

**SULTAN CITY COUNCIL  
AGENDA ITEM COVER SHEET**

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**DATE:** December 13, 2007

**NUMBER:** D - 1

**SUBJECT:** Water Use Efficiency Rule (WUE)

**CONTACT PERSON:** Public Works Director Dunn  
Water System Manager Mike Williams

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**ISSUE:**

1. Adopting water use efficiency goals by January 22, 2008 consistent with the Water Use Efficiency Rule (Attachment A)
2. Approval of Pace Engineering Contract, C-10 of December 13, 2007 Council meeting:
  - a. To assist the City in setting the Water Use Efficiency Goals,
  - b. conduct a Public Hearing, and
  - c. assist City Staff with the first report to Department of Health.
3. Set Public Hearing for the Council meeting on January 10, 2007

**RECOMMENDED ACTION:**

1. Adopt the following goals for the Sultan Water System by January 22, 2008 consistent with "The Water Use Efficiency Rule" from the 2005 Department of Health approved Water System Plan:
  - a. Complete the installation of Electronic Water Meters to reduce average day demand per capita by capturing all usage.
  - b. Maintain and calibrate the source production meters.
  - c. Distribute conservation brochures provided by the Department of Health and Ecology to customers.
  - d. Continue annual water main replacement of older distribution piping.
  - e. Develop a leak detection program.
  - f. Continue to explore future use of reclaimed wastewater as the irrigation source for parks and landscaping.
2. Approval of the contract with Pace Engineering to review staff recommended goals and submission of the first report to Department of Health (DOH). Assist the City Staff to meet two deadlines in 2008, January 22 and July 1 reporting requirements.

## BACKGROUND:

Increasing demand on our state's water resources:

1. Growing communities,
2. agriculture,
3. industry, and
4. the importance of conserving water for fish.

To help meet the growing needs, the Washington State Legislature passed the Municipal Water Supply – Efficiency Water Requirements Act of 2003, better known as the Municipal Water Law. The law gives municipal water suppliers certain benefits and obligations. One obligation is to comply with the Water Use Efficiency Rule.

The water use efficiency rule affects all municipal water supplies, which includes all Group A community water systems with 15 or more residential connections and some non-community water systems that use water in a residential manner (RCW 90.03.015).

Rule Requirement	Deadline for water systems w/1,000 or more connections	Sultan Goals Status
Install production meter(s)	January 22, 2007	Completed 1979
Collect consumption and production data	Now	Currently Underway
Include WUE program in planning documents	January 22, 2008	2005 Water System Plan
Set your own WUE goals	January 22, 2008	Currently Underway
Submit service meter installation schedule	July 1, 2008	Start 1989 Complete 1992
Submit first annual performance report	July 1, 2008	June 30, 2008
Install service meters	January 22, 2017	Completed
Meet 10% leakage standard (based on 3-year average)	Three years after installing all service meters	2005 – 22% 2006 – 10% Oct 2007 – 4.8%

## SUMMARY:

At the Governmental Service and Public Safety Committee, the WUE was a topic of discussion. Part of the discussion was how much water is lost through a leak. Attachment D explains the water streams through holes from 1/32 to 1/4 inch and amount of water loss through that hole.

The proposed goals are a subset of the water conservation goals (Attachment B) adopted in the 2005 Water System Plan. The City of Sultan conducted the public hearing process during the adoption process on the 2005 Water System Plan approved by the Washington Department of Health on August 23, 2006. Chapter 4 of the 2005 Water System Plan addresses the issue of water conservation, encouraging water use efficiency by the consumers, and identifying several water use efficiency goals.

The WUE Rule impact on the Sultan Water System:

1. A more active role with water conservation and customer efficiency reduces the demand on our system:
  - a. Benefit from lower operating costs
  - b. Lower energy bills
  - c. Lengthen the life of the Water Treatment Plant
2. It will enhance public health by improving water system efficiency and reliability.

All municipal bodies governing water suppliers must set their own goals for efficiently using water through a public process. This process assures that water customers and the public have an opportunity to participate and provide comments on the goals set by the City Council to use water efficiently. City Staff recommends contracting with PACE Engineering to assist the City in meeting the state requirement including the public involvement process.

