

SILVER LAKE WATER & SEWER DISTRICT

WATER USE EFFICIENCY PROGRAM

OBJECTIVE

The objectives of this document are to identify the conservation and water use efficiency requirements pertaining to the Silver Lake Water & Sewer District (District), evaluate past conservation efforts, and describe the District's water use efficiency plan.

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 chapter, 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 WUE 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 WUE Rule has set deadlines for meter installation and data collection, 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. Additionally, the District measures any wheeled water exported to the Cross Valley Water District through Master Meter No. 6.

The District’s entire water supply is provided by the City of Everett (City) through direct connections to the City and indirect connections through the Clearview Water Supply Agency (CWSA). The District meters all water from the City, Clearview Facilities, and Alderwood Water & Wastewater District (AWWD) through five master meters (1, 4, 5, 7, and 8). All source meters are monitored continuously by the District’s SCADA system, and are physically visited a minimum of once per month.

The City has historically annexed portions of the District at an average annual rate of 1.2 percent. Often, the City’s annexations do not occur at locations that are convenient for the two water systems with respect to looping for fire flow and water quality. Further, the effort associated with relocating master meters as frequently as would be required is cost prohibitive. As a result, there are approximately 520 District service connections located on the upstream side of Master Meter No. 1. Conversely, the City has a number of service connections located on the District’s side of the master meters. All District connections on the City’s side of the master meters are read monthly on the same meter route (Meter Route 7), so their usage can easily be figured into Distribution System Leakage (DSL) and usage calculations. The City reads meters located on the District’s side of the master meter monthly and provides this information to the District and subtracts this amount from the wholesale water volume supplied to the District.

The District has a total of twelve emergency interties – four with the City of Everett, six with AWWD, and two with Cross Valley Water District (CVWD). These interties are

un-metered and are either normally closed valves or PRV stations used to provide fire flow. 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 the 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 or purchased, annual water consumed, annual totals for each customer class, and customer class seasonal variations of water use.

The District will also measure the amount of wheeled water that enters and leaves their system. Water entering the system is calculated as water produced and water leaving as authorized consumed water.

The District has established six customer classes: single-family residential, multi-family residential, duplex, low income senior citizen, commercial & irrigation, and schools. By separating customers into different categories, the District can track the effects of their WUE program more accurately.

SOURCE OF SUPPLY ANALYSIS

The District receives its water supply from the City of Everett by means of Master Meter No. 1 on the west side of the service area, from CWSA through Master Meters Nos. 4, 5, and 7 on the east side, and a small area in the south directly by AWWD through Master Meter No. 8. Although CWSA delivers most of the District's supply, CWSA and

AWWD wheel water to the District from the City of Everett source of supply, so all of the District's supply ultimately originates with the City of Everett's source.

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

The District does not currently hold any water rights. A summary of the City'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 City of Everett's *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 the difference between total water produced or purchased and all authorized water consumed. Known or credibly estimated losses can be included as authorized consumption in the leakage calculation and may include uses such as new construction activities, fire fighting, and water and sewer main flushing.

Distribution system leakage for the District equals the difference between the volumes provided by the City of Everett and CWSA and the volume measured at the customers' meters plus other credibly estimated losses.

Table 4 provides annual data of distribution system leakage from 2001 to 2006 and Figure 1 provides a graphical illustration of the data.

TABLE 4

Distribution System Leakage Summary

Year	Production (Gal)	Consumption (Gal)	Distribution System Leakage		
			Gallons	Annual %	3-year Rolling Average
2001 ⁽¹⁾	1,076,750,000	1,248,300,000	-171,550,000	-16%	-
2002 ⁽¹⁾	1,324,950,000	1,343,200,000	-18,250,000	-1%	-
2003 ⁽²⁾	1,438,100,000	1,350,500,000	87,600,000	6%	-4%
2004 ⁽³⁾	1,404,402,771	1,158,823,471	245,579,300	17%	7%
2005 ⁽³⁾	1,305,329,500	1,218,817,880	86,511,620	7%	10%
2006 ⁽³⁾	1,404,009,000	1,349,457,033	54,551,967	4%	9%

(1) Source: District's Water System Comprehensive Plan.

