

City of Yelm

105 Yelm Avenue West
P.O. Box 479
Yelm, Washington 98597
(360) 458-3244

December 21, 2010

Southwest Drinking Water
Department of Health
Attn: Regina Grimm, Regional Engineer
PO Box 47823
Olympia, WA 98504-7823

RE: City of Yelm 2008 Water System Plan Amendment No. 1

Dear Regina,

Enclosed please find a *project approval application form* as well as technical memorandum prepared by Brown and Caldwell on behalf of the City of Yelm. The technical memorandum is a proposed amendment to our recently approved 2008 Water System Plan that increases the City's water rights portfolio while recognizing the City's highly successful conservation efforts over the past three years.

Please feel free to contact me at 360-458-8414 with any questions or comments as you begin the review process.

We look forward to hearing from you.

Sincerely,

Stephanie Ray
Project Manager

Cc: Ron Harding, Mayor, City of Yelm
Shelly Badger, City Administrator, City of Yelm
Grant Beck, Community Development Director, City of Yelm
Clark Halvorson, Southwest Regional Manager, Office of Drinking Water
Bonnie Waybright, Assistant Regional Manager, Office of Drinking Water
Darin Klein, Regional Planner, Office of Drinking Water
Jeff Morgan, Project Manager, Brown and Caldwell
Kate Green, Engineer, Brown and Caldwell

Water System Plan Submittal Form

This form is required to be submitted along with the Water System Plan (WSP). It will serve to expedite review and approval of your WSP. WSPs will not be reviewed until submittal form and checklist are completed.

| | | |
|----------------------------------------------------------|-----------------------------|---------------------------|
| <u>City of Yelm Water System</u> | <u>99305J</u> | <u>City of Yelm</u> |
| 1. Water System Name | 2. PWS ID# or Owner ID# | 3. System Owner Name |
| <u>Stephanie Ray</u> | <u>(360)458-8414</u> | <u>Project Manager</u> |
| 4. Contact Name for Utility | Phone Number | Title |
| <u>105 Yelm Avenue West</u> | <u>Yelm</u> | <u>WA</u> <u>98597</u> |
| Contact Address | City | State Zip |
| <u>Jeff Morgan, P.E.</u> | <u>Olympia</u> | <u>Managing Engineer</u> |
| 5. Project Engineer | Phone Number | Title |
| <u>724 Columbia Blvd NW, Suite 420</u> | <u>Olympia</u> | <u>WA</u> <u>98501</u> |
| Project Engineer Address | City | State Zip |
| <u>Same as #4</u> | | |
| 6. Billing Contact Name (required if not the same as #4) | <u>Billing Phone Number</u> | <u>Billing Fax Number</u> |
| | | |
| <u>Billing Address</u> | <u>City</u> | <u>State</u> <u>Zip</u> |

6. How many services are presently connected to the system? 3,217
7. Is the system expanding? (seeking to extend service area or increase number of approved connections) ☒ Yes ☐ No
8. If number of services is expected to increase, how many new connections are proposed in the next six years?

The current capacity of the system is 3,235 connections. The amendment documents a proposed increase in the rated system capacity to 3,619 connections. It is very likely that within six years new connections will result in the system again being at capacity. In the future, as the City secures additional water rights and/or increases the capacity of the system through the completion of CIP projects, additional increases in the number of approved connections will be proposed through further amendments to the WSP.

9. If the system is private-for-profit, is it regulated by the State Utilities and Transportation Commission? ☐ Yes ☒ No
10. Is the system located in a Critical Water Supply Service Area (i.e., have a Coordinated Water System Plan)? ☒ Yes ☐ No
11. Is the system a customer of a wholesale water purveyor? ☐ Yes ☒ No
12. Will the system be pursuing additional water rights from the State Department of Ecology in the next twenty years? ☒ Yes ☐ No
13. Is the system proposing a new intertie? ☐ Yes ☒ No
14. Do you have projects currently under review by the Department of Health? ☒ Yes ☐ No
15. Are you requesting distribution main project report and construction document submittal exception, and if so, does the WSP contain standard construction specifications for distribution mains? ☐ Yes ☒ No
16. Are you requesting distribution related project report and construction document submittal exception, and if so, does the WSP contain distribution facilities design and construction standards, including internal engineering review procedures? ☒ Yes ☐ No
17. Have you sent copies of the draft WSP or notice to adjacent purveyors for their review? ☒ Yes ☐ No
18. Have you sent copies of the draft WSP to local governments with jurisdiction within your service area for their review? ☒ Yes ☐ No
19. Are you proposing a change in the place of use of your water right? ☐ Yes ☒ No

If answer to questions 17 and 18 is yes, list adjacent utilities/entities that have received a copy of the draft WSP: Thurston County and the City of Yelm received copies of the draft WSP which was approved December 1, 2010. Copies of the draft WSP were also made available to the public, including adjacent purveyors, at Yelm City Hall, the Public Works Department, and Yelm Timberland Library. Additionally, the draft and final WSPs and this amendment have been available for download from the City's website.