**FISCAL IMPACT:**

1. Contract with PACE Engineering (Attachment C), not to exceed Six Thousand Eighty Dollars and no cents (\$6,080), this amount is included in the 2008 budget:
  - a) Help the City become compliant with WAC 246-290-800 as outlined in Department of Health's Water Use Efficiency Guidebook (DOH pub. #331-175).
  - b) Help with the
    - a. public process,
    - b. documentation, and
    - c. reporting to Department of Health.

The work City Staff has completed will reduce the cost of the contract with PACE, we have completed portions of each tasks outlined below:

Task 1:

The information gathered by staff will minimize work needed to complete the WUE goals. The information gathered for the WUE will help in the water rate study proposed in the 2008 Budget.

Task 2:

PACE will confirm the City's stated goals from the Water System Plan as staff has identified, without additional research.

Task 3:

Help to measure the goals the City set and the ability to accomplish the goals based on:

- a. Staff
- b. Cost
- c. Operations and Maintenance
- d. Grants and Loan available

Task 4:

Attend one Public Hearing in the process of our Goals on January 10, 2008.

**ALTERNATIVES:**

- A. Approve Consent Item # 10 the Contract with PACE Engineering to assist the City to set the goals, prepare the documentation, reporting to Department of Health and the public process keeping the City compliant with WAC 246-290-800 and DOH pub #331-175.
- B. Set the Public Hearing for January 10, 2008 to set WUE Goals for Sultan Water System
- C. Do nothing, will make the City non-compliant with DOH. This would create issues between the City and DOH that would affect funding, compliance with state law.

**RECOMMENDED ACTION:**

Discuss the impact of the Water Use Efficiency Rule with a recommendation to continue planning and setting goals for our Water System. Approve the contract with PACE (C-10-December13 consent agenda). The cost related to the WUE Goals and Rules are included in the 2008 Budget. Set the Public Hearing for January 10, 2008 at 6:00 pm.

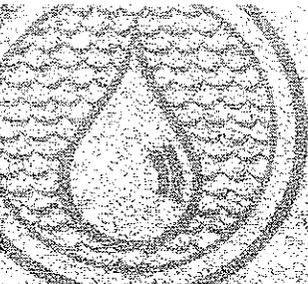
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**COUNCIL ACTION:**

**DATE:**

**ATTACHMENTS:**

- A Fact Sheet: Summary of the Water Use Efficiency Rule
- B Water System Plan Goals, Chapter 4
- C Water System Manager Williams response to goals
- D Water Usage – size of stream measurement



## Fact Sheet

### Water Use Efficiency Rule

# Summary of the Water Use Efficiency Rule

July 2007

DOH PUB. #331-302  
(Update)

## Background

Growing communities, agriculture, industry, and the importance of conserving water for fish have placed an increasing demand on our state's water resources. To help meet these growing needs, the Washington State Legislature passed the Municipal Water Supply - Efficiency Requirements Act of 2003, better known as the Municipal Water Law. The law gives municipal water suppliers certain benefits and obligations. One of their obligations is to comply with the water use efficiency rule.

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Water Use Efficiency  
Guidebook**

The water use efficiency rule affects all municipal water suppliers, which includes all Group A community water systems with 15 or more residential connections and some non-community water systems that use water in a residential manner (RCW 90.03.015).

## Water Use Efficiency Rule – Key Elements

- Water Use Efficiency Planning Requirements – As part of a water system plan or small water system management program, municipal water suppliers must collect data, forecast demand, evaluate leakage, evaluate rate structures that encourage water use efficiency, and evaluate or implement water use efficiency measures. For more information about this part of the rule, please see the Fact Sheet, *Planning Requirements* (DOH Pub. #331-303).
- Distribution Leakage Standard – Municipal water suppliers must meet a state distribution system leakage standard in order to minimize water loss in the distribution system. For more information about this part of the rule, please see the Fact Sheet, *Distribution Leakage Standard* (DOH Pub. #331-304).
- Water Use Efficiency Goal Setting and Performance Reporting – Municipal water suppliers must set water use efficiency goals through a public process and report annually on their performance to customers, Department of Health, and also make the information available to the public. For more information about this part of the rule, please see the Fact Sheet, *Goal Setting and Performance Reporting* (DOH Pub. #331-305).



