

**SULTAN CITY COUNCIL  
AGENDA ITEM COVER SHEET**

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**ITEM NO:** A-5

**DATE:** September 25, 2008

**SUBJECT:** First Reading and Adoption of Ordinance No. 994-08 adopting Amendment No. 2 to the 2005 Water System Plan

**CONTACT PERSON:** Deborah Knight, City Administrator

**ISSUE:**

The issue before the City Council is to have First Reading and Adoption of Ordinance No. 994-08 Amendment No. 2 to the 2005 Water System Plan (Attachment A).

Amendment No 2 to the Water System Plan for the City documents how the water system will be upgraded to be consistent with the 2008 Revisions to the 2004 Comprehensive Plan.

**STAFF RECOMMENDATION:**

Have First Reading and adoption of Ordinance No. 994-08 adopting Amendment No. 2 to the City of Sultan 2005 Water System Plan; providing for severability; and establishing an effective date.

**SUMMARY:**

Amendment No. 2 to the Water System Plan is prompted by revisions to the City's 2004 Comprehensive Plan.

The Growth Management Hearings Board has found that Sultan's 2004 Capital Facilities Plan was not adequate to demonstrate that anticipated future growth could be accommodated by improved infrastructure, including its sewer and water systems.

The adoption of this Ordinance is necessary to resolve the finding of noncompliance in the Final Decision and Order issued by the Board related to Case No. 06-03-0017.

Amendment No. 2 to the 2005 Water System Plan contains goals, policies, system maps and design standards intended to guide the development of water system facilities. Important components of the Plan include: Goals and Policies, Design Standards, Population Projections, Water Demand Projections, Capital Improvements, and Financial Implications.

### What's Changed

1. A defined water service area has been identified for the City and water service will not be provided to properties outside that boundary.
2. Property owners within the water service area desiring water service from the City will be required to annex into the City.
3. Standards for fire flow rates have been reduced to levels established by the National Fire Code, which may mean that a lower, but still safe rate of water flow may be available to fight fires at some properties.
4. Fire walls and fire sprinklers will be required in some non-residential structures at property owner expense.
5. New development will pay to construct a new Northeast Reservoir within the next decade, either as a condition of plat approval or through General Facilities Charges.
6. Property owners with existing private wells desiring to connect to the City water system and retain their private well for irrigation will be required to keep the private well irrigation system physically separate from the City water system as a backflow prevention valve will not be an accepted separation.
7. Reclaimed water from the wastewater treatment facility may become available to some customers for irrigation use or other non-potable purposes in lieu of potable water from the City water system.

### **BACKGROUND:**

The State Board of Health Code, Chapter 43.20 RCW, authorizes the State Department of Health to adopt rules and standards for public water systems, including mandatory planning and system development requirements.

In accordance with Chapter 43.20 RCW, and for the purpose of protection of public health and safety, the Department of Health, through WAC 246-290, requires all public water utilities to prepare comprehensive water system plans consistent with the provisions of state law. In accordance with Washington law, and for the protection of public health and safety, the City has the authority to undertake necessary planning and regulatory activities regarding the City's municipal water utility.

The City of Sultan adopted its 2004 Growth Management Act Comprehensive Plan in accordance with the Washington State Growth Management Act (GMA) on November 22, 2004 Ordinance No. 841-04.

Adoption of the Comprehensive Plan was an essential prerequisite to adoption of a Water System Plan, in that the GMA Comprehensive Plan provides the City with analysis and guidance in assessing and anticipating population growth and infrastructure needs for the present and future residents within the City's water system service areas.

On December 14, 2005, the City adopted the 2005 Water System Plan with the passage of Ordinance No. 895-05.

On February 12, 2007 an appeal (Case No. 07-03-0017) was filed with the Central Puget Sound Growth Management Hearings Board (Board) and the Board ruled on September 5, 2007 the City's action in adopting a Capital Facilities Element by Ordinance No. 942-06 did not comply with Growth Management Act (GMA), chapter 36.70A RCW, requirements since it did not include level-of-service standards to support the needs assessment; it did not demonstrate there would be adequate public facilities and services; and that the City did not reassess its land use element or take other measures to maintain consistency.

On March 14, 2008, the Board established a coordinated compliance schedule and issued its Order of Continuing Noncompliance, Amending Compliance Schedule (Compliance Order) establishing September 30, 2008, as the deadline for the City of Sultan to take appropriate legislative action to comply with the GMA.

The City Council and Planning Board began working together in January 2008 to make the necessary changes to the 2004 Comprehensive Plan and appendices including the 2005 City of Sultan Water System Plan.

The City provided 60-days notice to state agencies of proposed revisions to the 2004 City of Sultan Comprehensive Plan and appendices on July 1, 2008 consistent with RCW 36.70A.106(1).

A State Environmental Policy Act (SEPA) Environmental Checklist was prepared for Amendment No. 2 to the 2005 Water System Plan on July 17, 2008 and a threshold Determination of Non-Significance was issued on August 4, 2008 for the required 14-day comment period pursuant to WAC 197-11-340(2).

The City did not receive an appeal of the City's Determination of Non-Significance on Amendment No. 2 to the 2005 Water System Plan prior to expiration of the 14-day SEPA comment period on August 18, 2008.

