Memo

Texas AWWA
American Water Works Association

To: Mindy Conyers

From: Mike Howe, Executive Director

CC: John Sutton

Date: July 11, 2016

Re: Proposed Water Conservation Practitioner Certification Program

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Mindy

The Texas Section AWWA is proposing the development of a Water Conservation Practitioner Certification Program designed for utility staff and others interested in the development and improvement of their skills in the implementation of consistent and measurable water conservation programs. Attached are brief outlines of three levels of Certification we propose. We ask that this proposal be considered by the Water Conservation Advisory Council (WCAC) and included in their recommendations to the Legislature.

As you are aware, the lack of consistent water conservation practices and procedures is a limiting factor in developing meaningful water conservation programs throughout the State. By requiring each utility above 3,300 population to have at least one certified conservation practitioner on staff, or through the use of a certified conservation program contractor at one of the three proposed levels of certification, the implementation of consistent conservation programs that have consistent and measurable outcomes can be achieved.

While the issues necessitating the need for water conservation and water use efficiency may differ from utility to utility, many conservation methods and technologies are universally applicable. Water planners need to be able to quantify the degree to which planned water savings are being achieved, the potential for future savings, and which conservation measures are the most efficient and effective for attaining these savings. Water planners at the State level and the Legislature can also rely on this consistent information to make informed decisions. To achieve a reliable level of certainty associated with water conservation savings, conservation programs must include development of long-term conservation goals and the continual monitoring and evaluation to ensure that these goals are being met. We believe the most effective method for doing this is to ensure that everyone involved in water planning are making decisions based on information collected in an informed, consistent and transparent manner.

Standardized public water supply conservation definitions and standardized performance measures for assessing and benchmarking the effectiveness of water conservation programs and practices implemented by certified water conservation practitioners can become a powerful tool for a coordinated and consistent approach to water supply planning and reporting, as wells as a tool to support sustainable economic development throughout the State.

We believe that upon passing of legislation implementing this program, and using existing conservation training as well as newly developed training, Level 1 certification could be achieved by many practitioners within 12-18 months after the legislation goes into effect. Similarly, achievement of the Level 2 and Level 3 certifications could follow over similar time frames after the first 12-18 months. While the Level 3 Certification may be required for the largest of utilities, medium and small utilities may only have to be required to meet the Level 2 or Level 1 requirements to be in compliance. Certification testing would be developed and implemented by a third party experienced in education testing and certification programs and the Texas Section AWWA would act as not only the training provider but as the clearinghouse to maintain records of training and certification. As the largest organization representing water suppliers we believe we can efficiently implement this proposal once acted upon by the Legislature.

I hope this memo and the attachments provide sufficient information for the WCAC to act. However, we are available to answer any questions should they arise.

Sincerely,

Mike Howe, Executive Director
Texas AWWA

TEXAS AWWA WATER CONSERVATION TRAINING AND CERTIFICATION PROGRAM MINIMUM REQUIREMENTS FOR LEVEL 1 CERTIFICATION

The Minimum Level Requirements presented below are presented as the general knowledge requirements expected for **Texas AWWA Water Conservation Certification Level 1** and focuses on water end uses and conservation measures and on regional water issues and resources.

Understanding and Working Knowledge of the below:

Units of measurement and formulas.

Basic units (English) of measurement used in the water industry and formulas for landscape water use and budgets. Examples are Cubic Foot and Acre Foot, Gallons Per Capita Per Day (GCPD), Arithmetic such as Multiplication Division and percentages, volume, pressure (psi).

U.S. Water Resource Facts; Federal, and Texas Regulations; Regional water issues; Professional associations.

Different types of water providers in U.S. and primary source of water for average U.S. water providers. Knowledge of water supply from groundwater and surface water in Texas. Agricultural and urban demand in Texas. Sources of water in Texas; Role of Texas Water Development Board and TCEQ. Agricultural and urban Best Management Practices; Water Management Plans;

Utility water demand characteristics and water conservation measures.

Important utility water use data and customer demand characteristics; long-term versus short-term conservation programs; utility conservation measures; type and accuracy of water meters; quantity-based rate structures; unaccounted-for water; water system audits and leak detection; system water pressure: and recycled water.

Residential end use and indoor water conservation measures.

Residential indoor end uses for fixtures and appliances. Use rates of conventional and water saving fixtures/appliances. Texas and National Plumbing Standards. U.S. Energy policy Act of 1992; residential indoor water conservation measures; toilet operation and hardware; source of toilet leaks; toilet dye test; toilet flush volume measurement; methods to determine shower and faucet flow rates; and meter leak detection test, flow rate standard for interior faucets, indoor water loss, audits.

Landscape measures / Graywater

Xeriscape principles and problems. Factors and calculations determining landscape water use Factors such as irrigation efficiency; distribution uniformity; landscape water budgets; soil, water and plant relationships (evaportranspiration), grasses, sprinklers; hardware comprising an efficient irrigation system; controller water saving features; and other outdoor water conservation measures. Graywater sources, water quality issues, system design, costs and water savings. Regulations.

Commercial, industrial, and institutional uses and measures.

CII business classification codes; CII heat transfer processes; CII treatment/water purification; CII BMP; CII conservation opportunities; and utility offered CII water conservation programs (Standard Industrial Classification codes (SIC), cooling towers

Reclaimed water

Uses, best management practices, regulations.