## Requirements and Deadlines

The rule requirements and compliance deadlines are shown in the table below. The requirements are listed in order, by the date they are due.

Rule Requirement	Deadline for water systems under 1,000 connections	Deadline for water systems w/ 1,000 or more connections
Install production meter(s)	January 22, 2007	January 22, 2007
Collect consumption & production data	January 1, 2008	Now
Include WUE program in planning documents	January 22, 2008	January 22, 2008
Set your own WUE goals	January 22, 2009	January 22, 2008
Submit service meter installation schedule	July 1, 2009	July 1, 2008
Submit first annual performance report	July 1, 2009	July 1, 2008
Install service meters	January 22, 2017	January 22, 2017
Meet 10% leakage standard (based on 3-year average)	Three years after installing all service meters	Three years after installing all service meters

### For More Information

If you have any questions about the water use efficiency rule, please contact:

**Michael Dexel**  
Water Resources Policy Lead  
Office of Drinking Water  
Department of Health  
PO Box 47822  
Olympia, Washington 98504-7822  
Phone: 360-236-3154  
Fax: 360-236-2252  
E-mail: michael.dexel@doh.wa.gov

Additional information can be found on the Web at:  
[http://www.doh.wa.gov/ehp/dw/municipal\\_water/water\\_use\\_efficiency\\_rule.htm](http://www.doh.wa.gov/ehp/dw/municipal_water/water_use_efficiency_rule.htm)



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## Questions & Answers

# Water Use Efficiency Rule

July 2007

DOH PUB. #331-361  
(Update)

### Why was the Water Use Efficiency Rule passed?

In 2003 the State Legislature passed the Municipal Water Law, which directed the Department of Health (DOH) to adopt a rule that establishes water use efficiency (WUE) requirements for all municipal water suppliers. The water use efficiency rule will help conserve water for the environment and future generations. It will also enhance public health by improving water system efficiency and reliability.

### Is my water system affected by this rule?

All municipal water suppliers are affected by the rule requirements; this includes most Group A community water systems with 15 or more residential connections and some non-community water systems that serve water in a residential manner. The Department of Ecology can help you figure out whether these rules apply to your water system. See Ecology contacts below or view Ecology's policy on municipal water suppliers at [www.ecy.wa.gov/programs/wr/rules/images/pdf/pol2030.pdf](http://www.ecy.wa.gov/programs/wr/rules/images/pdf/pol2030.pdf)

Central Regional Office (Yakima):	Scott Turner	(509) 457-7106
Eastern Regional Office (Spokane):	Dan Tolleson	(509) 329-3526
Northwest Regional Office (Bellevue):	Paul Fabiniak	(425) 649-4342
Southwest Regional Office (Lacey):	Phil Crane	(360) 407-0238

### What do we need to do, and by when?

The rule requirements and compliance deadlines are shown in the table below. The requirements are listed in order, by the date they are due.

Rule Requirement	Deadline for water systems under 1,000 connections	Deadline for water systems w/ 1,000 or more connections
Install production meter(s)	January 22, 2007	January 22, 2007
Collect consumption & production data	January 1, 2008	Now
Include WUE program in planning documents	January 22, 2008	January 22, 2008
Set your own WUE goals	January 22, 2009	January 22, 2008
Submit service meter installation schedule	July 1, 2009	July 1, 2008
Submit first annual performance report	July 1, 2009	July 1, 2008
Install service meters	January 22, 2017	January 22, 2017
Meet 10% leakage standard (based on 3-year average)	Three years after installing all service meters	Three years after installing all service meters



## **What are some examples of water use efficiency measures?**

There are hundreds of water use efficiency measures from which a water system may choose, including: landscape efficiency ordinance, low-flow showerheads, rebates to customers for installing water efficient appliances, using weather-based irrigation systems, and other measures appropriate for your system. Additional guidance on water use efficiency measures is located in the *Getting Started: Water Use Efficiency Guidebook*, DOH Pub. #331-375.

## **How do I set my water system's goals?**

All municipal water suppliers must set their own goals for efficiently using water through a public process. This process assures that water customers and the general public have an opportunity to participate and provide comments on the goals set by the water system to use water efficiently.