The Planning Board conducted a public hearing on Amendment No. 2 to the 2005 Water System Plan on September 16, 2008 and provided an opportunity for citizens to comment regarding proposed amendment.

Following City Council approval of Amendment No. 2, the amended Water System Plan will be submitted to the Department of Health for its final approval.

**ALTERNATIVES:**

1. Have First Reading and adoption of ordinance No. 994-08. This action implies the City Council believes Amendment No. 2 to the 2005 Water System Plan meet the goals and regulatory requirements of the Growth Management Act.
2. Have First Reading of Ordinance No. 994-08 but delay adoption and direct staff to areas of concern. This action implies the City Council has questions or concerns regarding Amendment No. 2 to the 2005 Water System Plan and would like to direct staff to make corrections to the document(s) prior to adoption. The City Council would need to set a special meeting date to take legislation action on the proposed revisions prior to the September 30, 2008 deadline set by the Growth Management Hearings Board.
3. Do not have First Reading of Ordinance No. 994-08. This action implies the City Council has fundamental concerns regarding the proposed amendment and would like to delay First Reading to allow staff time to correct deficiencies. The City Council would need to set a special meeting date to take legislation action on the proposed revisions prior to the September 30, 2008 deadline set by the Growth Management Hearings Board.

**RECOMMENDED ACTION:**

Have First Reading and adoption of Ordinance No. 994-08 adopting Amendment No. 2 to the City of Sultan 2005 Water System Plan; providing for severability; and establishing an effective date.

**ATTACHMENTS**

Attachment A – Ordinance No. 994-08

# CITY OF SULTAN WASHINGTON

Ordinance NO. 994-08

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## **AN ORDINANCE OF THE CITY OF SULTAN ADOPTING AMENDMENT NO. 2 TO THE CITY OF SULTAN 2005 WATER SYSTEM PLAN; PROVIDING FOR SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE**

WHEREAS, the City of Sultan operates a water system and is a purveyor of water; and

WHEREAS, Chapter 246-290 WAC, adopted in part pursuant to the authority of Chapter 43.20 RCW, requires revision to a purveyor's water system plan every six years; and

WHEREAS, on December 14, 2005, the City Council approved Ordinance No. 895-05 adopting the City of Sultan 2005 Water System Plan; and

WHEREAS, on June 8, 2006, the City Council approved Ordinance No. 926-06 adopting Amendment No. 1 to the City of Sultan Water System Plan to amend the population projections, projected water demand, and projected impacts to the capital facilities plan to be consistent with the City of Sultan 2004 Comprehensive Plan; and

WHEREAS, an appeal (Case No. 07-03-0017) was filed with the Central Puget Sound Growth Management Hearings Board (Board) on February 12, 2007 and the Board ruled on September 5, 2007 the City's action in adopting a Capital Facilities Element by Ordinance No. 942-06 did not comply with Growth Management Act (GMA), chapter 36.70A RCW, requirements since it did not include level-of-service standards to support the needs assessment; it did not demonstrate that there would be adequate public facilities and services; and that the City did not reassess its land use element or take other measures to maintain consistency; and

WHEREAS, on March 14, 2008, the Board established a coordinated compliance schedule and issued its Order of Continuing Noncompliance, Amending Compliance Schedule (Compliance Order) establishing September 30, 2008, as the deadline for the City of Sultan to take appropriate legislative action to comply with the GMA; and

WHEREAS, the Sultan City Council desires to bring the City into compliance with the GMA and the Board's Compliance Order by September 30, 2008; and

WHEREAS, the City Council and Planning Board began working together in January 2008 to make the necessary changes to the 2004 Comprehensive Plan and appendices including the 2005 City of Sultan Water System Plan; and

WHEREAS, the City Council and Planning Board held joint meetings to discuss proposed revisions to the 2004 City of Sultan Comprehensive Plan and appendices on March 5, 2008, March 19, 2008, April 1, 2008, April, 15, 2008, May 6, 2008, May 13, 2008, May 20, 2008, May 27, 2008, June 3, 2008 and September 9, 2008; and

WHEREAS, the City held open houses in March, April, May, June and August providing for early and continuous public involvement under the GMA, RCW 36.70A.140; and

WHEREAS, the City sent notification of proposed revisions to the 2004 City of Sultan Comprehensive Plan and appendices to each household and post office box in the City of Sultan and unincorporated areas in the 98294 zip code; and

WHEREAS, the City provided 60-days notice to state agencies of proposed revisions to the 2004 City of Sultan Comprehensive Plan and appendices on July 1, 2008 consistent with RCW 36.70A.106(1); and

WHEREAS, a State Environmental Policy Act (SEPA) Environmental Checklist was prepared for Amendment No. 2 to the 2005 Water System Plan on July 17, 2008 and a threshold Determination of Non-Significance was issued on August 4, 2008 for the required 14-day comment period pursuant to WAC 197-11-340(2); and

WHEREAS, the City did not receive an appeal of the City's Determination of Non-Significance on Amendment No. 2 to the 2005 Water System Plan prior to expiration of the 14-day SEPA comment period on August 18, 2008; and

WHEREAS, the Planning Board conducted a public hearing on Amendment No. 2 to the 2005 Water System Plan on September 16, 2008 in accordance with Sultan Municipal Code 17.04.170, and provided an opportunity for citizens to comment regarding proposed amendment; and

