies and data errors; and

WHEREAS, in addition the pilot study demonstrated that the methodology will allow regulators to make reliable comparisons of performance, to distinguish high-loss systems and to identify best practices for controlling water loss in an economical way; and

WHEREAS, in July of 2007 the Commission directed the Executive Director to proceed with notice and comment rulemaking on a set of proposed amendments to the *Water Code* and *Comprehensive Plan* for implementing the Water Audit methodology basin-wide; and

WHEREAS, because the approach is relatively new in a regulatory context, the proposed amendments provide for voluntary use of the approach by purveyors through calendar year 2011 and mandatory annual water audits conforming to the IWA/AWWA methodology, beginning in calendar year 2012; and

WHEREAS, after due notice in the *Federal Register*, the registers of each of the member states, and on the DRBC web site, the Commission conducted an informational meeting on the proposed amendments on September 10, 2008 and a public hearing on September 25, 2008, both in West Trenton, New Jersey, and accepted written comment on the proposed amendments through October 3, 2008; and

WHEREAS, the Commission received one letter and no oral testimony on its proposed amendments; and

WHEREAS, the Commission finds that the *Water Code* and *Comprehensive Plan* amendments in the form attached hereto will lead to markedly improved water loss accounting and reduced water losses in the Basin; now therefore,

BE IT RESOLVED by the Delaware River Basin Commission:

1. The amendments in the form attached hereto are approved, adopted and incorporated into the Commission's *Water Code* and *Comprehensive Plan*, effective upon filing with each of the signatory parties in accordance with Section 14.2 of the *Delaware River Basin Compact*.
2. The Commission's Comment and Response Document, containing detailed responses to written comments submitted on the proposed amendments, shall be made a part of the official rulemaking record for this action and shall be available for public inspection immediately.

3. The Commission shall work with staff of the relevant state agencies to determine the best way for DRBC and its members to receive and share data generated by Delaware Basin water purveyors as a result of this regulation.

/s/ John S. Watson, Jr.

John S. Watson, Jr., Chairman *pro tem*

/s/ Pamela M. Bush

Pamela M. Bush, Esquire, Commission Secretary

ADOPTED: March 11, 2009

IT IS PROPOSED TO AMEND THE COMPREHENSIVE PLAN AND ARTICLE 2 OF THE *WATER CODE* AS SET FORTH BELOW. ADDITIONS APPEAR IN **BOLD FACE TYPE**. DELETIONS APPEAR IN **[BOLD FACE TYPE WITHIN BRACKETS]**. CHANGES NOT INCLUDED IN THE PROPOSED RULEMAKING APPEAR IN **BOLD FACE TYPE WITH UNDERSCORE**, EXCEPT THAT RESTORED TEXT (EXISTING RULE TEXT ORIGINALLY PROPOSED TO BE DELETED) APPEARS IN NORMAL TYPE WITH UNDERSCORE. *ITALICS DENOTE EDITOR'S NOTES*.

2.1.2 New and Existing Users (Resolution Nos. 76-17 and 92-2).

C. Owners of water supply systems serving the public (purveyors) seeking approval under Section 3.8 of the Compact for a new or an expanded water withdrawal shall include as part of the application a water conservation plan. The plan shall describe the various programs adopted by the purveyor to achieve maximum feasible efficiency in the use of water.

1. The water conservation plan shall, at a minimum, describe the implementation of the following programs as required by the Commission:

a. Source metering (Resolution No. 86-12);

\* \* \*

**e. An ongoing water auditing program in accordance with section 2.1.8.**

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2.1.6 Leak detection and repair (Resolution No. 87-6 Revised).

A. Owners of water supply systems serving the public (purveyors) in the Delaware River Basin that distribute water supplies in excess of an average of 100,000 gallons per day (gpd) during any 30-day period shall develop and undertake a systematic program to monitor and control leakage within their water supply system. Such a program shall at a minimum include: periodic surveys to monitor leakage, enumerate **non-revenue water (or in instances where AWWA methodology as set forth in Section 2.1.8 below has not yet been adopted, enumerate unaccounted-for water)**, and determine the current status of system infrastructure; recommendations to monitor and control leakage; and a schedule for the implementation of such recommendations. Each purveyor's program shall be subject to review and approval by the designated agency in the state where the system is located.

**“Non-revenue water” is defined by AWWA as the sum of unbilled authorized consumption, apparent losses and real losses. “Non-revenue water percent” is defined as non-revenue water divided by the amount of water entering the distribution system times 100 percent.**

"Unaccounted-for water" is defined as the amount of water entering the distribution system minus the amount of water delivered through service meters. [difference between the "metered ratio" and 100 percent. The metered ratio is the amount of water delivered through service meters] “Unaccounted-for water percent” is defined as unaccounted-for water divided by the amount of water entering the distribution system times 100 percent.

The designated state agencies are: Delaware Department of Natural Resources and Environmental Control; New Jersey Department of Environmental Protection; New York Department of Health, and Pennsylvania Department of Environmental Protection.