## **What costs are involved in meeting the rule requirements?**

The range of costs will vary, depending on system size and other factors such as installing service meters on existing connections, costs involved in water system planning, and costs of implementing a Water Loss Control Action Plan. Detailed cost analysis is available in the document, "Final Significant Analysis and Small Business Economic Impact Statement," which is available on the Office of Drinking Water Web site listed below.

## **How will this affect my customers' rates?**

Although the new rule requires municipal water suppliers to pay more attention to conservation and rate structures, it is the responsibility of each water system to determine which conservation measures best apply to their system and whether rates need to change.

## **Is there any funding assistance for my water system?**

Although we have no current source of funding for water use efficiency activities, DOH is working to identify funding opportunities to assist municipal water suppliers in complying with the rule.

## **When will guidance documents be available, and what topics will they cover?**

*Getting Started: Water Use Efficiency Guidebook*, DOH Pub. #331-375, is now available online. The guidebook explains how the rule affects water systems, and how it will change the way they do business by requiring them to involve the public in the decision making process. It includes an appendix full of examples, worksheets, and an annual reporting form to help systems comply. If you would like to suggest a topic for additional guidance, contact Mike Dexel at (360) 236-3154.

## **When will water systems be trained on the new requirements?**

DOH will be working with many of our partners to help water systems understand the rule requirements. Training is one of our top priorities. As training opportunities become available, we will post them on the Office of Drinking Water Web site (below) and include them in our quarterly Water Tap newsletter.

## **Where can I find more information to help me comply with this rule?**

You can find additional information on these Web sites:

Office of Drinking Water: [http://www.doh.wa.gov/ehp/dw/municipal\\_water/water\\_use\\_efficiency\\_rule.htm](http://www.doh.wa.gov/ehp/dw/municipal_water/water_use_efficiency_rule.htm)

American Water Works Association: <http://awwa.org/waterwiser/>

Partnership for Water Conservation: <http://www.partners4water.org/>

Evergreen Rural Water of Washington: <http://www.erwow.org/>

U.S. Environmental Protection Agency: <http://www.epa.gov/watersense/index.htm>



## Fact Sheet

### *Water Use Efficiency Rule*

# Planning Requirements

July 2007

DOH PUB. #331-303  
(Update)

## Background

One of the three elements of the water use efficiency rule is water use efficiency planning. Water use efficiency has been an important component of water system planning for over 10 years and assists water systems in developing drinking water supply strategies. The Washington State Legislature recognized this in the Municipal Water Law and required the Department of Health (DOH) to use its existing guidance as a starting point. DOH now incorporates the new water use efficiency planning requirements into its planning program.

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**Getting Started  
Water Use Efficiency  
Guidebook**

The new water use efficiency planning requirements focus on:

- Data collection and reporting.
- Demand forecasting.
- Evaluation of leakage, rates, and water use efficiency measures.

## Data Collection and Reporting

Understanding a municipal water supplier's impact on the water supply is important for making informed water resource decisions. The new rule requires municipal water suppliers to describe their water source and supply characteristics (such as instream flows, salt water intrusion, and aquifer depletion).

Municipal water suppliers need data to develop a successful water use efficiency program. By understanding how much water is used, where it goes, and who is served, a municipal water supplier can make educated choices about how best to conserve water. Under the new rule, municipal water suppliers need to collect production and consumption data on a regular basis and report that information in their planning document and annual performance report (see Fact Sheet, *Goal-Setting and Performance Reporting*, DOH Pub. #331-305).

## Demand Forecasting

Demand forecasting is important because it identifies how much water will be needed in the future. Municipal water suppliers must forecast their projected water demand as part of their planning documents. In preparing the forecast, municipal water suppliers must determine future use with and without savings expected from their water use efficiency program.



## **Evaluation and Selection of Water Use Efficiency Measures**

The new rule gives municipal water suppliers flexibility in selecting or implementing measures that achieve their water use efficiency goals.

Municipal water suppliers need to evaluate or implement a specified number of water use efficiency measures based on water system size. There are six different size categories; the larger the water system, the more measures they must evaluate. An evaluation is not required for any measure the municipal water supplier will implement. Municipal water suppliers with fewer than 1,000 connections must describe how they evaluated their water use efficiency measures. Municipal water suppliers with 1,000 or more connections must complete their evaluation following criteria described in the rule.