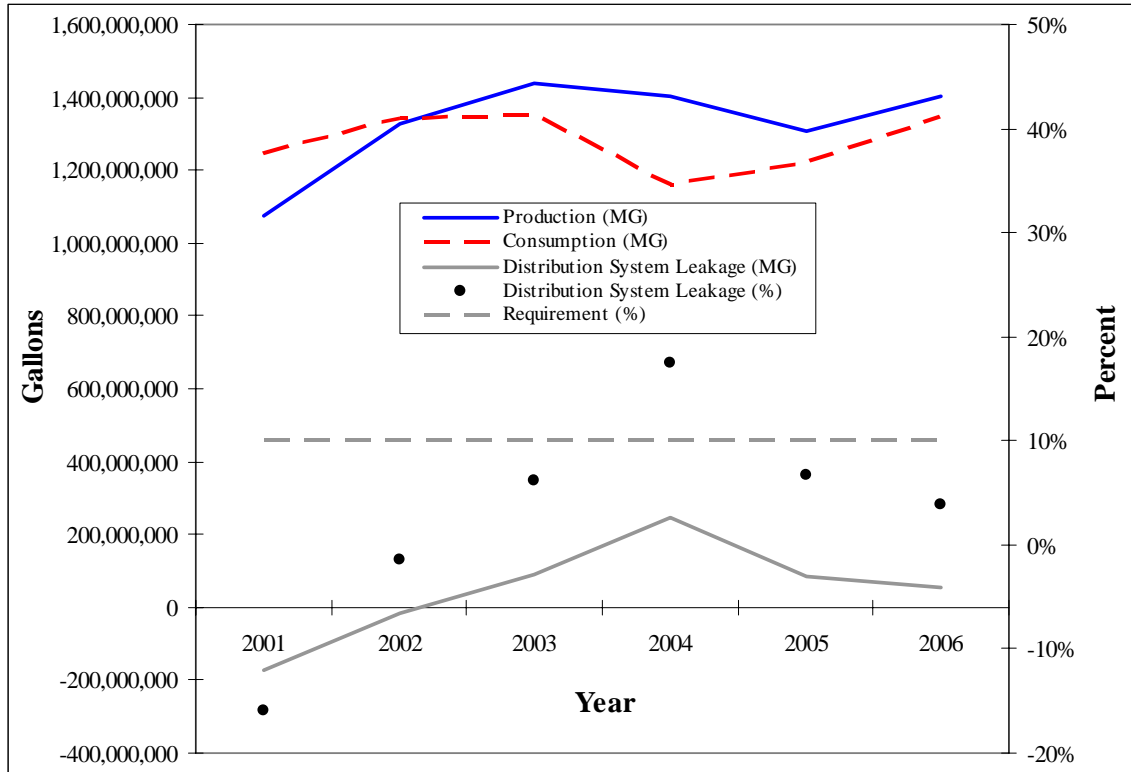
(2) Source: Reservoir No. 4 Predesign Report.

(3) Source: District billing software for consumption and District SCADA system for production.

As shown in Table 4 and Figure 1, the District has historically been below the 10 percent DSL requirement, with the exception of 2004. The District attributes the high DSL rate in 2004 to poor accounting in their billing software for the commercial and hydrant customer classes. The District attributes the negative values in 2001 and 2002 to poorly calibrated City of Everett master meters. In 2005, the District began taking the majority of its supply from CWSA. The District owns, operates, and can control the quality of information from CWSA master meters.

FIGURE 1

Distribution System Leakage Summary



The District attributes the historically low leakage rate to a relatively new distribution system compared to most other systems. With a current three-year rolling average of 9 percent, the District meets DOH requirements and does not need to develop a water loss control action plan.

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 PROGRAMS

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

The District chose to adopt EWUC's regional conservation plan in the District's *Water System Comprehensive Plan* (2003). The regional plan was proposed by the City in their *2000 Comprehensive Water Plan*, and included the goals summarized in Table 5.

TABLE 5

EWUC Conservation Plan Goals

Goal	Objective
Minimizing the Cost of Water	<ul style="list-style-type: none">• Reduce peak day demand• Defer capital costs• Capture low-cost savings
Metering Regulatory Requirements	<ul style="list-style-type: none">• Address current regulations• Anticipate future regulations• Demonstrate good management
Reduce Stream Impacts	<ul style="list-style-type: none">• Promote efficiency• Increase water for fish• Benefit ESA and other issues
Preserving Water Rights	<ul style="list-style-type: none">• 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

Public Education

The District provides information and tips for efficient water use for customers on their web site. The site also shows the current weather forecast. Additionally, there are links to information on repairing leaky faucets, conservation kits, winterizing, and summer watering schedules.

Bills Showing Consumption History

Water utility bills for each customer class include information on consumption history. The customer bills show the historical water usage as well as the increase or decrease in consumption from the same period of the previous year for each household. This allows the customer to track their water use and compare usage to previous billing periods.