WHEREAS, the City Council conducted a public hearing on Amendment No. 2 to the Water System Plan on September 25, 2008 in accordance with Sultan Municipal Code 17.04.170, and provided an opportunity for citizens to comment regarding proposed regulatory changes; and

WHEREAS, Amendment No. 2 to the Water System Plan documents how the water system will be upgraded to be consistent with the Comprehensive Plan; and

WHEREAS, the City Council finds that adoption of Amendment No. 2 to the 2005 Sultan Water System Plan is consistent with and implements the City's Water System Policies, the requirements of Washington law, and serves and advances the public health, safety and welfare of Sultan citizens.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SULTAN, WASHINGTON, DO RESOLVE AS FOLLOWS:

**Section 1. Findings.** The City Council makes the following findings:

- A. The City Council adopts and incorporates the foregoing recitals as findings as if set forth fully herein.
- B. The adoption of this Ordinance is necessary to resolve the finding of noncompliance in the Final Decision and Order issued by the Board related to Case No. 06-03-0017.
- C. The State Board of Health Code, Chapter 43.20 RCW, authorizes the State Department of Health to adopt rules and standards for public water systems, including mandatory planning and system development requirements. In accordance with Chapter 43.20 RCW, and for the purpose of protection of public health and safety, the Department of Health, through WAC 246-290, requires all public water utilities to prepare comprehensive water system plans consistent with the provisions of state law. In accordance with Washington law, and for the protection of public health and safety, the City has the authority to undertake necessary planning and regulatory activities regarding the City's municipal water utility.
- D. On December 14, 2005, the City adopted the 2005 Water System Plan with the passage of Ordinance No. 895-05. The Washington State Department of Health requires that water system plans be updated every six years.
- E. The City of Sultan adopted its 2004 Growth Management Act Comprehensive Plan in accordance with the Washington State Growth Management Act (GMA) on November 22, 2004 Ordinance No. 841-04. All findings, recitals and other provisions of Ordinance No. 841-04 and all provisions of the Comprehensive Plan and the public record supporting the Comprehensive Plan are incorporated herein by this reference. Adoption of the Comprehensive Plan was an essential prerequisite to adoption of a Water System Plan, in that the GMA Comprehensive Plan provides the City with analysis and guidance in assessing and anticipating population growth and infrastructure needs for the present and future residents within the City's water system service areas.
- F. In accordance with Chapter 43.21C RCW, the State Environmental Policy Act (SEPA), on August 4, 2008 and after timely public notice, the City's SEPA Responsible Official issued a threshold Determination of Non-Significance (DNS). There were no appeals to the DNS
- G. In accordance with Washington law, following City Council approval of Amendment No. 2, the amended Water System Plan will be submitted to the Department of Health for their final approval.
- H. Amendment No. 2 to the 2005 Water System Plan contains goals, policies, system maps and design standards intended to guide the development of water system facilities. Important components of the Plan include: Goals and Policies, Design Standards, Population Projections, Water Demand Projections, Capital Improvements, and Financial Implications.
- I. The Sultan Water System Plan has been prepared in conformance with the requirements of Chapter 43.20 RCW and WAC 246-290, and is consistent with and compatible with the Snohomish County Coordinated Water System Plan, adopted in accordance with Chapter 70.116 RCW.

**Section 2. Adoption.** Amendment No. 2 to the 2005 Sultan Water System Plan is approved in its entirety. The Council declares that the adoption of Amendment No. 2 to the Water

System Plan through this Ordinance is necessary for the protection of public health and public safety.

**Section 3. Preparation of Final Water System Plan Copies.** Copies of Amendment No. 2 to the City of Sultan 2005 Water System Plan approved by the City Council shall be prepared by the Sultan Department of Public Works staff and shall be made available for public inspection within 30 days of final approval by the State Department of Health. The Final Plan shall include as necessary all grammatical and numerical revisions and revisions.

**Section 4. Filing.** The Final Water System Plan as approved by the City Council shall be filed with the City Clerk and shall be available for public inspection upon the effective date of this Ordinance.

**Section 5. Transmittal To Department Of Health.** Upon completion of all final revisions, the Department of Public Works shall promptly transmit a copy of the final Sultan Water System Plan to the State Department of Health.

**Section 6.** In the event there is any inconsistency between the Water System Plan as accepted and approved by the Department of Health and the City's Comprehensive Plan, the City shall undertake a public participation process and amend the Water System Plan to be consistent with the Comprehensive Plan.

**Section 7. Effect Of Adopted Amendments.** Upon the approval of the 2008 Water System Plan by the State Department of Health, any previously drafted and adopted Water Plan(s) shall be amended by Amendment No. 2 to the 2005 Water System Plan, EXHIBIT A.

**Section 8. Severability.** If any clause, sentence, paragraph, section or part of this Ordinance or the Plan adopted herein, or their application to any person or circumstance is held to be invalid or unconstitutional by a court of competent jurisdiction, such order or judgment shall not affect the validity or constitutionality of the remainder of any part of this Ordinance or Plan. To this end, the provisions of each clause, sentence, paragraph, section or part of this Ordinance and Plan are declared severable.

