MUKILTEO WATER DISTRICT

WATER USE EFFICIENCY PROGRAM

OBJECTIVE

The objectives of this document are to identify the conservation and water use efficiency requirements pertaining to the Mukilteo Water District (District), evaluate past conservation efforts, and describe the District's water use efficiency program. This program will be re-evaluated annually, but is anticipated to remain in effect until the District develops its next Water System Plan, scheduled for 2009.

WATER USE EFFICIENCY RULE BACKGROUND

The Washington Legislature passed the Water Use Efficiency Act of 1989 (43.20.230 RCW), which directs Department of Health (DOH) to develop procedures and guidelines relating to water use efficiency. In response to this mandate, Department of Ecology (Ecology), the Washington Water Utilities Council, and DOH jointly published a document titled *Conservation Planning Requirements* (1994). In 2003, the Municipal Water Supply - Efficiency Requirements Act (Municipal Water Law) was passed and amended RCW 90.46 to require additional conservation measures. The Municipal Water Law, among other things, directed DOH to develop the Water Use Efficiency (WUE) Rule, which is outlined in the *Water Use Efficiency Guidebook* and became effective January 22, 2007. These documents provide guidelines and requirements regarding the development and implementation of conservation and efficiency programs for public water systems. Conservation and efficiency programs developed in compliance with these documents are required by DOH and by Ecology as part of a public water system water right application. Conservation must be evaluated and implemented as an alternate source of supply before state agencies approve applications for new or expanded water rights.

As an extension to the *Conservation Planning Requirements*, the WUE Rule sets more stringent requirements for public water purveyors. The WUE Rule is comprised of eight chapters:

1. Introduction to Water Use Efficiency Requirements
2. Water Meters
3. Data Collection
4. Demand Forecasting
5. Water Use Efficiency Program
6. Distribution System Leakage
7. Goal Setting and the Public Forum
8. Annual Performance Report

The following sections provide a discussion of chapters, requirements, and the impact the WUE Rule has on the District.

WATER USE EFFICIENCY REQUIREMENTS

The *Water Use Efficiency Guidebook* establishes varying implementation and evaluation requirements for municipal water suppliers (MWS). The new requirements focus on the importance of measuring water usage and evaluating the effectiveness of the WUE program. There are three fundamental elements to the Rule, including planning, distribution leakage standards, and goal setting and performance reporting.

Table 1 provides a summary of the WUE Rule requirements applicable to the District.

TABLE 1

Summary of WUE Requirements

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

WATER METERS

Metering all water production and consumption is critical for determining system wide and individual water use efficiency. The Rule sets deadlines for meter installation and data collection, which are shown in Table 2.

TABLE 2

Meter and Data Collection Deadlines

Requirement	Deadline for MWS with 1,000 or more connections
Install production meter(s)	January 22, 2007
Begin collecting production and consumption data	January 1, 2007
Submit service meter installation schedule	July 1, 2008
Complete installation of all service and intertie meters	January 22, 2017

As Table 2 indicates, the WUE Rule currently requires production meters on all existing and new water sources, and requires consumption meters on all customer connections by 2017. The District meters all existing customer connections and will meter all new connections, and therefore is in full compliance with consumption metering requirements.

The District's entire supply is provided by the City of Everett (City). Two master meters and two flow control meters provide water to the western part of the District. The District's 715E zone is an isolated zone that contains 15-20 percent of the District's customers. It receives all its water from the City through numerous interties, none of which are metered. Due to frequent annexation by the City into the 715E zone and the number of interties, there are no plans to install master meters within that zone. Production and consumption in the 715E zone are calculated from customer service meter data.

The District also has four emergency interties with the Alderwood Water & Wastewater District (AWWD). As described in WAC 246-290-132(4), emergency interties are exempt from metering requirements.