- B. **Each purveyor shall strive to minimize system leakage to levels as guided by IWA/AWWA Water Audit Methodology (AWWA Water Loss Control Committee (WLCC) Water Audit Software) and corresponding AWWA guidance.**

[Each purveyor that distributes in excess of one million gallons per day (mgd) shall submit its initial program to monitor and control leakage to the appropriate designated agency, within two years and each purveyor that distributes between 100,000 gpd and 1 mgd shall submit its initial program to monitor and control leakage to the appropriate designated agency within five years of the effective date of this regulation or at such earlier date as shall be fixed by the designated state agency. Each] **After a purveyor has submitted to the appropriate designated agency its initial program to monitor and control leakage, the** purveyor shall prepare and submit a revised and updated program [to monitor and control leakage] every three years thereafter or at such **greater frequency** [earlier date] as **[may]**[shall] be required by the designated state agency. The designated state agency may require more frequent program submission from purveyors with unaccounted-for **or non-revenue** water that is in excess of 15 percent.

- C. Any project approvals hereafter granted pursuant to Section 3.8 of the DRBC Compact or any renewal of a project approval shall be subject to the provisions of this regulation.

**[D. To avoid duplication of effort and to insure proper enforcement of this regulation, the Executive Director shall enter into administrative agreements with each of the designated agencies . . . ]**

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**2.1.8 Water Auditing (Resolution No. 2008 -\_\_ ).**

- A. **Policy Statement.** It shall be the policy of the Commission to establish [encourage owners of water supply systems serving the public to implement] a standardized water audit methodology for owners of water supply systems serving the public to ensure accountability in the management of water resources.
- B. **Voluntary Water Audit.** [For the period beginning EFFECTIVE DATE and ending] Through December 31, 2011, owners of water supply systems serving the public[,] with sources or service areas located in the Delaware River Basin[,] are encouraged to implement an annual calendar year water audit program conforming to the IWA/AWWA Water Audit Methodology (AWWA Water Loss Control Committee (WLCC) Water Audit Software) and corresponding AWWA guidance.
- C. **Mandatory Water Audit.** Effective January 1, 2012, the owners of each water supply system serving the public[,] with sources or service areas located in the Delaware River Basin[,] shall implement an annual calendar year water audit program conforming to IWA/AWWA Water Audit Methodology (AWWA Water Loss Control Committee (WLCC) Water Audit Software) and corresponding AWWA guidance.
- D. **Mandatory Reporting.** Effective January 1, 2013, “Non-revenue water” reported under section 2.50.3. (Reporting Requirements), subsection B.1.b.ii. of this Water Code shall be computed in accordance with IWA/AWWA Water Audit Methodology (AWWA Water Loss Control Committee (WLCC) Water Audit Software) and corresponding AWWA guidance.

**2.50.3 Reporting Requirements (Resolutions Nos. 2001-8 and 2008-\_\_ )**

*Existing subsection 2.50.3 A. (Year 2000 Reporting Requirements) in its entirety is deleted.*

**A[B]. Annual Reporting Requirements [for Subsequent Years]**

1. Water Supply Systems Serving the Public. **[Commencing with reporting year 2001, t] The owner(s) of each water supply system serving the public and subject to requirements under subsection 2.50.1, subsection 2.50.2, and the Ground water Protected Area for Southeastern Pennsylvania[,] shall report the following data on an annual basis to the designated agency. [Changes to any other information required under Section A above shall also be reported. All information required under Section A above shall be completed for new withdrawals for the first year of operation.]**

- a. Source Data
  - \* \* \*
- b. Service Area Data. The following data shall be reported separately for each county served.
  - i. Service Area Name(s)
  - ii. Total Annual Water Use by Category (MG): **[C]**All usage shall be reported according to the following categories: **[C]**
    - Residential metered (including apartment complexes)
    - Commercial metered
    - Institutional metered
    - Industrial metered
    - Bulk Sales
    - Other metered (Specify)
    - **Non-revenue water, including unbilled authorized consumption, apparent losses, and real losses computed in accordance with Section 2.1.8 D. of this Water Code**
    - Unaccounted for water (defined as the amount of water entering the distribution system minus the amount of water delivered through service meters)\*\*
    - Total

2. Other Withdrawals. **[Commencing with reporting year 2001, e]** **Each** person, firm, corporation or other entity, except water supply systems serving the public**[,]** subject to requirements under subsection 2.50.2 and the Ground Water Protected Area Regulations for Southeastern Pennsylvania**[,]** shall report the following data on an annual basis to the designated agency. . . . .

**[C]**. To avoid duplication of effort and to insure proper enforcement of this regulation, the Executive Director is hereby authorized to enter into administrative agreements with the following designated agencies: . . . .

\* \* \*

**[This resolution became effective April 19, 2001. Note, however, that Section 2.50.3 A. requires reporting for the year 2000.]**