TEXAS SECTION AWWA WATER USE EFFICIENCY TRAINING AND CERTIFICATION PROGRAM

MINIMUM REQUIREMENTS FOR LEVEL 2 CERTIFICATION

The criteria presented below are the general knowledge requirements expected for Texas AWWA Water Conservation Practitioner Certification Level 2 and focuses on water end uses and conservation measures and on regional water issues and resources.

Understanding and Working Knowledge of the below:

1.Implementing Water Conservation Programs

- A Program Design
  - 1 Assessment of service area
  - 2 End water use by customer classification
  - 3 Cost effectiveness
- B Program Target(s)
  - 1 Identification of targets
  - 2 BMP targets
  - 3 Analysis of historical program activity
- C Implementation duration/schedule
- D Funding
  - 1 Sources
  - 2 Partnerships
- E Outreach

2. Monitoring Water Conservation Program Effectiveness

- A Water conservation program saturation levels
- B Before and after water use patterns for participating customers
  - 1 Billing system data analysis
  - 2 Weather patterns/normalization
- C Short and long term monitoring of impacts
  - 1 Customer demands
  - 2 System water demands and peaking
- D Financial Budget Tracking – Issues and Basics
- E Program Measurement Options
  - 1 Water Savings
  - 2 Interventions (e.g., number of devices, fixtures, contacts)
  - 3 Look at results of specific programs and make recommendations
- F. Methods for conducting water conservation measure cost-effectiveness calculations
- G Prioritize options based on decision-making criteria

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Understanding and Working Knowledge of the below:

3.Water Resources Planning

- A Water Resource Planning requirements
- B Conservation as a source of water supply
- C Drought/Shortage Preparedness
  - 1 Water shortage triggers
  - 2 Water shortage conditions
  - 3 Water shortage response measures and monitoring
  - 4 Demand reduction levels and monitoring
  - 5 Community outreach
  - 6 Public health and safety matters
  - 7 Water rates/reserve fund issues
- D Regulatory and Environmental Issues
- E Non-Potable Water – Issues and Communications Best Practices
  - 1 Recycled
  - 2 Graywater
  - 3 Rain capture

4.Water Rates

- A General understanding of rate making principles (e.g., AWWA, and other BMPs)
- B Conservation-oriented water rate structures
  - 1 Block rates
  - 2 Budget based
  - 3 Drought rates
- C General changes on water use behavior assessment from specific conservation oriented rate policies
- D Rate making and rate adoption processes

5. Landscape and Outdoor Measures

- A Soil, water and plant relationships (evaportranspiration)
- B Landscape Audit Practices
- C Budget Formulas
- D Distribution Uniformity Calculations
- E Technology based measures
- F Agricultural water use

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Understanding and Working Knowledge of the below:

6.Commercial, industrial, and institutional uses and measures

- A Conventional, water saving and high efficiency fixture and appliance water usage
- B Leak detection, field tests and measurements
- C Indoor water conservation measures
  - 1 Toilets: operation and hardware, sources of leaks, flush volume measurement, dye tests
  - 2 Shower and faucet standard flow rates, flow rate measurement
  - 3 Laundry water usage
  - 4 Dishwasher water usage
  - 5 Treatment/water purification
  - 6 Cooling towers
  - 7 Process water
- D Outdoor water conservation measures
  - 1 Pool-Spa and water features
  - 2 Outdoor cleaning (e.g., surfaces, vehicles)
  - 3 Water-efficient irrigation and landscape
- E Water use survey techniques, recommendations and incentives

TEXAS SECTION AWWA WATER CONSERVATION TRAINING AND CERTIFICATION PROGRAM MINIMUM REQUIREMENTS FOR LEVEL III

The Minimum Requirements presented below are expected for level Texas AWWA Water Conservation Level III Certification and focuses on tools and methods for program monitoring and evaluation.

Understanding and Working Knowledge of the below:

Program Design

Knowledge of and interpretation of Conservation Program Designs, building and implementation. Understanding of the criteria needed to make the program fit your area.

- How much potential savings is envisioned
- Where the savings are being realized

Program Monitoring and Evaluation

Knowledge of methods and issues involved in evaluating conservation measures, databases, data types, sampling techniques, methods to determine water savings, and statistical significance.

- identifying models
- importance of pre-planning
- mid-course corrections
- involvement of stakeholders

Program Cost-Effectiveness Analysis/Issues

Analyze benefits and costs of alternatives.

- Knowledge of the process involved in determining program cost-effectiveness
- issues and methods to determine avoided cost
- present worth cost-effectiveness analysis
- cost-benefit ratio
- issues of environmental benefits and costs
- issues of savings decay and natural replacement
- administrative costs
- water savings
- life of measures
- assessing reliability of projected costs and benefits
- involvement of stakeholders
- importance of external "peer" review

Rate Design Concepts

Knowledge of pricing issues and considerations, cost allocation, and alternative rate structures.

- identifying models
- gaining political support
- involvement of stakeholders
- mid-course corrections

A BROADER PLANNING PERSPECTIVE

Integrated Resource Plan (IRP)

Knowledge of various planning approaches such as traditional supply-side planning, least-cost planning and integrated resource planning. Understanding of IRP objectives and evaluation criteria, involvement of stakeholders, assessing supply and conservation options, and formulating and evaluating resource strategies.

- involving all departments
- including efficiency as a supply option
- analyzing supply reliability
- comparing "total cost" of each new supply option
- involvement of stakeholders