

## SULTAN CITY COUNCIL AGENDA ITEM COVER SHEET

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**DATE:** January 24, 2008

**AGENDA ITEM:** A - 5

**SUBJECT:** Water Use Efficiency Rule (WUE)  
Resolution 08-04

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

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**ISSUE:**

Authorize the Mayor to sign Resolution 08-04 to adopt a goal compliant with the Water Use Efficiency Rule to reduce water consumption by 5 gallons per day per capita by 2013.

The City needs to adopt a goal compliant with the Water Efficiency Rule. The City can set the goal by resolution or ordinance – Sultan is setting the goal by Resolution 08-04. To use in accomplishing our goal, the City is required to have and use five measures.

Adopting the City of Sultan Water Use Efficiency Goal:

“The City of Sultan will allocate the necessary resources to reduce average water consumption from 130 gallons per day (GPD) per capita in 2007 to 125 GPD per capita in 2013. This represents a 4% reduction in daily consumption per capita by 2013.”

This goal does not require new policy nor is there a fee associated with this goal. The City is recommending a goal compliant with the Water Use Efficiency (WUE) Rule and the measures will help us reach this goal.

**RECOMMENDED ACTION:**

Adopt by Resolution 08-04, Attachment A, a goal to reduce average water consumption from 130 gpd per capita to 125 gpd per capita by 2013 for the Sultan Water System to be:

Compliant with “The Water Use Efficiency Rule”:

- a. Complete the installation of Electronic Water Meters to reduce average day demand per capita by capturing all usage. Reducing usage from 130 gallons per day per capita to 125 gallons per day per capita would meet water efficiency requirements.
- 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.

The WUE Rule requires the Municipality to set a minimum of five (5) goals for a system of Sultan's size (number of connections), Chapter 4 of the 2005 Water System Plan list six (6) goals for water conservation/efficient use. Sultan Water System has 1,000 or more connections. The proposed goal is consistent with the 2005 Department of Health approved Water System Plan Conservation Chapter, Attachment B.

**BACKGROUND:**

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 increasing demand on our state's water resources are:

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

December 6, 2007 the Council Committee discussed adopting a goal consistent with the Water Use Efficiency Rule and the 2005 Water System Plan. December 13, 2007 City Council discussed the impact the Water Use Efficiency Rule will have on the City of Sultan and agreed to set a Public Hearing for January 10, 2008.

At the January 10, 2008 Public Hearing, Beau Schilz, PACE Engineering, presented a Power Point presentation (attachment D) to explain the WUE Rule.

**SULTAN WATER UTILITY GOAL STATUS**

<b>Rule Requirement</b>	<b>Deadline for water systems w/1,000 or more connections</b>	<b>Sultan Goals Status</b>
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	Resolution 08-04
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%

During the presentation and public hearing, community members raised a number of questions regarding the proposed goal and the WUE Rule:

<b>CITIZEN COMMENT</b>	<b>CITY RESPONSE</b>
Citizen's were concerned this was going to increase water rates	<i>No, this rule is a way to measure the savings</i>
What can the average home do to save water?	<i>Low flow showerheads and faucets, aerators, and check for drips and leaks.  The City of Everett may supply some low flow showerheads and aerators, proportionate to the amount of water Sultan purchases</i>
Instant hot water devices were discussed: Can the devices be supplied by the City?	<i>The City will explore whether the costs savings equal the benefit.</i>
Methods of reclaiming gray water for residents	<i>The plan does not have options for gray water; it is cheaper to produce water than reclaim water.</i>
Why are we setting this goal?	<i>This is a voluntary program in this state and the City is choosing to be proactive.</i>
How much is this going to cost?	<i>This is not an additional fee; this is a voluntary program to save water.</i>

The WUE has seven elements:

1. Conservation Goal by January 22, 2008 (we received a short extension)
2. Metering
3. Data Collection
4. Distribution System Leakage less than (<) 10 %
5. WUE Program Measures
6. Water Demand Forecasting
7. Annual Performance Reports

WUE Program – five Measures:

Public Education Program

- School Curriculum Outreach
- Informational brochures in public places

Conservation Pricing

- Every 100 cubic feet of water over base amount (600 Cubic Feet)

Home Indoor Conservation Kits

- Low-flow showerheads, faucet aerators, low-flow hose nozzles

- Residential Leak Detection Program
- Consumption History on Bills

**SUMMARY:**

The proposed Water Use Efficiency goal is 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.