DATA COLLECTION

The WUE Rule requires regular collection of production and consumption data. Data must be reported in the District's planning documents and annual performance report to DOH. Water use data will be used for the following:

- Calculating leakage
- Forecasting demand for future water needs
- Identifying areas for more efficient water use
- Evaluating the success of your WUE program
- Describing water supply characteristics
- Aiding in decision-making about water management

It has been recommended by DOH to begin collecting production and consumption data by January 1, 2007 in order to have a year's worth of data available to prepare the first annual report due July 1, 2008.

The WUE Rule also set requirements for collecting source and service data. Source meters must be read monthly and reported as monthly and annual totals. Service meter totals only have to be reported in annual amounts, although it is recommended to read all service meters every one to two months. The District will report monthly and annual water produced, annual water consumed, annual totals for each customer class, and customer class seasonal variations.

The District has established five customer classes: single-family residential, multi-family residential, commercial/industrial/institutions, schools, and irrigation. By separating customers into different categories, the District can track the effects of their WUE program and conservation more accurately.

WATER SUPPLY CHARACTERISTICS

The District receives its water supply from the City of Everett. Master meters on Casino Road and Mukilteo Boulevard and flow control meters on 100th Street and 112th Street meter water entering the west part of the District. As previously described, the 715E Zone has no supply meter due to the number of connections to the City of Everett.

The City of Everett's water source is the Sultan River Waterworks Complex, located approximately 20 miles east of the City. The waterworks complex includes the Spada Lake Reservoir, the Chaplain Reservoir, and the Everett Filtration Plant.

The District does not currently hold any water rights. A summary of the City of Everett's water rights was developed from the City's *2000 Comprehensive Water Plan.* Table 3 summarizes water rights held by the City.

TABLE 3

Summary of City of Everett Surface Water Rights

Water Source	Water Right Certificate Number	Permitted Withdrawals	
		Maximum Instantaneous (mgd)[(1)]	Annual (acre-ft/yr)
Sultan River	C-352	13	14,800
Sultan River	C-1790	33	36,200
Sultan River	C-460	71	79,640
Sultan River	S1-00727C	129	144,000
Total Surface Water Rights		**246**	**274,640**

(1) mgd = million gallons per day

The City of Everett currently holds water rights of 246 mgd. Additional source and water right information, along with future demand projections can be found in the *2000 Comprehensive Water Plan*. Based on projections laid out in the City's plan, peak day water demands are not expected to exceed water rights until after 2050.

DISTRIBUTION SYSTEM LEAKAGE

The *Conservation Planning Requirements* set the maximum allowable rate of lost and unaccounted for water at 20 percent of total source production. The WUE Rule now requires that water distribution systems have a leakage rate of less than 10 percent of finished water production. Distribution system leakage is defined as all unaccounted for water that entered the distribution system, including reservoirs. Known or credibly estimated losses can be excluded from the leakage calculation and may include uses such as construction, fire fighting, and flushing.

Distribution system leakage for the District equals the difference between the volumes measured at the District's master meters and flow meters and the volume measured at the customers' meters. Production and consumption in the 715E zone are both measures from customer meters and added to the totals for the rest of the distribution system.

Table 4 provides annual data of distribution system leakage, including the 715E zone, from 1997 to 2007 and Figure 1 provides a graphical illustration of the data.