## **Additional Evaluation Requirements**

All municipal water suppliers must evaluate the feasibility of implementing rates that encourage water use efficiency and educate customers about water use efficiency practices. Water systems with 1,000 or more connections must also evaluate water reclamation opportunities.

## **For More Information**

If you have any questions about the water use efficiency rule, please contact:

**Michael Dexel**  
Water Resources Policy Lead  
Office of Drinking Water  
Department of Health  
PO Box 47822  
Olympia, Washington 98504-7822  
Phone: 360-236-3154  
Fax: 360-236-2252  
E-mail: michael.dexel@doh.wa.gov

Additional information can be found on the Web at:

[http://www.doh.wa.gov/ehp/dw/municipal\\_water/water\\_use\\_efficiency\\_rule.htm](http://www.doh.wa.gov/ehp/dw/municipal_water/water_use_efficiency_rule.htm)

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## Fact Sheet

### Water Use Efficiency Rule

# Distribution Leakage Standard

July 2007

DOH PUB. #331-304  
(Update)

## Background

One of the three elements of the water use efficiency rule is a statewide distribution system leakage standard. Since the late 1980s, the Department of Health (DOH) has encouraged water systems to reduce unaccounted-for water to 20 percent or less. Municipal water suppliers must now meet a state standard that minimizes water loss from their distribution system.

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Guidebook

Minimizing leakage in water systems has many benefits for water systems and their customers. These benefits include:

- Improved operational efficiency.
- Lowered water system operational costs.
- Reduced potential for contamination.
- Extended life of facilities.
- Reduced potential property damage and water system liability.
- Reduced water outage events.
- Improved public relations.

## Distribution System Leakage Standard

The rule requires all municipal water suppliers to maintain their distribution system leakage at or below 10 percent of their production. Municipal water suppliers need to report their leakage as a percentage and as leakage volume. DOH will allow alternative methodologies for determining leakage if specific criteria are followed.

Having a fully metered water system is the best way for a municipal water supplier to accurately determine its leakage. Under existing law, municipal water suppliers are required to have source meters and service meters must be installed within 10 years of the effective date of the rule (See Fact Sheet, *Metering Requirements*, DOH Pub. #331-306).

The distribution system leakage standard applies to the distribution grid of the water system and includes reservoirs located within the distribution system. Municipal water suppliers may exclude transmission lines and raw water reservoirs from the leakage calculation, although this



type of water loss must be described in the planning document. All water that is not metered and tracked will be considered leakage. Municipal water suppliers must account for uses such as fire protection, flushing, construction, and other non-revenue water by metering or by estimating, using credible means.

### **Leakage Reporting and Compliance**

The rule requires municipal water suppliers to report leakage information in planning documents and annually in performance reports. Compliance with the leakage standard is based on a rolling three-year average. Municipal water suppliers not meeting the distribution system leakage standard must develop and implement a Water Loss Control Action Plan, which identifies the steps and timelines for reducing leakage. In the Water Loss Control Action Plan, municipal water suppliers may address technical or economic concerns which affect their ability to comply with the standard. If municipal water suppliers are not fully metered, they need to report annually on their progress toward installing meters on all service connections.

### **For More Information**

If you have any questions about the water use efficiency rule, please contact:

**Michael Dexel**  
Water Resources Policy Lead  
Office of Drinking Water  
Department of Health  
PO Box 47822  
Olympia, Washington 98504-7822  
Phone: 360-236-3154  
Fax: 360-236-2252  
E-mail: michael.dexel@doh.wa.gov

Additional information can be found on the Web at:

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## Fact Sheet

### *Water Use Efficiency Rule*

# Goal Setting and Performance Reporting Requirements

July 2007  
DOH PUB. #331-305  
(Update)

## Background

One of the three elements of the water use efficiency rule is water use efficiency goal setting and performance reporting. Municipal water suppliers must set water use efficiency goals through a public process and report annually on their performance to customers and the Department of Health (DOH), and also make this information available to the public.