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.

**FISCAL IMPACT:**

The City will continue to install the electronic meters; staff has been replacing mechanical meters with electronic meters for two years and will continue to budget funds for the meter replacement program.

There is \$100,000 in the 2008 budget to purchase electronic meters.

The low-flow shower heads can be purchased in partnership with the City of Everett for approximately \$3,000. Staff time involved will be:

- handling the exchange with consumers
- helping with installation at consumers request

The WUE goal affects the Sultan Water System by:

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.

**ALTERNATIVES:**

- A. Approve Resolution 08-04 adopting the goal from the Water System Conservation Program that referred to in the Water Use Efficiency Rule (WUE). The City of Sultan will allocate the necessary resources to reduce average water consumption from 130 gallons per day (GPD) per capita in 2007 to 125 GPD per

capita in 2013. This represents a 4% reduction in daily consumption per capita by 2013.”

- B. Do nothing; the City will be non-compliant with Department of Health (DOH). This would create funding issues for the City of Sultan, compliance with state and federal law and how effective our Public Water Utility operates. This could also open the door for DOH to be concerned about the operations of the City water System.

**RECOMMENDED ACTION:**

Authorize the Mayor to sign Resolution 08-04 adopting a Water Use Efficiency Goal for the City of Sultan to reduce water consumption by 5 gpd per capita by 2013.

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**COUNCIL ACTION:**

**DATE:**

**ATTACHMENTS:**

- A Resolution 08-04
- B Water System Plan Goals, Chapter 4
- C Water Use Efficiency- Setting the City's Conservation Goal
- D Public Hearing, January 10, 2008 PowerPoint Presentation

**CITY OF SULTAN  
WATER USE EFFICIENT RULE (WUE)**

**RESOLUTION NO. 08-04**

A RESOLUTION OF THE CITY OF SULTAN COUNCIL, OF SULTAN, WASHINGTON, APPROVING THE WATER USE EFFICIENCY RULE (WUE) GOAL.

WHEREAS, THE Washington State Legislature passed the Municipal Water Supply – Efficiency Water Requirements Act of 2003 known as the Municipal Water Law; and

WHEREAS, The law gives municipal water suppliers certain benefits and obligations. One obligation is to comply with the Water Use Efficiency Rule; and

WHEREAS, the WUE has seven elements which include adopting a conservation goal by January 22, 2008, metering, data collection, distribution system leakage of less than 10%, WUE program measures, water demand forecasting and annual performance reports; and

WHEREAS, the WUE Program had five measures which include a public education program, conservation pricing, home indoor conservation kits, residential leak detection program and consumption history on bills; and

WHEREAS, the City of Sultan has installed production meters, collected consumption and production data, included the WUE program in planning documents, set our own WUE goals, submitted a service meter installation schedule, submitted the first annual performance report, installed service meters and met a 10% leakage standard (based on a 3-year average).

NOW, THEREFORE, THE CITY OF SULTAN COUNCIL, OF SULTAN, WASHINGTON, HEREBY RESOLVES as follows:

The Goal of the City of Sultan Water Department is that:

“The City of Sultan will allocate the necessary resources to reduce average water consumption from 130 gallons per day (GPD) per capita in 2007 to 125 GPD per capita in 2013. This represents a 4% reduction in daily consumption per capita by 2013.”

Adopted this 24<sup>th</sup> day of January, 2008

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Carolyn Eslick, Mayor

ATTEST:

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Laura Koenig, CLERK

## 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

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, AOH, 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



# WATER USE EFFICIENCY

## SETTING THE CITY'S CONSERVATION GOAL

Before January 22, 2008, the City of Sultan, along with all other public water providers in the State of Washington, will be required to set a goal for Water Use Efficiency, as required by the Municipal Water Law enacted in 2003. A Water Use Efficiency (WUE) Program will reduce average household or business water use in the City, in order to prolong the availability of water resources. The City has developed an attainable goal for water savings that will need to be reached collectively by city residents, employers, and City staff.