TABLE 4

District Distribution System Leakage Summary

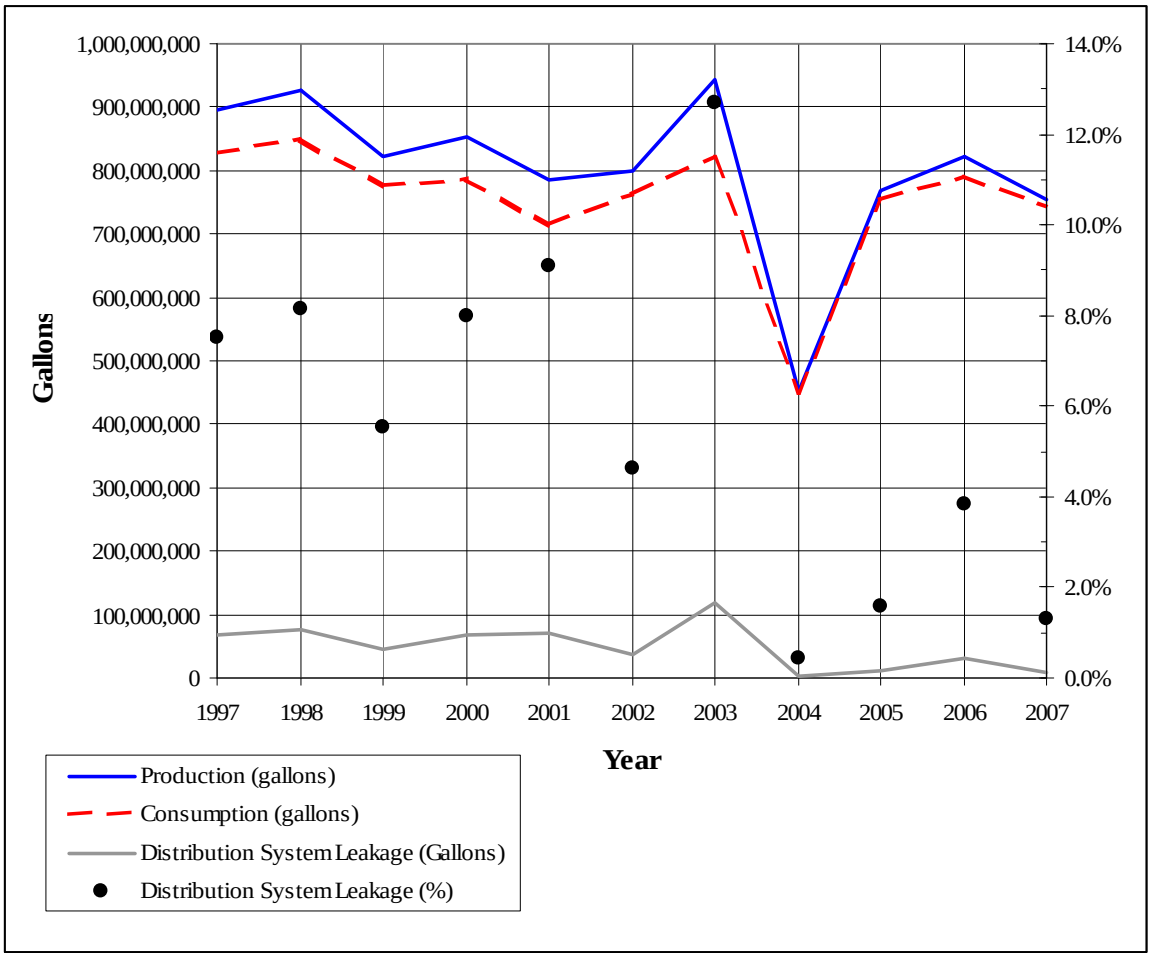
Year	Production (gallon)	Consumption (gallon)	Distribution System Leakage		
			Gallons	Annual %	3-yr Rolling Average
1997	894,464,380	827,388,845	67,075,535	7.5%	-
1998	926,098,650	850,830,557	75,268,093	8.1%	-
1999	822,002,810	776,345,406	45,657,404	5.6%	7.1%
2000	852,095,940	784,062,681	68,033,259	8.0%	7.3%
2001	785,278,730	713,924,445	71,354,285	9.1%	7.5%
2002	798,144,160	761,336,746	36,807,414	4.6%	7.2%
2003	943,271,710	823,409,774	119,861,936	12.7%	9.0%
2004(1)	451,481,000	449,539,000	1,942,000	0.4%	7.2%
2005	767,203,000	754,932,701	12,270,299	1.6%	6.2%
2006	821,542,000	789,884,287	31,657,713	3.9%	2.2%
2007(2)	672,899,000	669,560,286	3,338,714	0.50%	2.3%

(1) July-December due to missing production data.
(2) January-October, November-December not yet available.