**Section 9. Effective Date.** This Ordinance shall be the date on which the State Department of Health approves in writing the Amendment No. 2 to the 2005 Water System Plan, which date is more than five days following publication of this Ordinance or a summary thereof. If DOH does not approve the Plan in its entirety, then those portions approved by DOH shall be effective, and the portions not approved by DOH shall not be included in this adoption.

ADOPTED BY THE CITY COUNCIL AT A REGULAR MEETING THEREOF ON THE  
\_\_\_\_ DAY OF \_\_\_\_\_, 2008.

CITY OF SULTAN

\_\_\_\_\_  
Carolyn Eslick, Mayor

ATTEST/AUTHENTICATED:

\_\_\_\_\_  
Laura Koenig, City Clerk

Approved as to form:

\_\_\_\_\_  
Kathy Hardy, City Attorney

Filed with the City Clerk:  
Passed by the City Council:  
Date of Publication:  
Effective Date:



# Water System Plan

# AMENDMENT NO 2

## August 2008 Draft

Prepared By

**BHC Consultants LLC**  
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John C Wilson PE  
Project Manager



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John C Wilson PE

2008

**City of Sultan**  
**WATER SYSTEM PLAN**

**AMENDMENT NO 2**

August 2008 Draft

**Purpose**

The Growth Management Hearings Board identified a significant GMA compliance issue in that the City's planning for capital facilities was not adequate to demonstrate that anticipated future growth could be accommodated. An update to the Comprehensive Plan has been prepared to correct this deficiency. Projections outlined in the 2004 Plan and EIS have been changed substantially, as have the capital cost estimates. Adoption of the revised Comprehensive Plan and Capital Facilities Plan in late 2008 will meet the mandates of the Hearings Board, and ensure that the impacts of growth as projected in 2004 will be properly mitigated by a well-planned infrastructure system.

This Amendment No 2 to the Water System Plan for the City documents how the water system will be upgraded to be consistent with the Comprehensive Plan.

**Growth Management Boundary**

The growth management boundary as shown in Figure W-1 has been revised to reflect the current assignment to the City of Sultan by Snohomish County. The current boundary reflects a modest change from the 2004 boundary.

Some changes have also been made to the land use planning for the City, though these did not result in significantly different development densities than were used in the previous sewer planning efforts.

The City water system planning is conducted in compliance with the North Snohomish County Coordinated Water System Plan as updated and amended. In particular, the City coordinates water system planning as needed with the adjacent water purveyors including the City of Everett, Snohomish County PUD, Highland Water District, and Startup Water Association.

The City currently serves two customers south of US-2 and west of the Sultan River that are outside the city limit and outside the Urban Growth Area as shown on Figure W-1. Water service to this area will continue; however the City will not extend water service into other areas that are not within the UGA.

**Background**

Lake 16 remains the primary source for the existing water supply to the City. The City filed in 1974 a water right claim for 2.88 million gallons per day (MGD) but does not yet have a formal water right. The City updated this claim in 1991 and the Department of Ecology stated by letter of November 3, 1993, that the claim held potential for becoming vested. The actual measured capacity from Lake 16 through the 11,800 feet of transmission piping is 1.36 MGD.

The City executed a Water Supply Contract with the City of Everett on 30 June 1999 for Pipeline 5 as a supplemental source of water supply for a Maximum Day Demand in 2025 of 2.91 MGD of treated water. The pipeline built to implement this Contract has a gravity flow capacity of 3.84 MGD; and more when the City of Everett activates pumping into Pipeline 5. This capacity is shared with the Snohomish County PUD however; so the City of Sultan share is 2.56 MGD.

The City also has two wells rated at 300 gallons per minute (GPM) each located north of the Centennial Park. These wells draw from the Sultan River aquifer; however the water quality does not meet drinking water standards and is currently used only for irrigation. Neither well has been able to actually produce 300 GPM within the past decade.

Sultan’s water filtration plant has a capacity of about 1.36 MGD over 24 hours.

The City currently operates two water storage tanks on the same site as the water filtration plant. The first tank was built in 1978 with a capacity of 1,080,000 gallons. The second tank was completed in 2000 with a capacity of 1,500,000 gallons.

The City water distribution system totals about 25.5 miles of pipe. About 20 percent of the system is asbestos cement. About 12 percent of the system is 4-inch diameter pipe, mostly in the downtown area. The existing water distribution system is shown on Figure W-2 and an inventory of the system is summarized in Table 1.

**Table 1  
Inventory of Water Distribution System Piping (2005)**

Pipe Diameter In inches	Pipe Footage by Material			Total Footage
	Asbestos Cement	PVC	Ductile Iron	
4	11,800		4,100	15,900
6	14,000	1,900	11,540	27,440
8	2,400	500	51,630	54,530
10			16,850	16,850
12			14,850	14,850
14			5,300	5,300
Total	28,200	2,400	104,270	134,870

The northeast portion of the City distribution system can not be adequately supplied by gravity from the water surface elevation in the water storage tanks. A booster pump station serves this area as a high pressure zone as summarized in Table 2.

**Table 2  
Booster Pump Station Equipment**

<b>Pump Description</b>	<b>Gallons per Minute</b>	<b>Horsepower</b>
Service pumps (two)	100	10
High service pump	200	15
Fire pump (& backwash)	2,000	100

The fire pump is also used to backwash the filters in the water treatment plant.