### Background Information on Setting the Goal:

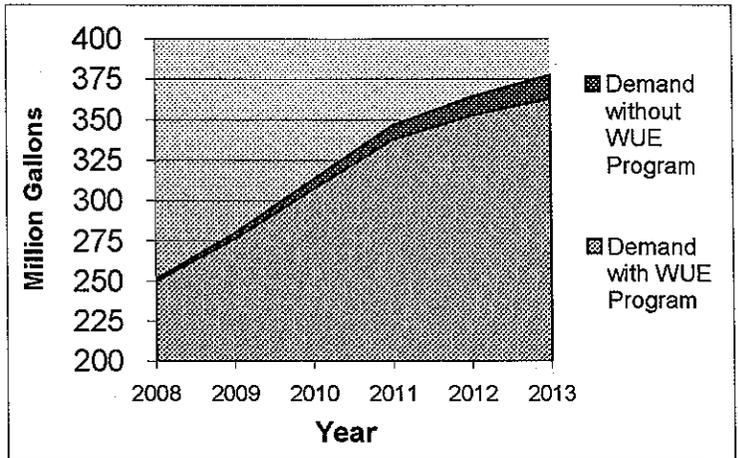
To calculate a reasonable savings in water usage, the City first looked at customer consumption over the past three years. Figure 1 below shows the City's water use from 2005-2007, and Figure 2 below displays current and projected water use. There are two scenarios listed in the graph: the darker blue area in the rear shows projected water demands if no conservation goal and program is developed, and the lighter green area in front shows projected water use if the Goal and Program is adopted as proposed. These demands were taken from the 2005 Water System Plan.

Figure 1: Historical Consumption

Year	Total Water Use (Million Gallons)	Estimated Consumption by Customer Class* (Million Gallons)		
		Single Family	Multi-Use	Commercial
2005	198.56	141.05*	4.84*	52.66*
2006	213.53	151.68*	5.21*	56.63*
2007	227.76	161.79*	5.56*	60.41*
Average	213.28	151.51	5.20	56.57
Average % of Total Use		71%	2%	27%

\* Estimated data based on 2006-2007 billing data.

Figure 2: Future Water Demands



The historic and projected customer consumption data displayed in Figures 1 and 2 includes non-revenue water, such as excess water used at the Water Treatment Plant, testing fire hydrants, and flushing water mains to improve water quality, as well as system leakage, which is water lost in the system due to leaks and/or illegal connections. In addition to the savings projected from participants in the WUE program, City staff will strive to minimize the amount of water used in day-to-day operations.

As discussed in the City's adopted 2005 Water System Plan, Sultan is a wholesale customer of the City of Everett, but the amount of water regularly purchased from Everett in 2007 was approximately 5% of total water use. The City has a contract to purchase up to 60% of its total required supply, or 2.59 million gallons per day (MGD). As such, Sultan may partner with Everett to acquire and purchase indoor residential conservation and leak detection kits at a lower cost.



## THE GOAL

**"The City of Sultan will allocate the necessary resources to reduce average water consumption from 130 gallons per day (GPD) per capita in 2007 to 125 GPD per capita in 2013. This represents a 4% reduction in daily consumption per capita by 2013."**

The table on the back of this page lists the proposed measures for the City of Sultan's 2008-2013 Water Use Efficiency Program.

## City of Sultan's Proposed WUE Program

Measure	Description	Cost per Unit	Water Savings Per Unit
1. Public Education	School curriculum outreach and informational brochures placed in City Hall and the Post Office that advertise water saving behavioral tips.	Minimal Labor Costs	Unknown
2. Indoor Residential Conservation Kits	The City will sell or distribute kits containing low-flow showerheads, bathroom aerators, and kitchen aerators.	\$6	9 GPD
3. Conservation Pricing	The District's rate structure encourages water savings by charging additional fees for use over 600 cubic feet per month.	None	Savings vary by customer
4. Leak Detection Program	Distributing detection tablets to targeted customers where leak detection is flagged during meter reading.	\$1	2 GPD
5. Show Consumption History on Bills	By showing historic consumption, customers can compare usage in the past and track their own progress on conservation efforts they have made.	None	Savings vary by customer

The savings are based on expected participation from the City's customers. The expected savings from the Public Education Program is unknown at this time, but are proven measures that will continue to exist as part of the District's comprehensive WUE Program.