Is this plan: ☒ an Initial Submittal ☐ a Revised Submittal

Please enclose the following number of copies of the WSP:

2 copies for Department of Health

1 copy for Department of Ecology

1 additional copy if you answered "yes" to question 9

3 Total copies attached

Please return completed form to the Office of Drinking Water regional office checked below.

☐ Northwest Drinking Water Operations
Department of Health
20435 72nd Ave. S, Ste 200
Kent, WA 98032-2358
(253) 395-6750

☒ Southwest Drinking Water Operations
Department of Health
PO Box 47823
Olympia, WA 98504-7823
(360) 236-3030

☐ Eastern Drinking Water Operations
Department of Health
1500 W. Fourth Ave, Suite 305
Spokane, WA 99201
(509) 456-3115

For persons with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TTY 1-800-833-6388).

DOH Form #331-397 (Revised 02/08)

724 Columbia Street NW, Suite 420
Olympia, Washington 98501
Tel: 360-943-7525
Fax: 360-943-7513

Prepared for: City of Yelm

Project Title: Yelm Water System Plan

Project No.: 134902

Subject: City of Yelm 2010 Water System Plan Amendment

Date: December 20, 2010

To: Regina Grimm, Regional Engineer, Office of Drinking Water

From: Jeff Morgan, Project Manager, Brown and Caldwell

Copy to: Shelly Badger, City Administrator, City of Yelm

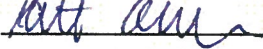
Stephanie Ray, Project Manager, City of Yelm

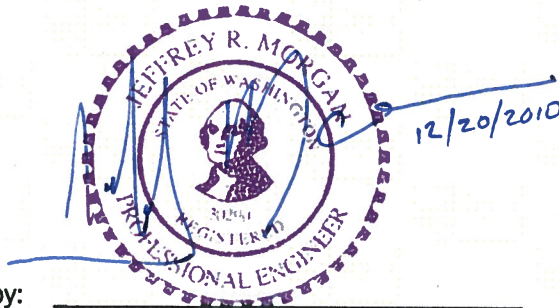
Grant Beck, Community Development Director, City of Yelm

Clark Halvorson, Southwest Region Manager

Bonnie Waybright, Assistant Regional Manager, Office of Drinking Water

Darin Klein, Regional Planner, Office of Drinking Water

Prepared by: 
Kate Green, EIT



Reviewed by: _____
Jeff Morgan, PE

Limitations:

This document was prepared solely for The City of Yelm in accordance with professional standards at the time the services were performed and in accordance with the contract between The City of Yelm and Brown and Caldwell dated 3/11/2008. This document is governed by the specific scope of work authorized by The City of Yelm; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by The City of Yelm and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

1. Introduction

In April 2010, Brown and Caldwell and the City of Yelm completed a Water Facilities Inventory (WFI) and Capacity Assessment in conjunction with the City's implementation of a water conservation program. This Capacity Assessment was submitted as a supplement to the 2010 Water System Plan (WSP). After review of the Capacity Assessment and WSP, the Department of Health (DOH) approved the WFI on May 5, 2010. The WSP was approved on December 1, 2010, with a 3,235-connection limitation. This represented an additional connection capacity of 47 equivalent residential units (ERUs), or single-family residential connections, over the 3,188 connections served by the City as of May 4, 2010. The May 5, 2010, WFI and WSP approval letter are included in Appendix A and B.

Since approval of the WFI, the City has worked to track demand and newly approved connections in order to ensure that source capacity and water rights are not exceeded. Additionally, the City has lowered the overall demand on the system through increased conservation and the acquisition of additional water rights.

This amendment to the 2010 WSP summarizes the water system demand for 2010 and connections (including approved connections that are not yet being served) as of December 1, 2010, and provides a revised analysis of the remaining capacity in the system based on data from the last three years (2008-2010). This data reflects one year in which the conservation program was in effect, and two prior years of normal system operation.

2. Existing Connections

The City has approved the following number of connections to the water system since the issuance of the WFI on May 5, 2010:

- **28 single-family residential connections.** These are projected to be equivalent to 1 ERU each.
- **0 multifamily connections.**
- **1 commercial connection.** The City evaluates the number of ERUs for each commercial building permit application on a case-by-case basis, according to the facility type and projected water use. The City has approved a permit for one additional commercial connection for Building B of the Burnett Road Business Park. This connection was determined to be equivalent to 1 ERU.