**Goal and Policies**

Maintain and enhance the development and operation of a quality water supply and distribution system that will meet the needs of Sultan’s present and future urban service area through implementing the following policies:

1. Provide potable water throughout the service area for consumption and fire protection purposes to Sultan residents and parties who agree to annex in exchange for service.
2. Construct additional storage facilities at locations that will provide sufficient reserves and maintain line pressure for consumption and fire protection purposes.
3. Provide distribution loops that are capable of providing adequate fire flow and pressure requirements throughout the Sultan service area. Maintain fire hydrant distributions and other standards appropriate to the highest public fire protection ratings.
4. Work with Snohomish County, Washington State Department of Ecology, and other public agencies to correct failed septic system problems within the city limits, the urban growth area, and rural areas surrounding the Sultan urban service area to reduce possible contamination of the groundwater reserve and aquifer.
5. Encourage property owners of developed parcels currently served by a private well and within the UGA to connect to the City water system and to transfer their water right to the City. These water rights, together with the rights already possessed by the City for irrigation wells, will be assembled for possible future water supply needs, even should treatment of the groundwater be required.

Where wells remain private for irrigation use, the irrigation system shall remain separate from the City water system and no new backflow prevention valves will be allowed. Existing backflow prevention valves for irrigation systems of existing customers using City water can remain subject to annual inspection.

6. Consider additional incentives for water conservation, surcharge for service outside the city limits, acquisition of groundwater rights, new sources of employment, and other water programs with cost implications. The City currently has a rate structure defining the methodology for monthly service charge, capital facilities charges, service connection and meter cost, and various other fees

related to operation and maintenance of the water system. A differential exists between residential and non-residential customers, as well as for low-income and elderly.

### **Design Standards**

Standards for water system facilities are defined by WAC 246-290-100 and the 'Water System Design Manual' published by the Washington State Department of Health. State Health also issues requirements for water quality and monitoring to ensure compliance with federal drinking water standards. Planning, design, construction, operations, and maintenance for the City water system is conducted in accordance with these standards, plus the following:

- The 'Water System Design Manual' specifies that the minimum operating pressure in the water distribution system shall not fall below 30 pounds per square inch (PSI) at the water meter, which is normally at the right-of-way line for the served property, and not less than 20 PSI under fire flow conditions.
- The City has established the minimum fire flow standard as 1,000 GPM for residential areas and 1,500 GPM for non-residential development in accordance with the National Fire Code. Non-residential construction must also comply with the Fire Code requirements for dividing structures into fire areas according to the class of building construction and providing fire sprinklers.

Lake 16 will remain the primary water source of supply for the City. The connection to the City of Everett Pipeline 5 will provide a supplemental source for peak day demands that exceed the Lake 16 capacity. However, the City recognizes that the Contract with Everett encourages Sultan to manage withdrawals from Pipeline 5 so that peak withdrawal does not exceed 3 times the average withdrawal. Accordingly, average withdrawals will be managed using the storage capacity available in the City water tanks so the withdrawal from Pipeline 5 does not exceed the Contract ratio of peak at 3 times average.

### **Population Projections**

The Puget Sound Regional Council expects the Skykomish Valley area will eventually support 17,026 persons by the year 2010, 20,549 persons by the year 2020, and 23,977 persons by the year 2030. The projected Sultan population of 11,119 in 2025 would represent about half of these residents.

By the year 2012, the County's Buildable Lands Report (BLR) expects approximately 7,300 persons will reside in the UGA of which 90% will reside in city limits. The BLR further expects the current UGA will eventually support a population of 11,119 persons at build-out in 2025. It is assumed that the entire UGA will be incorporated into the City by that time. This is an official population estimate and is used by the City for its growth and capital facilities planning.

In 2006, there were approximately 1,010 jobs located in Sultan. Snohomish County's Buildable Lands Report and the City's Comprehensive Plan estimate an increase to 2,000 jobs in Sultan by 2025. These projections are summarized in Table 3.

**Table 3  
Population and Development Projections**

Parameter	2005	2006	2007	2010	2012	2014	2025
City Population	4,225	4,440	4,530	5,874	6,570	7,386	11,119
UGA Population		4,785		6,066	7,300	8,028	11,119
City Housing Units		1,713	1,739	2,066	2,505	2,920	4,464
Parameter	2005	2006	2007	2010	2012	2014	2025
Average Household Size	2.78	2.78	2.74	2.71	2.68	2.66	2.62
Housing Vacancy Rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Employment		1,010					2,000
UGA Area in Acres			2,304				2,304
Buildable			954				954
Unbuildable			1,350				1,350

**Water Demand Projections**

The existing water supply and demand parameters have been computed in gallons per day from the flows recorded for 2007 as reported by the City are summarized in Table 4.