As shown in Table 4 and Figure 1, the District has historically been well below the 10 percent distribution system leakage requirement. This is primarily due to monitoring customer accounts for unusual usage, which may indicate leaks, and conducting annual leak detection surveys throughout the distribution system. With a current three-year rolling average of 2.3 percent, the District is in full compliance with DOH requirements and does not need to implement a water loss control action plan.

FIGURE 1

District Distribution System Leakage Summary



WATER USE EFFICIENCY PROGRAM

The following sections describe the District's water use efficiency goals, a description of the conservation measures, and the resulting water use projections.

REGIONAL CONSERVATION PROGRAM

As a purveyor to over 30 water systems, both large and small, the City of Everett has established the Everett Water Utilities Committee (EWUC) to help advise the City Council regarding the planning, financing and implementation for future major capital improvements to the City's water system, which affects water service to regional customers outside the city, including but not limited to determination of service areas, location, sizing, and other technical input regarding filtration facilities.

EWUC strives to coordinate the interests and efforts of the wholesale customers and the City. One way of doing so is by developing and implementing a conservation program that wholesale customers can participate in. .

As a member of the EWUC, the District has historically participated in the regional conservation program developed by the City in order to cooperate with regional conservation efforts.

PAST AND PRESENT PROGRAMS

As mentioned above, the District chose to adopt Everett's regional conservation plan in the District's *Water System Comprehensive Plan (2003).* The plan included several goals, which are summarized in Table 5.

TABLE 5

EWUC Conservation Plan Goals

Goal	Objective
Minimizing the Cost of Water	• Reduce peak day demand • Defer capital costs • Capture low-cost savings
Meeting Regulatory Requirements	• Address current regulations • Anticipate future regulations • Demonstrate good management
Reduce Stream Impacts	• Promote efficiency • Increase water for fish • Benefit ESA and other issues
Preserving Water Rights	• Promote efficiency • Benefit the environment • Demonstrate good stewardship

The District utilizes resources provided by the City to help meet these goals. Several are additional measures that the District implements on their own, and several of the measures implemented by the District are supported by the City through the EWUC program. The following sections detail these measures.

District Measures

Customer Leak Surveys

The District monitors customer accounts an effort to identify leaks. There are several methods used for identifying potential leaks:

- If District staff observe a high read during meter reads, they check if the meter is running at the time, which indicates a possible leak.
- Billing software flags accounts using a variance percentage of 100% compared to the previous years bill.
- District staff reviews accounts flagged by the billing software and has some accounts rechecked.

If a potential leak is identified, a letter from the District is sent to the customer in an effort to alert the customer to the condition and repair the leak. In the first four years of this program, the District found 246 customer leaks. Letters were sent to the customers notifying them of their possible leak. A follow up with these customers revealed that 152 of the leaks were fixed, saving an estimated 18 million gallons (MG) per year. In the first half of 2007, the District monitored 70 accounts with high consumption and found 25 leaks. Assuming all 25 leaks were repaired, the resulting savings were 3 MG/yr, based on the average savings per leak from the leaks found between 1998 and 2002. Table 6 summarizes results of customer account leak detection.

TABLE 6

Customer Leak Detection Results

Year	Accounts Monitored	Leaks Detected	Leaks Repaired	Savings (MG)	Savings per Leak	
					gpd(1)	MG/yr
1998-2003	465	246	152	18.0	324	0.12
2004 (2)	112	53	22			
2005 (2)	112	74	21			
2006 (2)	113	69	25			
2007	70	54	25	3.0	324	0.12

(1) gpd = gallons per day
(2) District is currently summarizing savings of the customer leak detection for 2004 through 2006. This will be included prior to making the document available to the public.