Customer Leak Detection

The District monitors customer accounts in an effort to identify leaks. District staff can identify potential leaks when reading meters in several ways. If they observe a high meter read, they can check if the meter is currently running, which may indicate a leak. Also, all the of the District's customer meters are radio-read meters, which allow the District to check if the meter has been running for 24 hours straight, indicating a probable leak. If a potential leak is identified, District staff leaves a door hanger notification at the customer's home. Records have not been kept by the District of how many leaks are identified during meter reads.

Demonstration Gardens

The District office is landscaped as a demonstration garden with native plants that require little to no extra watering as an example to customers.

District Measures Supported by EWUC

Public Education

The District also provides a number of water conservation brochures to customers through bill inserts and displays at the District office. Brochure subjects include summer lawn and watering calendars and guides, home water conservation guides, leaky faucet repair and landscaping tips.

Conservation Kits

In cooperation with EWUC, the District has made 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 6 shows the number of conservation kits allocated to the District by EWUC over the past 6 years. The District does not keep track of how many kits are distributed, although they generally distribute every kit that is supplied by EWUC.

TABLE 6

Water Conservation Kits Allocated to the District by EWUC

Year	Indoor Kits	Outdoor Kits
2001	200	200
2002	400	300
2003	560	560
2004	630	700
2005	520	700
2006	520	700

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

The EWUC classroom education program on water conservation has been presented in schools within the District since the 2003-2004 school year. During the 2005-2006 school year, EWUC staff visited 22 classrooms, reaching an estimated 550 students.

Effects of Past Measures

Since the District adopted their current conservation plan in 2003 as a part of their *Water System Comprehensive Plan*, there has been a significant reduction in customer water use, as shown in Table 7.

TABLE 7

Water Savings from 2001 to 2006

Year	Population ⁽¹⁾	District Consumption (MGD)	Consumption per Capita (gpcd)
2001	35,041	3.42	97.6
2002	36,674	3.68	100.3
2003	36,920	3.70	100.2
2004	37,743	3.17	84.1
2005	39,109	3.34	85.4
2006	40,446	3.70	91.4

(1) As projected in the Water System Comprehensive Plan.

The current conservation plan has resulted in a reduction in per capita consumption from approximately 100 gpcd to approximately 91 gpcd. Since this plan has proven to be quite effective, the District will continue implementing all of these measures as part of their new WUE Plan.

Another major source of consistent water savings is from the use of Uniform Plumbing Code (UPC) fixtures. Over 50 percent of the District’s connections and pipes have been installed since 1992, when the Federal Energy Policy Act requiring more efficient fixtures went into effect. UPC fixtures save an estimated 33.5 gallons per capita per day¹. This has resulted in estimated savings of over 2.5 billion gallons of water over the past 15 years.

Since over fifty percent of the District was constructed after the adoption of the UPC, many of the measures used by other agencies are less effective for the District. For this reason, the District plans to maintain its current program and is not pursuing other, less cost-effective options.

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.

¹ Vickers, Amy. “Water Use Efficiency Standards for Plumbing Fixtures: Benefits of National Legislation,” American Water Works Association Journal. Vol. 82 (May 1990): 53.

Goals

The District will 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 work to reduce their current rate of distribution system leakage.

The City adopted a new program in 2007, which set a goal to save 1.95 MGD by the year 2012 throughout the entire Everett regional water system. To meet this goal, the City is implementing several conservation measures through EWUC, including customer education, indoor and outdoor conservation kits, leak detection, toilet and washer rebates, and water audits for schools, industrial, commercial, and institutional customers.

To cooperate with the regional conservation effort lead by the City, the District's first goal is to save approximately 0.06 MGD through the year 2012, with a total savings of approximately 0.14 MGD at the end of the six-year planning period. The District's water use accounts for about 7 percent of the City's total production, and these values represent 7 percent of the City's estimated savings.

The District's second goal is to reduce distribution system leakage by 3 mg/yr for the first three years of the program. Since the District has not conducted leak detection surveys before, nor have they kept records of customer leaks repaired, the estimate is based on savings from other systems in the area that have had similar leak detection programs. After three years, the District will evaluate the effectiveness of the leak detection program and will re-evaluate their goals. This corresponds to a reduction in annual DSL of approximately 0.25 percent.

Water Use Efficiency Measures

The WUE Rule states several measures that must be implemented or evaluated and provides a list of measures that 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 10,000 and 49,999 service connections and therefore must evaluate or implement nine 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 five master meters that account for water entering District from the City and Clearview Facilities. The District plans to meter all new customers and sources. All source meter readings are checked against the telemetry system and the City of Everett Master Meter readings to

verify proper calibration and measurement. Service meters are checked for accuracy upon request of the customer.