**Table 4  
2007 Water Supply and Demand Parameters**

Parameter	Average GPD	Percent
Water Produced from Lake 16	487,000	95.5
Water Purchased from Everett	23,000	4.5
Total Average Day Water	510,000	100
Filter Backwash	46,000	9.0
Residential Billings	239,000	46.9
Non-Residential Billings	165,000	32.4
Water Lost	60,000	11.7

Unit water consumption for 2007 as derived from Table 4 can be summarized as follows:

Residential               = 239,000 GPD / 4,530 people = 52.8 GPD per person  
 Non-Residential       = 165,000 GPD / 1,010 employees = 163 GPD / employee

Peak day water demand in 2007 was 1,023,000 GPD through the filter plant on July 12<sup>th</sup>, which is a peak factor of about 2.1 x average day demand. However, 2006 experienced a peak day of 1,134,000 GPD on August 7<sup>th</sup>, which was a peak day factor of about 2.2 x the 2006 average day demand.

Water conservation activities are projected to reduce water demands per employee; however, residential water demands may increase as new home are built with more water-using appliances. Table 5 summarizes the projected 2025 population to be

served by the water system and the projected employment to project the future water demand for that year.

**Table 5  
Projected 2025 Water Demands**

<b>Parameter</b>	<b>Quantity</b>	<b>Unit GPD</b>	<b>Total GPD</b>
Population	11,119	55	612,000
Employment	2,000	130	260,000
Backwash	8 %	---	86,000
Water Lost	11 %	---	118,000
Average Day Demand			1,076,000

Peak day demand in 2025 is projected to decline to about 2.0 x average day demand to about 2,150,000 GPD. The increase in average day demand will create more days when Lake 16 can not meet the demand so water purchase from the City of Everett is projected to increase to an average of about 30 percent or about 320,000 GPD.

**Projected Needs Through 2025**

Improvements to the water distribution piping system fall into categories as described below:

- New Streets listed in the Transportation Improvement Program (TIP) will have a water main at least 8-inch diameter.
- Reconstructed Streets listed in the TIP will have a water main at least 8-inch in diameter, unless an adequate water main is already in place.
- Main Extensions in streets within UGA but not included in the TIP list will have a water main at least 8-inches in diameter.
- Replacement Pipes at least 8-inch diameter are needed in several locations where the existing water main is under sized, of obsolete material, or otherwise defective.

Table 6 summarizes the water mains to be installed concurrently with street improvements listed in the Transportation Improvement Program. Construction costs include only the water facilities with crushed backfill. The street and surface improvements are in the TIP.

**Table 6**  
**Water Improvements Included with Transportation Improvements**

<b>TIP No</b>	<b>Project Description</b>	<b>Diameter</b>	<b>Feet of Pipe</b>	<b>Construction Cost</b>	<b>Project Cost</b>
T-24	New collector (339 <sup>th</sup> SE – Sultan Basin Rd)	8	5,400	\$648,000	\$907,000
T-25	Foundry Road (Cascade View – railroad)	8	1,400	\$168,000	\$235,000
T-26	New collector (339 <sup>th</sup> SE – Sultan Basin Rd)	8	5,800	\$696,000	\$974,000
T-27	Extend E Main St to 149 <sup>th</sup> St SE	8	500	\$60,000	\$84,000
T-29	Extend Kessler Dr. (Bryant Rd. – 124 <sup>th</sup> St)	8	2,700	\$324,000	\$454,000
T-31a	New north-south arterial (US-2 – 124 <sup>th</sup> St)	8	8,800	\$1,056,000	\$1,478,000
T-31c	330 Ave SE just north of US-2	8	700	\$84,000	\$118,000
T-32a	Rice Rd /339 <sup>th</sup> (132 <sup>nd</sup> to UGA boundary)	8	1,400	\$168,000	\$235,000
T-32b	Extend Rice Rd /339 <sup>th</sup> (UGA – 124 <sup>th</sup> )	8	1,300	\$156,000	\$218,000
T-33	New arterial (Old Owen – Sportmans Park)	8	2,000	\$240,000	\$336,000
T-35	Cascade View Dr (US-2 – 331 <sup>st</sup> )	8	1,600	\$192,000	\$269,000
T-36	138 <sup>th</sup> St (Sultan Basin Rd – 339 <sup>th</sup> Ave SE)	14 exists	0	\$0	\$0
T-38	1 <sup>st</sup> St (High Ave to Trout Farm Rd)	8	4,700	\$564,000	\$790,000
T-41	339 <sup>th</sup> Ave (Sultan Startup Rd – 132 <sup>nd</sup> St)	8	1,900	\$228,000	\$319,000
T-42	Sultan Basin Rd (138 <sup>th</sup> – 124 <sup>th</sup> St)	12 exists	0	\$0	\$0
<b>TIP No</b>	<b>Project Description</b>	<b>Diameter</b>	<b>Feet of Pipe</b>	<b>Construction Cost</b>	<b>Project Cost</b>
T-43	Walburn Road (11 <sup>th</sup> St – Sultan Basin Rd)	8	1,700	\$204,000	\$286,000
T-44	Extend Pine St (9 <sup>th</sup> – Walburn)	8 *	1,300	\$156,000	\$218,000
T-45	Alder St (4 <sup>th</sup> – 8 <sup>th</sup> St)	8	2,700	\$324,000	\$454,000
T-47	Trout Farm Rd (307 <sup>th</sup> – 125 <sup>th</sup> )	8 *	2,500	\$300,000	\$420,000
T-48	Gohr Road (1 <sup>st</sup> St – 132 <sup>nd</sup> SE)	8 exists	0	\$0	\$0
T-49	Gohr Road (132 <sup>nd</sup> Ave – about 128 <sup>th</sup> )	8	2,100	\$252,000	\$353,000
T-51	3 <sup>rd</sup> Street (Main – High)	8	2,500	\$300,000	\$420,000
T-57	132 <sup>nd</sup> St. (Sultan Basin – Trout Farm Rd)	8	6,600	\$792,000	\$1,109,000
T-58	132 <sup>nd</sup> St SE (Rice – Sultan Basin Rd)	8	5,300	\$636,000	\$890,000
T-61	6 <sup>th</sup> Street (Main – Birch)	8	700	\$84,000	\$118,000
T-62	124 <sup>th</sup> Street (Sultan Basin Rd – water plant)	12 exists	0	\$0	\$0
T-65	124 <sup>th</sup> Street (water plant – Trout Farm Rd)	8	2,500	\$300,000	\$420,000
	<b>Subtotal</b>		<b>66,100</b>	<b>\$7,932,000</b>	<b>\$11,105,000</b>