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## Water Use Efficiency Goal Setting

All municipal water suppliers with 1,000 or more connections must set their initial water use efficiency goals by January 22, 2008, or by January 22, 2009 for water systems with fewer than 1,000 connections. These water use efficiency goals must be set through a public process and re-evaluated at least every six years. Municipal water suppliers may use their existing public processes as long as they meet the requirements of the rule.

All municipal water suppliers need to set water use efficiency goals and record these goals in planning documents and performance reports. When setting water use efficiency goals, the municipal water supplier must:

- Include a measurable outcome in terms of water production or consumption (for example: reduce peak production volumes by five percent, maintain current single family residential use, and reduce leakage from 30 percent to 10 percent).
- Address water supply and forecasted demand characteristics.
- Include an implementation schedule for meeting the goals.

## Performance Report

All municipal water suppliers must report annually (by July 1) on their water use efficiency performance to customers and DOH, and also make this information available to the public. Municipal water suppliers may fulfill the reporting requirement to their customers and the public by including performance information in their consumer confidence report (an annual water quality report mailed to customers).

When reporting annually to DOH, municipal water suppliers must use the *Annual Water Use Efficiency Performance Report Form*, DOH Form #331-376.



HELPING TO ENSURE SAFE AND RELIABLE DRINKING WATER

Attachment A-9

Performance reports need to include the following elements:

- Annual water system production total.
- Annual distribution system leakage information. If a municipal water supplier is not fully metered, then it needs to report annually on its progress toward installing meters on all service connections (see Fact Sheet *Distribution Leakage Standard*, DOH Pub. #331-304 for more details).
- A description of the water system's water use efficiency goals and progress toward achieving those goals.

### **Performance Reporting Schedule**

For municipal water suppliers with 1,000 or more connections, the initial performance report is due July 1, 2008.

For municipal water suppliers with fewer than 1,000 connections, the initial performance report is due July 1, 2009.

### **For More Information**

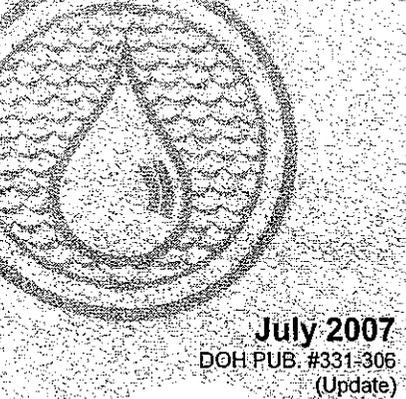
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**Michael Dixel**  
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Office of Drinking Water  
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PO Box 47822  
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Additional information can be found on the Web at:

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## Fact Sheet

### Water Use Efficiency Rule

# Metering Requirements

July 2007

DOH PUB. #331-306  
(Update)

## Background

Source and service metering are key to a successful water use efficiency program. Source and service meters provide the data necessary to determine leakage, assist in managing an important resource, and enhance planning activities. The water use efficiency rule requires installation of service meters. The Department of Health's (DOH) new metering requirement and the benefits of metering are summarized below.

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## Source Meters

Source meters are required on all existing and new water sources. Source meters assist water systems in tracking production and seasonal variations and account for the use of the resource.

## Service Meters

All municipal water suppliers must meter their existing and new service connections. The rule allows for the volume of water to be measured through a single meter for the following clustered entities: campgrounds, RV parks, designated mobile home parks, a building with multiple units, and complexes with multiple buildings served as a single connection. Municipal water suppliers have 10 years to phase in meter installation for existing connections. Installing service meters at new connections is required immediately.

Here are some of the benefits of installing service meters:

- Provides the most accurate method to determine distribution system leakage standard (see Fact Sheet, *Distribution Leakage Standard*, DOH Pub. #331-304).
- Assists in determining trends and variations in water usage.
- Identifies how much water customers use.
- Provides a tool to educate customers about their water use.
- Aids in the creation of customer-specific water use efficiency programs.
- Allows municipal water suppliers to begin to charge equitably based on usage.
- Increases efficiency which can expand water system capacity. This is especially true when combined with leak detection, leak repair, and a consumption-based rate structure.



## **Meter Selection, Installation, Operation, and Maintenance**

In order to ensure water is being accounted for accurately, meters must be selected, installed, operated, and maintained using generally accepted industry standards and as required by the manufacturer.