Distribution System Leak Surveys

In addition, the District has contracted with Utility Service Associates (USA) to perform leak detection surveys on over 120 miles of the distribution system since 1997. When a leak is found, USA estimates the magnitude of the leak. Water loss estimated by USA is

typically 25 – 50% greater than what District personnel estimated leaks at during repair. Eighteen leaks have been detected to date, resulting in a savings of over 27 MG/yr by District estimates. Table 7 summarizes results of these surveys.

TABLE 7

Distribution System Leak Detection Survey Results

Year	Miles surveyed	Leaks repaired	Savings	
			gpm	MG/yr
1997-2002	30.0	6	25	13.1
2003	15.9	2	4	2.1
2004	17.5	4	20	10.5
2005	16.4	4	2.4	1.2
2006	24.2	1	0.4	0.2
2007	16.4	1	0.5	0.3
Total	**120.4**	**18**	**52.3**	**27.5**

Blow-off Replacement Program

Over the past two years, the District has replaced over 25 blow-off assemblies identified as leaking. The District estimates that approximately 17 gpm in leaks, or an estimated 8.9 MG/yr has been saved as a result of this program. The District will continue to identify and replace leaking blow-offs as part of its normal maintenance program.

Bills showing consumption history

Water utility bills for each customer class include information on consumption history for the past 14 months. This allows the customer to track their water use and compare usage to previous billing periods.

District Measures Supported by EWUC

Conservation Kits

In cooperation with EWUC, the District makes indoor and outdoor water conservation kits available to customers free of charge. Indoor water kits include a toilet tank displacement bag, low-flow showerhead, faucet aerators, and toilet leak detection dye tablets. Outdoor water kits include a water-saving garden hose nozzle, automatic timer, sprinkler rain gauge, and soil moisture meter. Table 8 shows the number of conservation kits allocated to the District by EWUC over the past seven years. The District does not keep track of how many kits are distributed per month, but they distribute their full allocation per year.

TABLE 8

Water Conservation Kits Allocated by EWUC

Year	Indoor Kits	Outdoor Kits
2001	220	220
2002	480	400
2003	700	700
2004	720	800
2005	520	700
2006	520	700
2007	520	700

Customer Education

The District provides information and tips for efficient water use for customers in their semi-annual newsletter. Information on efficient use is also available for customers at the District office.

Program Promotion

The District also provides a number of water conservation brochures to customers at the customer service desk at the District office. Brochure subjects have included summer lawn and watering calendars and guides, home water conservation guides, leaky faucet repair and landscaping tips.

Irrigation Management

In conjunction with EWUC, the District has adopted a water calendar for summer months to discourage frequent and over watering. The calendar allows for outdoor watering every third day. Watering days are assigned based on the last two digits of house numbers. In the event of a water shortage, irrigation management would be mandated.

EWUC Measures Implemented within District Service Area

School programs

EWUC's classroom education program on water conservation is presented periodically in schools within the District since the 2003-2004 school year. EWUC estimates that presentations were given in about 40 classrooms each school year from 2003-2005. During the 2005-2006 school year, EWUC staff visited 61 classrooms within the District, reaching an estimated 1,580 students.

Effects of Past Measures

Since the District adopted their current conservation plan in June 2003 with their *Water System Comprehensive Plan,* there has been significant reduction in customer water use, as illustrated in Table 9.

TABLE 9

District Water Savings from 2003 to 2007

	2003	2004	2005	2006	2007 (1)
Annual Consumption (gal)	823,409,774	790,571,758	754,932,701	789,884,287	669,560,286
Estimated Service Area Population (2)	25,853	26,359	26,643	27,157	27,690
Per capita use (gpcd) (3)	87	82	78	80	80
Annual savings (%)	NA	5.8%	5.5%	-2.6%	0.2%
Average savings (%)	2.2%				

(1) January-October 2007 production, gallons per capita per day calculated over that time period.
(2) From Water System Plan (2003), includes assumption of annexed areas by the City of Everett.
(3) Gallons per capita per day.