The number of connections included on the May 5, 2010 WFI are shown in Table 1, along with connections that have been approved between May 5 and December 1, 2010. Based on these numbers, the City currently has **3,217** total connections. Compared to the previous capacity limitation of 3,235 connections, the City would have the additional capacity for 18 single-family residential connections (ERUs).

Table 1. City of Yelm Existing Water Service Connections as of December 1, 2010

| Type of connection | Number of connections on previous WFI (issued 5/5/2010) | Number of connections added since 5/4/2010 | Total connections (12/1/2010) |
|-----------------------------|---------------------------------------------------------|--------------------------------------------|-------------------------------|
| Single-family | 2,285 | 28 | 2,313 |
| Multifamily units | 511 | 0 | 511 |
| Nonresidential ¹ | 392 | 1 | 393 |
| <i>Total</i> | <i>3,188</i> | <i>29</i> | <i>3,217</i> |

¹ The Non-residential connection was determined to be equivalent to 1 ERU.

3. Water Demand Analysis

The following section presents an analysis of water demand for the period of January 2008 - November 2010 and provides updated water demand projections for the full year.

3.1 Annual Water Demand

Water consumption in 2010 has decreased compared to previous years. Reasons for this decrease include rate increases adopted in March 2010, and a conservation program that was implemented in April 2010. Through the end of November, water demand totaled 679.4 acre-feet. This is approximately 77.9 acre-feet less than water used during this period in 2009. The City's water demand to date, compared to 2008 and 2009, is shown in Table 2.

Table 2. City of Yelm Water Demand, 2008- 2010

| Month | 2008 water demand (acre-ft) | 2009 water demand (acre-feet) | 2010 water demand (acre-feet) |
|--------------------------|-----------------------------|-------------------------------|-------------------------------|
| January | 48.30 | 53.40 | 50.54 |
| February | 46.86 | 50.17 | 48.68 |
| March | 51.94 | 57.24 | 59.92 |
| April | 49.82 | 55.52 | 54.80 |
| May | 60.00 | 60.03 | 54.27 |
| June | 75.86 | 98.54 | 64.75 |
| July | 103.71 | 121.04 | 83.07 |
| August | 83.22 | 96.94 | 90.43 |
| September | 77.07 | 63.25 | 58.42 |
| October | 55.73 | 50.25 | 52.87 |
| November | 43.13 | 50.90 | 61.67 |
| December | 30.66 | 55.00 | N/A ² |
| Total¹ | 756.3 | 812.30 | 679.4 |

¹ Total water use for January–November 2008 and 2009 was 695.65 and 757.28 acre-feet.

² See Section 3.4 for a projection of demand for December 2010.

3.2 Average Day and Maximum Day Demands

Historical Maximum Day Demand (MDD), Average Day Demand (ADD), and MDD:ADD peaking factors are shown in Table 3. The average peaking factor for 2008 – 2010 was 1.93. The peaking factor calculated in the 2010 WSP was 2.41 and represented the average peaking factor for 2005 - 2007.

3.3 Equivalent Residential Unit Analysis

Historical ERU values are shown in Table 4. The ERU value was calculated based on metered use for single family residential service connections which were active for the entire year. Because only 11 months of data was available for 2010, the ERU was calculated based on single family residential connections which were active from January through November.

Table 3. MDD and Peaking Factor Summary, 2008-2010

| Year | Total Annual Demand (MG) ¹ | ADD (mgd) | MDD (mgd) | MDD:ADD Peaking Factor | Date of MDD |
|------|---------------------------------------|-----------|-----------|------------------------|-------------|
| 2008 | 246.4 | 0.68 | 1.28 | 1.90 | July 16th |
| 2009 | 264.7 | 0.73 | 1.60 | 2.21 | July 30th |
| 2010 | 221.4 | 0.66 | 1.12 | 1.69 | July 27th |

¹ Represents total volume pumped from wells.

Table 4. Equivalent Residential Unit Calculations

| Year | (1) | (2) | (3) | (4) | (5) = (1*2+3*4)/(1+3) |
|------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------------------------|
| | Within City Limits (Class 1) | | Outside City Limits (Class 3) | | Equivalent Residential Unit (gpd) |
| | Number of Single Family Connections | Consumption per Single Family (gpd) | Number of Single Family Connections | Consumption per Single Family (gpd) | |
| 2008 | 1,309 | 198 | 207 | 208 | 200 |
| 2009 | 1,437 | 208 | 194 | 222 | 210 |
| 2010 | 1,532 | 176 | 195 | 176 | 176 |

The average ERU value for 2008 - 2010 was 195 gpd/ERU. This average ERU value has decreased from the 2005-2007 average of 215 gpd/ERU calculated in the 2010 WSP.