Mandatory Implementation - Leak Detection and Water Accounting

Although the District has low historical lost and unaccounted for water, the District would like to aggressively pursue leak detection and potential repair of its distribution system. Since both new construction and hydrant flushing water uses are measured through the District's hydrant meters or estimated based on flow rate, the District is confident that most of its DSL is due to leakage, and not unaccounted for or unauthorized water usage. To reduce leakage, the District will implement a leak detection program beginning in April 2008. The District plans to survey approximately 30 miles of pipe a year. The leak detection program will start by focusing on areas that are prone to leakage, such as areas with aging pipes, steep slopes, or wetlands, and will continue methodically throughout the District's distribution system. The District will repair leaks as they are identified.

Mandatory Implementation - Customer Education

As described above, the District provides information and tips for efficient water use for customers on their web page. The District will continue to include information on efficient water use on their web page. Customer education is also a key measure in the City's new Regional WUE Plan as well, so the District will take advantage of resources offered through their EWUC membership.

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 hundred cubic feet of water used. Table 8 summarizes the water rates.

TABLE 8

Water Rate Summary

Customer Class	Measure	Monthly Base Rate	Additional charge per ~ 750 gal
Low Income Senior Citizen	Per Dwelling Unit	\$3.29	\$1.37
Single Family Residential	Per Dwelling Unit	\$6.69	\$1.37
Duplex	Per Dwelling Unit	\$6.69	\$1.37
Multi-Family	Per Dwelling Unit	\$6.69	\$1.37
Schools	Per Meter	\$6.69	\$1.37
Commercial & Irrigation	Per 1" Meter	\$6.69	\$1.37
Commercial & Irrigation	Per 1.5" Meter	\$19.59	\$1.37
Commercial & Irrigation	Per 2" Meter	\$29.60	\$1.37
Commercial & Irrigation	Per 3" Meter	\$61.29	\$1.37
Commercial & Irrigation	Per 4" Meter	\$61.29	\$1.37
Commercial & Irrigation	Per 6" Meter	\$61.29	\$1.37
Commercial & Irrigation	Per 8" Meter	\$270.06	\$1.37

The District periodically reviews and adjusts its rates to ensure the financial stability of the water system. Rate adjustments are often made to offset wholesale water rate increases imposed by the City of Everett. However, every few years the District completes a rate study to take a comprehensive view of the District's revenues and expenses, including future capital expenditures, to develop a rate structure that can fund the District's operations into the future. Rate studies involve input from the public and the Board of Commissioners before the rates can be adopted.

When the District performs its next rate study, the District will evaluate conservation rate structures, including inclined blocks and seasonal rate. This evaluation will enable the District to develop a rate structure that meets all of the District needs, including the financial stability to support operating expenses, fund capital improvement projects, provide a high level of service at an affordable rate to District customers, and promote efficient water use.

Mandatory Evaluation – Reclaimed Water Opportunities

The District operates a collection system that conveys all of its wastewater either to the City of Everett Water Pollution Control Facility (WPCF) for treatment, or to AWWD, which in turn conveys it to King County Department of Natural Resources (KCDNR) for treatment. Since the District does not have a treatment facility, the District does not have the means to develop reclaimed water. Further, the District is primarily residential in nature, with approximately 4 percent of total number of connections qualifying as non-

residential. 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 elects to pursue reclaimed water at the WPCF, and transmission of reclaimed water to the District.

KCDNR is currently developing the Brightwater Treatment Plant as a reclaimed water facility. Currently, KCDNR's plans for a reclaimed water transmission system do not include portals within the District's service area, and as mentioned in the previous paragraph, the District does not currently have a customer base that makes reclaimed water cost effective.

Supplementary Measures

The District plans to continue implementing all of their current measures as part of their new WUE Program, plus some new measures sponsored through the District and through EWUC. The following table summarizes these measures.