Note: \* indicates some 8-inch pipe exists for part of the length required

Table 7 shows existing water mains to be replaced by 2025 that are not included in the TIP. Construction costs therefore include street patching.

**Table 7  
Water Main Replacements**

Project	Project Description	Diameter	Feet of Pipe	Construction Cost	Project Cost
R-1	307 <sup>th</sup> Street (Trout Farm Rd – 124 <sup>th</sup> )	8	1,600	\$384,000	\$538,000
R-2	along US-2 (Marcus and Old Owen)	8	1,900	\$456,000	\$638,000
R-3	along US-2 (Main St and Foundry Dr)	8	6,300	\$1,512,000	\$2,118,000
R-4	in Sultan Basin Rd and US-2	8	3,500	\$840,000	\$1,176,000
R-5	3 <sup>rd</sup> Street (Main – High St)	8	2,700	\$648,000	\$907,000
R-6	Date Street (3 <sup>rd</sup> Street – 8 <sup>th</sup> Street)	8	2,000	\$480,000	\$672,000
R-7	Sultan River Crossing	12	600	\$500,000	\$600,000
R-8	Sultan Basin Rd PRV Station	---	---	\$30,000	\$50,000
	Subtotal		18,600	\$4,850,000	\$6,699,000

Table 8 summarizes new water mains to be installed by 2025 in locations not part of the TIP for 2025. These new City water mains will be installed in existing street rights-of-way and costs include patching of the existing street but not upgrading the street to any higher standard.

**Table 8  
New Water Main Extensions**

Project	Project Description	Diameter	Feet of Pipe	Construction Cost	Project Cost
N-1	6 <sup>th</sup> /7 <sup>th</sup> Street (Alder – Date St)	8	900	\$216,000	\$302,000
N-2	8 <sup>th</sup> Street (140 <sup>th</sup> – high school loop)	8	1,200	\$288,000	\$403,000
N-3	Sultan Basin Rd to new water tank	12	10,500	\$3,150,000	\$4,410,000
N-4	Trout Farm Rd (125 <sup>th</sup> St – end)	8	1,900	\$456,000	\$638,000
N-5	SR-2 (extend to connect)	8	600	\$160,000	\$224,000
	Subtotal		15,100	\$4,270,000	\$5,977,000

A new water storage tank is needed for the northeast area to provide adequate operating pressure in the distribution system and residential fire protection. This tank will be located north along Sultan Basin Road on high ground to the east, and outside the current UGA. Tank volume will be at least 70,000 gallon. A new booster pump station may eventually be required, though the existing station may be adequate initially.

In addition to the new Northeast Tank and the water main improvements listed in Tables 6, 7, and 8 several other capital projects need to be included in the Needs Assessment as summarized below:

- New Pressure Reducing Valve Vaults (four each)

- Water System Plan Update 2014 (six years after 2008 Amendment)
- Water System Plan Update 2023
- Lake 16 Watershed Upgrades (undefined, though some improvements should be anticipated)
- Water Treatment Plant Upgrades (undefined, though added requirements can be anticipated)

Table 9 summarizes the water facilities needed by 2025 and estimated costs.

**Table 9  
Needed Water Facilities by 2025**

<b>Improvement Category</b>	<b>Quantity</b>	<b>Construction Cost</b>	<b>Project Cost</b>
Water TIP Improvements	66,100 feet	\$ 7,932,000	\$ 11,105,000
Water Main Replacements	18,600 feet	\$ 4,850,000	\$ 6,699,000
New Water Main Extensions	15,100 feet	\$ 4,270,000	\$ 5,977,000
Northeast Water Tank	70,000 gallons	\$ 200,000	\$ 500,000
NE Booster Pump Station	50 GPM x 10 HP	\$ 200,000	\$ 300,000
Pressure Reducing Stations	4 each	\$ 100,000	\$ 150,000
Water System Plan – 2014	----	----	\$ 100,000
Water System Plan – 2024	----	----	\$ 100,000
Lake 16 Watershed Upgrade	to be defined	\$ 200,000	\$ 300,000
Water Treatment Upgrade	to be defined	\$ 500,000	\$ 700,000
Total		\$ 18,252,000	\$ 25,658,000

All costs shown in the above tables are shown in 2007 dollars as none of the construction projects have been assigned an implementation date.