The current conservation plan has resulted in a savings of 2.2 percent on average per year since the plan was adopted in 2003. This corresponds to a savings of over 430 million gallons of water. Since their current plan has proven to be quite effective, the District will continue implementing all of these measures as part of their new WUE Program.

NEW WATER USE EFFICIENCY PROGRAM

Under the WUE Rule, the District must set water use efficiency goals and measure progress each year toward meeting these goals. Goals must include a measurable outcome, address water supply or demand characteristics, and include an implementation schedule. The District must also evaluate or implement conservation measures to help meet these goals.

Goals

The District plans to reduce its water use in several ways. First, the District will cooperate with the regional plan presented by EWUC to promote conservation by its customers and reduce overall water demand. Second, the District will meet the WUE Rule DSL requirements and plans to work diligently to try and maintain their current rate of distribution system leakage.

The City of Everett's new goal is to save approximately 0.85 mgd per year through the year 2012, with a total savings of approximately 1.95 mgd at the end of the six-year planning period. The City has developed a conservation program through EWUC that includes education, conservation kits, leak repair, rebates, and audits, with expected savings from each measure.

To cooperate with the regional conservation effort, the District's first goal is to save approximately 0.025 mgd, or 9.3 MG/yr through the year 2012, with a total savings of approximately 21 MG at the end of the six-year planning period. The District's water use accounts for about 3 percent of the City's total production and this goal represent 3 percent of the City's total goal.

The District's second goal is to maintain a distribution leakage rate of less than 10 percent per the WUE Rule requirements. As Table 4 shows, the District currently has a three-year rolling average of 2.3 percent DSL. The District will continue to monitor customer accounts for leaks and conduct annual leak detection surveys.

Since the District began distribution system leak detection surveys, they have repaired 18 leaks, saving a total of over 27 MG per year. Nearly fifty percent of those savings are from leaks found between 1997 and 2002. Since 2002, annual savings have ranged from 0.2 MG to 10.5 MG. Excluding the 20 gpm leak found in 2004, the average savings since 2002 is 1.0 MG per year.

The District also monitors customer accounts for high usage that may indicate leaks. Based on past savings, the District anticipates saving 1-2 MG per year. Compounded with savings from system leak detection surveys, the District expects to save approximately 2 MG annually through 2012. Although they expect to continue to see savings from their leak detection programs, the District does not anticipate these savings to change their average DSL rate significantly. These program goals will be re-evaluated annually, but the District does not anticipate significant changes to their program to occur until the District updates its Water System Plan in 2009.

Water Use Efficiency Measures

The WUE Rule states several measures that must be implemented or evaluated and provides a list of measures you can count as additional measures in the WUE Program. WAC 246-290-810 identifies the minimum number of water use efficiency measures that

must be evaluated based on system size. The District serves between 2,500 and 9,999 connections and therefore must evaluate or implement six supplementary water use efficiency measures in addition to the mandatory measures. The following sections describe both the mandatory and supplementary water use efficiency measures evaluated and indicate which have been or will be implemented by the District.

Mandatory Implementation - Source and Service Metering and Meter Calibration

As stated previously, the District currently meters all customers and has four master and flow control meters that account for water entering the District from the City. The District will continue to meter all new customers and sources. Source meters are calibrated periodically. The District's service meter replacement program replaces old meters with electronic touch read meters, which help decrease read errors.

Mandatory Implementation - Leak Detection and Water Accounting

Although they have a low historical lost and unaccounted for water, the District will continue to pursue leak detection and repair for its distribution systems.

The District will continue to monitor customer accounts in an effort to identify leaks and will conducting additional leak detection surveys throughout the system. Additionally, the District plans to investigate the installation of meters on hydrants used for fire fighting training as another means of accounting for lost water. They also plan to purchase several additional meters to use when flushing pipes.