TABLE 9
WUE Program Measures

Implemented Measures	Comment	Number of Applicable Customer Classes	New or Continued Measure
Bills Showing Consumption History	District measure	4	Continued
Conservation Kits	District measure supported by EWUC	2	Continued
Demonstration Garden	District measure	1	Continued
Irrigation Management	District measure supported by EWUC	1	Continued
Leak Detection	District measure	1	New
Program Promotion	District measure supported by EWUC	4	Continued
School Outreach	EWUC measure	1	Continued
Toilet Rebates	EWUC measure	2	New
Washer Rebates	EWUC measure	2	New
Water Audits	EWUC measure	2	Continued
Total Measures Counted		20	

As a new measure, the District will begin the implementation of the leak detection program. The District will use the information gathered through the leak detection studies to repair leak and target aging and failing mains for replacement. The District has historically replaced aging and failing mains by participating in state, county or city road projects, or through coordination with local developer extension projects. The leak

detection and any District pipeline replacement projects will be funded through the Capital Improvement Project fund, rates and general facility charges.

The EWUC program has also been expanded beyond the program defined six years ago to include Washer and Toilet Rebates, customer leak detection, and expanded water audits to include indoor business audits.

Evaluation of measures

As a member of EWUC, the District’s participation in the EWUC Regional Conservation Program is funded by the wholesale water rate paid to the City. As a result, the District can take advantage of the Regional Program and resources provided by EWUC with no additional costs. The primary evaluation method of measures will be tracking reductions in water use instead of cost-effectiveness, since many of the District’s measures are supported by EWUC.

TARGET WATER SAVINGS PROJECTIONS

If these goals are realized, the District will see significant savings in water use. Table 10 shows projected savings from these goals.

TABLE 10

Projected Water Use Efficiency Savings

Measure	Expected Savings (MG/yr)						
	2007	2008	2009	2010	2011	2012	Total
Leak Detection & Pipe Repair ⁽¹⁾	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Education ⁽²⁾	15.3	15.6	16.1	16.4	16.9	17.1	17.1 ⁽³⁾
Conservation Kits ⁽⁴⁾	1.4	3.2	3.2	2.4	2.4	2.4	14.9
Leak Repair ⁽⁵⁾	6.7	3.3	0.6	0.3	0.3	0.3	11.4
Washer Rebates ⁽⁵⁾	-	0.20	0.44	0.44	0.44	0.44	1.97
Toilet Rebates ⁽⁵⁾	-	0.30	0.62	0.62	0.62	0.62	2.78
Audits (ICI) ⁽⁵⁾	-	0.05	0.26	0.26	0.26	0.28	1.10
Audits (Schools) ⁽⁵⁾	-	0.04	0.12	0.12	0.12	0.08	0.46
Total Savings	26.4	25.6	24.3	23.5	24.0	24.2	52.7

- (1) District program.
- (2) Education includes customer education, program promotion, bills showing consumption history, demonstration garden, school outreach and irrigation management.
- (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.

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 many additional connections the District can allow given the current supply and infrastructure. It also provides a basis to measure conservation success versus actual water use data.

Table 11 provides water demand forecasts with and without anticipated savings from the WUE Program.

TABLE 11

Historic and Projected Demands

Year	Projected Population ⁽¹⁾	Without Conservation		With Conservation	
		Average Day Demand (MGD) ⁽¹⁾	Peak Day Demand (MGD) ⁽¹⁾	Average Day Demand (MGD)	Peak Day Demand (MGD)
2006	45,678	4.57	9.14	NA	NA
2007	48,240	4.82	9.65	4.75	9.58
2008	50,946	5.09	10.19	5.02	10.12
2009	52,634	5.26	10.53	5.19	10.46
2010	53,845	5.38	10.77	5.32	10.71
2011	54,604	5.46	10.92	5.39	10.85
2012	55,374	5.54	11.07	5.47	11.00

(1) Source: Silver Lake Water District Water System Comprehensive Plan.

Demand forecasts will be updated as part of the District's next Water System Comprehensive Plan, scheduled for 2009. At this time the District is only forecasting conservation demands through 2012, consistent with the City of Everett's program.

ANNUAL PERFORMANCE REPORTING

The District must submit a performance report to DOH 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 used. Gray & Osborne Inc. has developed a spreadsheet to track monthly production and consumption volumes and calculated DSL volume and percentage. The District intends to use this spreadsheet to provide data to fill out the DOH report form.

SUMMARY

To comply with new requirements set forth in the WUE Rule and to reduce overall water use, the District has set goals to save approximately 68,000 gpd, or 25 MG annually, through the year 2012.

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

- Bills showing consumption history
- Customer education
- Customer leak detection
- Conservation kits
- Demonstration garden
- Irrigation management
- Leak detection surveys
- Pipe replacement
- Program promotion
- School outreach
- Cooperation with the Regional Program established by the City of Everett

As required by the reporting requirements of WUE, the contents of this report were made available to the public on December 20, 2007, and the District's program was adopted by resolution on January 10, 2008.