**Six-Year Capital Improvement Program**

In addition to the Project in Progress during 2007, the projects required during the initial six years of 2009 through 2014 are summarized in Table 10 as the capital Improvement Program (CIP).

**Table 10**  
**Six-Year Capital Improvement Program**  
Estimated Project Costs in \$ Thousands

<b>Project</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>Total</b>
Sultan Basin Rd PRV	100						100
Sultan River Crossing	25	50	425				500
Alder Street		54	400				454
East Main Street			50	200			250
132 <sup>nd</sup> Street			20	70	800		890
Rice Road				19	60	240	319
Northeast Reservoir					100	50	150
NE Reservoir Pipeline						75	75
Totals	125	104	895	289	960	365	2,738

Figures W-4 and W-5 locate the projects included in the Six-Year CIP.

Financial projections indicate that the existing City water rate structure will be adequate to generate most of the revenue needed to implement the six-year CIP, assuming that the projected growth actually occurs. Table 11 summarizes these financial assumptions.

**Table 11**  
**Six Year Water Capital Improvement Revenue**  
Estimated Revenue on \$ Thousands

<b>Projects</b>	<b>GFC</b>	<b>Grant</b>	<b>Debt</b>	<b>Contributions</b>	<b>Totals</b>
Sultan Basin Rd PRV	100				100
Sultan River Crossing	500				500
Alder Street	454				454
East Main Street	250				250
132 <sup>nd</sup> Street				890	890
Rice Road				319	319
Northeast Reservoir	150				150
NE Reservoir Pipe	75				75
Totals	1,529			1,209	2,738

It is possible that growth will not occur as projected, of course. In that case the water improvements will not be needed and the projects may be delayed until the need does exist and funding becomes available.

### **Existing Water Rates**

A progressive water rate structure has been used by the City for years. Table 12 summarizes an excerpt from the current water rates, which include 600 cubic feet (CF) in the base rate.

**Table 12**

**Current Monthly Water Rates**

<b>Customer Class</b>	<b>2007 Rate</b>	<b>2008 Rate</b>
Single Family – Base Rate	\$24.25	\$25.25
Volume Rate / 100 CF	\$2.20	\$2.28
Commercial – Base Rates		
¾-inch meter	\$26.25	\$27.25
1-inch meter	\$36.75	\$38.15
1-1/2-inch meter	\$47.25	\$49.05
Volume Rate / 100 CF	\$2.20	\$2.28

Additional rates exist for larger water meter sizes, and a discount rate is available for low-income senior citizens at about 50 percent of the regular residential rate. Water customers outside of the city limits pay a 50 percent surcharge.

The current water capital facilities charge is \$5,254 per ERU.

**Financial Implications**

The total estimated project cost for providing water service to all parcels within the GMA and the water service area to be consistent with the Comprehensive Plan is about \$22,180,000 plus and additional \$1,263,000 of work in progress for a total of \$23,443,000. Several strategic considerations are relevant to the financial implications in funding the water system improvements as outlined below:

- About \$15.48 million in water system project needs are identified as needed to support development projected through the year 2025.
- About \$7.96 million in water main replacements or work in progress has also been identified.

Basic Needs for the water utility have been defined as the improvements necessary to maintain the established level of service for existing water customers within the present city limits and water service area as summarized below:

- \$2.2 million may become available from the existing system development charge (with some adjustment for future construction)
- Most of the remaining \$1.7 million can be raised by reasonable and appropriate contributions from benefiting property owners with the remainder paid through rates by existing customers

A rate study should consider the improvements that need to be built in the near future and verify adequate funding will be available through near term rate adjustments.

Additional improvements defined as ‘Necessary for Development’ throughout the UGA over the longer term are summarized below:

- \$9.6 million is suitable for financing by property owners or developers
- Another \$1.2 million could be funded from street projects not directly dependent on developer financing instead of the water rate structure
- The remainder would be funded through water rates or increased general facilities charges

Table 13 summarizes the above described financial strategy for the water utility.

**Table 13**  
**Water System Funding Strategy**  
Finances Shown in \$ thousands

<b>Project Classes</b>	<b>GFC</b>	<b>Rates</b>	<b>Property Owners</b>	<b>Total</b>
Basic Needs				
Projects in Progress	1,263			1,263
Replace Existing Facilities		600		600
New Facilities	862		1,176	2,038
Subtotals	2,125	600	1,176	3,901
Necessary for Development				
Replace Existing Facilities	3,328	3,712		7,040
Water Main Extensions	2,451		9,642	12,093
Other Projects	1,350			1,350
Subtotals	7,129	3,712	9,642	20,483
Totals	9,254	4,312	10,818	24,384

Table 12 indicates that the revenue that may be generated by the existing water GFC rate may be adequate to fund the water main extensions and other new facilities when contributions from property owners and developers are included. However, needed replacements of existing facilities may not be adequately funded through existing rates and a rate increase may be needed.

Water main extensions and other new facilities are largely dependent on the expected developments actually occurring and on the schedule expected. Until those projections are validated by events, it is prudent for the City to adjust water rates in accordance with the CIP needs.