### **Meter Installation Schedule**

For municipal water suppliers with 1,000 or more connections, include a meter installation schedule with the initial performance report by July 1, 2008.

For municipal water suppliers with fewer than 1,000 connections, include a meter installation schedule with the initial performance report by July 1, 2009.

### **For More Information**

If you have any questions about the water use efficiency rule, please contact:

**Michael Dixel**  
Water Resources Policy Lead  
Office of Drinking Water  
Department of Health  
PO Box 47822  
Olympia, Washington 98504-7822  
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## Chapter 4 – Conservation Program, Water Right Analysis, System Reliability and Interties

### 4.1 CONSERVATION PROGRAM DEVELOPMENT AND IMPLEMENTATION

#### 4.1.1 Background

A drought in 1987, over-allocation of water rights in several regions of Washington, and continued growth in the Puget Sound metropolitan area resulted in adoption of the Water Use Efficiency Act of 1989. Over the years the requirements of this act have been refined into the Conservation Planning Requirements, which include a series of checklists for water systems of varying size.

The Sultan system falls within the 1,000 to 25,000 service connections category, and qualifies for a moderate program. All conservation programs must address three components: data collection, demand forecasts, and conservation elements. A common misconception is that water conservation programs focus only on reducing residential consumption through low-flush toilets and shower restrictors. In practice, an effective program relies on sound management of the utility and efficient use of existing resources. Such a program will bring the public into awareness of various aspects of conservation, including more than just low use fixtures. At the other extreme, should water supplies become severely limited, mandatory water use restrictions can be imposed.

#### 4.1.2 Water Use Data Collection Requirements

The City is complying with all of the requirements listed in the DOH Checklist for water use data collection. Source meters record daily flows. Residential service meters are read bi-monthly. Annual records of source production are presented in Table 2-3. The City has reduced the unmetered accounts from ten to only three: the US Post Office, Snohomish County Fire District No. 5, and one residence.

Year	Average Production in GPD	Served Population	Gallons Per Capita
1990	359,000	2236	161
1991	362,000	2241	162
1992	402,000	2293	175
1993	396,000	2407	165
1994	459,000	2562	179
<b>Average</b>			<b>168</b>
1999	415,000	3067	135
2000	476,000	3297	144
2001	465,000	3775	123
2002	473,000	3910	121
<b>Average</b>			<b>131</b>

Conservation data presented in Table 4-1 shows that a substantial reduction in water produced per capita has been achieved since the early 1990's.

#### 4.1.3 Demand Forecasting Requirements

Water demand forecasts as required by the DOH Checklist are presented in Chapter 2 based on population projections from Snohomish County using data provided by the Office of Financial Management. This

## Chapter 4 – Conservation Program, Water Right Analysis, System Reliability and Interties

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information is combined with water use data to show per capita consumption as presented in Table 2-3, which documents a general decline in water use per capita.

Conservation savings are described in Section 2.2.5. Implementation of Everett Pipeline No. 5 could potentially reduce per capita water demand from about 150 GPD down to 130 GPD using 2002 data by eliminating backwash and related operational water demands at the Sultan water treatment plant. However, because operation of the Lake 16 source and the Sultan water treatment plant is more cost-effective, this implementation will not occur in the immediate future.

Further conservation measures within the existing system are anticipated to reduce average day demand by about 5 GPD per capita by the year 2025. These will include installation of more, low-water-use fixtures and the continued replacement of older pipe.

### 4.1.4 Water Conservation Program Requirements

Two conservation measures are required by the DOH Checklist, and both have been implemented by the City:

- Program promotional efforts include periodic inserts to the water bills and distribution of conservation brochures provided by the Departments of Health and Ecology.
- Source meters have been in place for years and data is regularly recorded.

### 4.1.5 Water Conservation Program

Conservation Objectives will focus on reducing per capita water use. Unaccounted water is about 15 percent of production; and attention will be directed towards reducing that level. Annual water demand billed per capita now averages about 130 GPD, which is over 20 percent lower than in the early 1990's.

Evaluation of Recommended Conservation Measures identified several that have already been implemented including customer assistance, consumption history billing, service meters, unaccounted water, and conservation pricing.