Mandatory Implementation - Customer Education

The District will continue to provide customer education by including efficient water use tips in their semi-annual newsletter and by making information available at the District office.

Mandatory Evaluation – Rates that Encourage Efficiency

The District currently has a uniform rate structure. Customers are charged a monthly base rate, which is based on customer class and meter size. There is also an additional charge for each thousand gallons of water used. Table 10 summarizes the water rates.

TABLE 10

District Water Rate Summary (1)

Customer Category	Bi-monthly Basic Charge	Volume charge $/1,000 gallons	Additional Multi-family Unit Rate $/Unit
Single Family, size range from 5/8"x3/4" to 2"	$14.50 - $82.50	$2.41	NA
Multi-family, size range from 5/8"x3/4" to 10"	$14.50 - $1,300.50	$2.49	$8.70
Commercial/ Industrial, size range from 5/8"x3/4" to 24"	$14.50 - $3,316.54	$2.59	NA

(1) As of December 2007.

The District evaluated inclining block and seasonal rate structures during their last rate study in 2006. After evaluating the financial impacts, the District elected to establish the rate structure shown in Table 10. As illustrated in Table 9, the District has a per capita usage of around 80 gpcd, which is very low when compared with other utilities in the region. The District believes that the uniform volume charge it has in place is sufficient to encourage conservation across all rate classes and provide the financial stability to operate and maintain the water system at a high level of service to its customers. The District will re-evaluate inclined block and seasonal rate structures as part of its next rate study.

Mandatory Evaluation – Reclaimed Water Opportunities

Prior to November 2007, the District did not own or operate a wastewater treatment facility. The District operated a small collection system that conveyed all of its wastewater to the City of Everett for treatment. In November 2007, the District merged with the Olympic Terrace Sewer District. The District has had neither the time nor resources to evaluate reclaimed water opportunities, but will do so as part of the District's next Wastewater Facility Plan. At the present time, the City has not discussed plans for reclaimed water with the District, but the District will work with the City in identifying reclaimed water opportunities if the City approaches the District.

Supplementary Measures

The District will continue implementing all of their current measures described above as part of their new Water Use Efficiency Program. The following table summarizes these measures.

TABLE 11

District WUE Program Measures

Implemented Measures	Comment	Applicable Customer Classes
Program Promotion	District measure supported by EWUC	5
School Outreach	District measure supported by EWUC	1
Bills Showing Consumption History	District measure	5
Conservation Kits	District measure supported by EWUC	2
Irrigation Management	District measure supported by EWUC	1
Washer Rebates	EWUC measure	2
Toilet Rebates	EWUC measure	2
Water Audits	EWUC measure	2
Total Measures Counted		**20**

Evaluation of measures

As a purveyor of the City, the District's membership in EWUC is paid out of the wholesale water rate. As a result, the District can take advantage of the programs and resources provided by EWUC at no additional cost. Since many of the District's measures are supported by EWUC, the primary evaluation method of measures will be tracking reductions in water use instead of cost-effectiveness.

PUBLIC FORUM

The District will engage customers and other interested members of the public in a public forum when establishing WUE goals. The public forum not only allows the public to provide input on the decisions to be made by the governing body, but it also helps them understand the purpose of establishing goals.

This report was made available to the public two weeks prior to the forum and includes all required elements, such as:

1. The existing WUE program
    a. Water saved as a result of the current program
    b. Current goals
    c. WUE measures currently implemented
    d. Measures that have been evaluated
    e. How customers are educated about WUE
    f. Anticipated water savings from future measures
    g. How the WUE program will be evaluated

   h. Distribution leakage information
   i. The water loss control plan, if required
2. Any previous annual performance reports
3. Water supply characteristics information
4. Water demand forecasts information
5. Summary of any comments received about the proposed goals and how these comments were considered when establishing goals.