Each year, the City will evaluate progress towards meeting the previously stated WUE Conservation goal, and will notify the Department of Health and the general public of their progress. If it is determined that the goal is not being met, the City will need to adjust its program or set a new goal with the help of further input from the public.

The City looks forward to hearing your comments at the public meeting scheduled for January 10<sup>th</sup>, 2008 at 7 pm at City Hall. If you cannot attend the meeting and wish to comment on the Goal or Program, please contact the City before January 21<sup>st</sup>, so your comments may be reviewed before official adoption at the January 24<sup>th</sup> City Council meeting.



## WATER USE EFFICIENCY PROGRAM

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## Municipal Water Law

- Effective Jan. 22, 2007
- Water suppliers must use water efficiently to preserve resources
- Directs Department of Health (DOH) to adopt enforceable water use efficiency (WUE) program

2

## Seven WUE Elements

1. **Conservation Goal by Jan. 22, 2008**
2. Metering
3. Data Collection
4. Distribution System Leakage < 10%
5. **WUE Program: 1-12 Measures**  
(5 Measures required for City of Sultan)
6. Water Demand Forecasting
7. Annual Performance Reports

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## Conservation Goal Requirements

- Determined by the Water Supplier (not DOH)
- Established by January 22, 2008
- Measurable in terms of reduced or maintained water production or usage
- Schedule for implementing measures and achieving goals
- Report annually to DOH and customers by July 1

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## WUE Program Development

- Looked at Historical Water Use
- Examined past Conservation Program
- 10 measures evaluated (Rule requires a minimum of 5 be evaluated).
- For each measure, savings potential and cost per CCF was determined.
  - Cost to produce 1 ccf (748 gallons): \$.30
- Measures must support the adopted Goal.

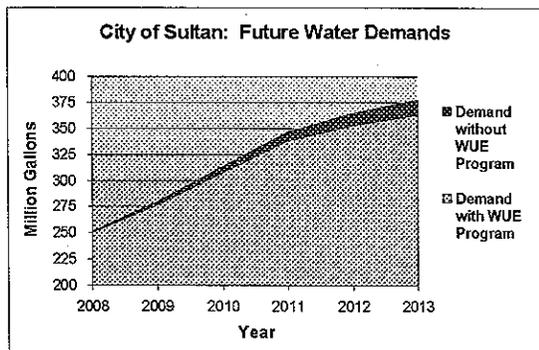
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## The Goal:

"The City of Sultan will allocate the necessary resources to reduce average water consumption from 130 gallons per day (GPD) per capita in 2007 to 125 GPD per capita in 2013. This represents a 4% reduction in daily consumption per capita by 2013."

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## WUE Program - Projected Savings



7

## Proposed WUE Program: 5 Cost-Effective Measures

1. Public Education Program
  - School Curriculum Outreach
  - Informational brochures in public places
2. Conservation Pricing\*
3. Home Indoor Conservation Kits
  - Low-flow showerheads, faucet aerators
4. Residential Leak Detection Program
5. Consumption History on Bills

\* Current Program

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## Closing Comments

- City of Sultan remains committed to being a good steward of its water resources
- WUE Program ensures sustainability of City facilities
- Annual evaluation will determine the effectiveness of the program

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## Public Comment and Action

- Public Comment and Suggestions?
- Public comment period on WUE Goal and Program will remain open until January 21<sup>st</sup>, 2008. Comments can be submitted to City Hall in person, by email ([cityhall@ci.sultan.wa.us](mailto:cityhall@ci.sultan.wa.us)), or by calling \_\_\_\_\_ at City Hall (360) 793-2231.

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