Selected Conservation Activities for implementation by the City include the following:

- Eventual transfer of water source to Everett Pipeline No. 5 will eliminate the need for backwashing and associated cleaning of the existing water treatment plant, which uses about 79,000 gallons daily.
- Replacement of several older sections of distribution piping as outlined in Section 3.5.4 will reduce unaccounted water losses.
- Improved servicing of water service meters is anticipated to improve the accuracy of the bi-monthly billing and will likely result in slight increases in the quantities of water billed, which will reduce the amount of unaccounted water.

Targeted Water Savings Projections due to conservation efforts to be implemented over the next six years are reflected in the demand forecasts presented in Table 2-9. These savings are anticipated to reduce the water demand from about 130 GPD per capita down to about 125 GPD.

Table 1-1: Summary of WUE Requirements

Requirement	Deadline for municipal water suppliers under 1,000 connections	Deadline for municipal water suppliers with 1,000 or more connections
1 Begin collecting production and consumption data	January 1, 2008	January 1, 2007
2 Include WUE program in planning documents	January 22, 2008	January 22, 2008
3 Set your own WUE goals	January 22, 2009	January 22, 2008
4 Submit service meter installation schedule	July 1, 2009	July 1, 2008
5 Submit first annual performance report	July 1, 2009	July 1, 2008
6 Meet distribution leakage standard (based on 3-year rolling average)	July 1, 2011, or three years after installing all service meters	July 1, 2010, or three years after installing all service meters
7 Complete installation of all service meters	January 22, 2017	January 22, 2017



## 1.5 Who is Affected by Water Use Efficiency Requirements

*Disclaimer: This section is an attempt by the Department of Health to simplify the definition of a municipal water supplier. If you require further assistance with a legal determination, please contact the Department of Ecology.*

The Municipal Water Law directed that the WUE requirements apply to water systems defined as municipal water suppliers. A MWS is “an entity that supplies water for municipal water supply purposes.” [RCW 90.03.015(3)]

Your water system is most likely a MWS if you can answer “yes” to any of the following:

1. My system has 15 or more residential service connections *or* provides water in a residential manner to a non-residential population that averages at least 25 people for at least 60 days a year.
2. My system provides water to a city, town, public utility district, sewer district or water district.
3. My system provides water indirectly for purposes listed in 1 or 2, through the delivery of water to another water system.

# WATER USE Efficiency

1. We have been collecting this data for years, we just have to put it in the order the STATE wants.
2. We have some CONSERVATION PLANNING IN OUR COMP. PLAN 2005, more for the WUE will have to be added as a Amendment or something.
3. Set goals you can achieve, not too hard so you can show progress. Demonstrate a need for the goal - what's important - Avoid high cost, propose a solution to a problem
4. we already have meters in -
5. First report to customers can go with CCR, A.O.H. report must go to A.O.H., this report has to be available to public.
6. Our 3 year average is not until July 1 2010, but we are going over the last few years to see if we are losing much water, if we are losing water we will find out where, and how, and fix the problem.
7. we have all meters in



**Rockwell International**

Municipal & Utility Division  
400 North Lexington Avenue  
Pittsburgh, Pennsylvania 15208

**WATER COSTS MONEY  
... DON'T WASTE IT!**

streams-dia. at 60 psi		waste per quarter		waste per quarter	
inches	mm	gallons	liters	cubic feet	cubic meters
1/4	6.5	1,181,500	4,472,000	158,000	4,475
1/8	3.2	296,000	1,120,360	39,400	1,115
1/16	1.6	74,000	280,100	9,850	280
1/32	.8	18,500	70,020	2,465	70

SIZE OF HOLE IN PIPE/SERVICE	GALLONS		CUBIC FEET (Cu. Ft.)	
	Per Year	Per Month	Per Year	Per Month
1/4" hole	4,726,000	393,833	631,818	52,652
1/8" hole	1,184,000	98,667	158,289	13,191
1/16" hole	888,000	74,000	118,717	9,893
1/32" hole	74,000	6,167	9,893	824

7.48 Gallons equal 1 (one cubic foot)

Example: 17,633 Cu. Ft. of excess usage is less than a 1/16" size hole leaking constantly for one month

**WATER COSTS MONEY - PLEASE DON'T WASTE IT**