TARGET WATER SAVINGS PROJECTIONS

If these goals are realized, the District will see significant savings in water use. Table 12 shows projected savings from the above goals.

TABLE 12

Projected Water Use Efficiency Savings

	Expected Savings (MG per year)						
Measure	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**Total**
Leak Detection & Water Accounting (1)	2.0	2.0	2.0	2.0	2.0	2.0	12.0
Education (2)	6.6	6.7	6.9	7.0	7.2	7.3	7.3(3)
Conservation Kits (4)	0.6	1.4	1.4	1.0	1.0	1.0	6.4
Leak Repair (5)	2.9	1.4	0.2	0.1	0.1	0.1	4.9
Toilet Rebates (5)	-	0.09	0.19	0.19	0.19	0.19	0.84
Washer Rebates (5)	-	0.13	0.26	0.26	0.26	0.27	1.19
Audits (ICI) (5)	-	0.02	0.11	0.11	0.11	0.12	0.47
Audits (Schools) (5)	-	0.02	0.05	0.05	0.05	0.03	0.20
Total Savings	**12.0**	**11.4**	**10.5**	**10.2**	**10.4**	**10.5**	**33.3**

(1) District program.
(2) Education includes customer education, program promotion, bills showing consumption history, school outreach and irrigation management. Most of these are supported by EWUC.
(3) Education savings are not compounded annually due to the need to re-educate customers each year to maintain constant savings.
(4) District measure supported by EWUC.
(5) EWUC measure. Leak Repair is an EWUC measure that should not be confused with the District's separate leak program.

DEMAND FORECASTING

The WUE Rule has added new criteria to consider when preparing demand forecasts. It is now required to project demands both with and without anticipated savings from the water use efficiency program. This additional forecast can help determine whether capital improvements can be delayed or eliminated, and how much additional growth may be permitted. It also provides a basis to measure actual water use data against to monitor conservation success.

A demand forecast with and without anticipated savings from both goals is shown in Table 13. This is based on the forecast from the District's *Water System Comprehensive Plan* (2003).

TABLE 13

MWD Demand Forecast With and Without Conservation Savings

Year	Projected Population (1)	Without Conservation		With Conservation	
		Average Day Demand (MGD)	Peak Day Demand (MGD)	Average Day Demand (MGD)	Peak Day Demand (MGD)
2007	27,690	2.77	5.54	2.74	5.47
2008	28,211	2.82	5.64	2.79	5.58
2009	28,722	2.87	5.74	2.84	5.68
2010	26,295	2.63	5.26	2.60	5.20
2011	26,705	2.67	5.34	2.64	5.28
2012	27,115	2.71	5.42	2.68	5.36

(1) From the District's Water System Plan (2003), includes anticipated assumption of annexed areas by the City of Everett.

Demand projections will be updated in the next Water System Plan, scheduled for 2009.

ANNUAL PERFORMANCE REPORTING

The District is required to submit a performance report to the Department of Health by July 1, 2008, and each year thereafter. The annual report must include:

- Total source production and system wide consumption
- Distribution system leakage in percentage and volume
- Goal description, schedule, and progress toward meeting goals

DOH has developed a report form that must be submitted for annual reporting. The District has also developed a spreadsheet to track monthly production and consumption

volumes and calculated DSL volume and percentage. These reports will be made available to the public.

SUMMARY

To comply with the new requirements set forth in the Water Use Efficiency Rule and to reduce overall water use, the District has set goals to save approximately 28,000 gallons per day through the year 2012, and to maintain a distribution system leakage rate of less than 10 percent.

The District will employ several measures to accomplish these goals, which are as follows:

- Leak detection surveys
- Monitoring customer accounts for leaks
- Customer education
- Program promotion
- Bills showing consumption history
- School outreach
- Water conservation kits
- Irrigation management
- Cooperation with the Regional Program established by EWUC

If their goals are realized, the District will see annual savings of approximately 10 MG, with a total savings of over 33 MG by 2012.