3.4 Projected Total Water Demand in 2010

Assuming that water demand in December will be equal to that of 2008 (the highest monthly production on record for December), the total projected water demand in 2010 is 740.07 acre-feet (241.2 MG). Based on the value of 195 gallons per day (gpd) per ERU developed in Section 3.3, projected demand in 2010 is equivalent to 3,384 ERUs. Figures 1 - 3 show the City's 2010 monthly and projected total annual water demand compared to historical use. These figures document the reduced water demand and lower ERU value experienced in 2010 compared to previous years.

The WSP conservatively assumed that for 2010, due to enforcement of the conservation program and monitoring of new connection approval, the City would meet, but not exceed, its previous water rights capacity of 796.66 acre-feet. Due to the success of the conservation program and rate increases implemented by the City, water use in 2010 is now estimated to be 56.59 acre-feet lower than the WSP projection for 2010.

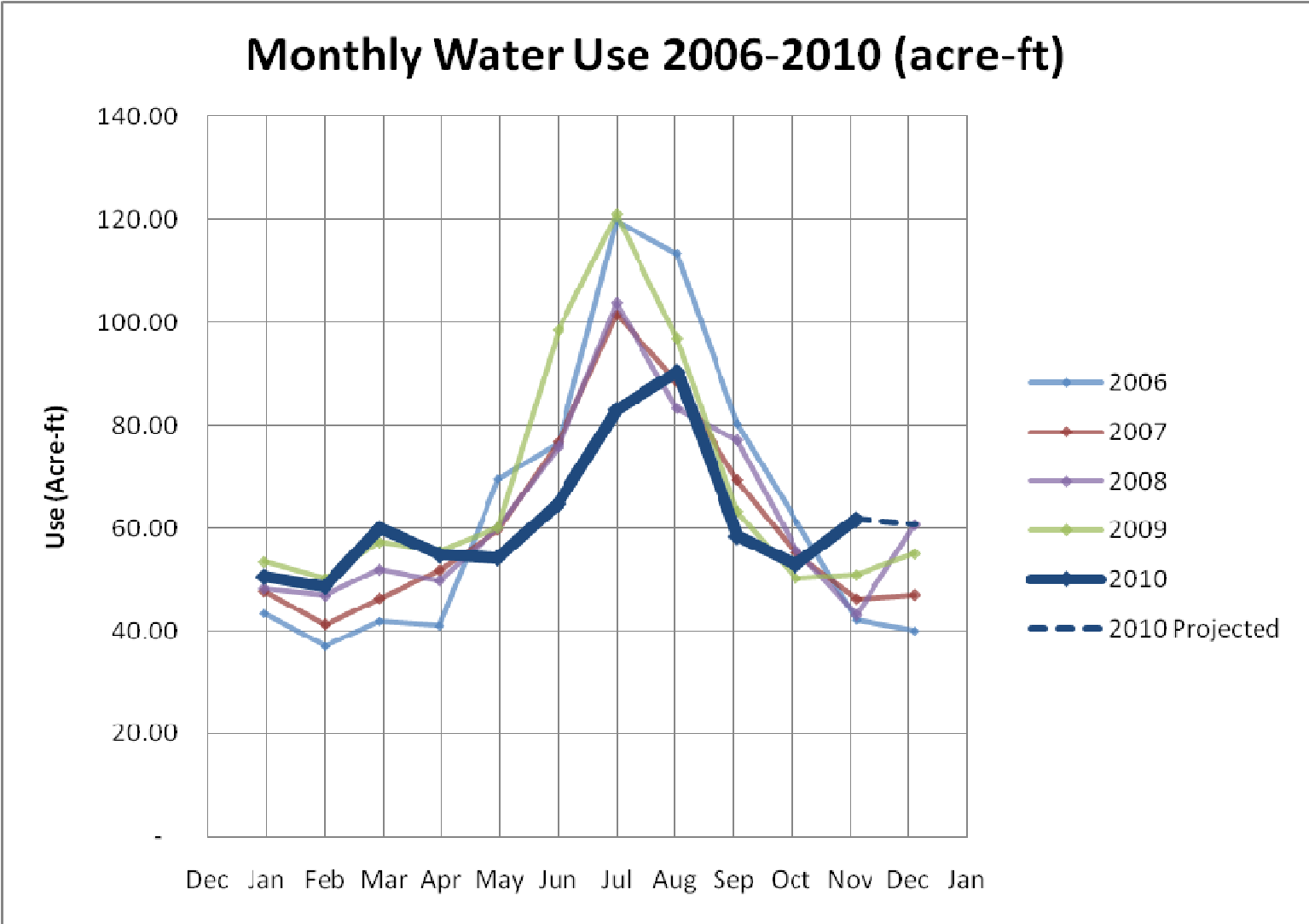


Figure 1. City of Yelm monthly water use 2006-2010

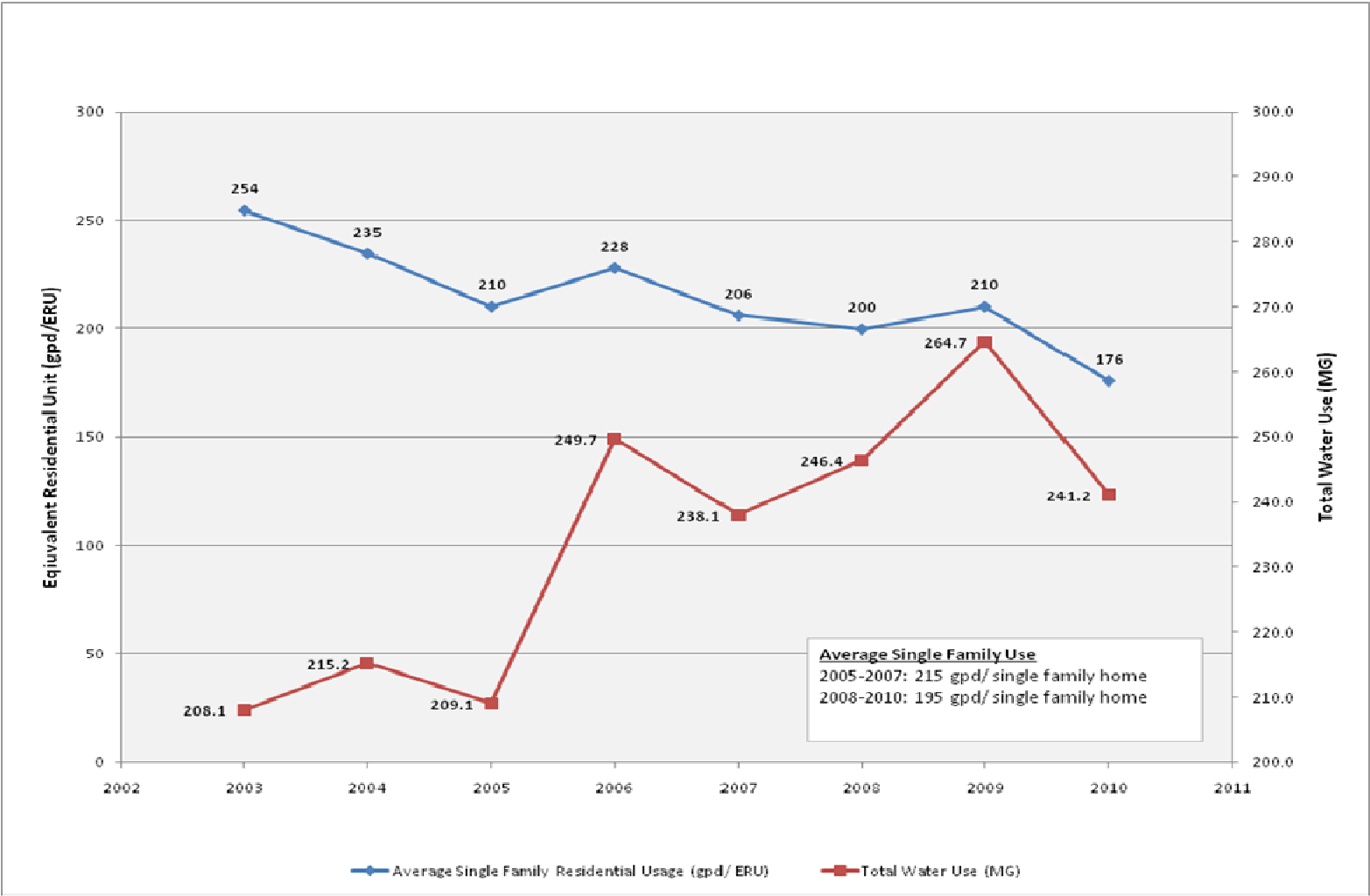


Figure 2. ERU Compared to Total Water Use, 2003 – 2010

Note: Water use for December 2010 is estimated based on December 2009 data.

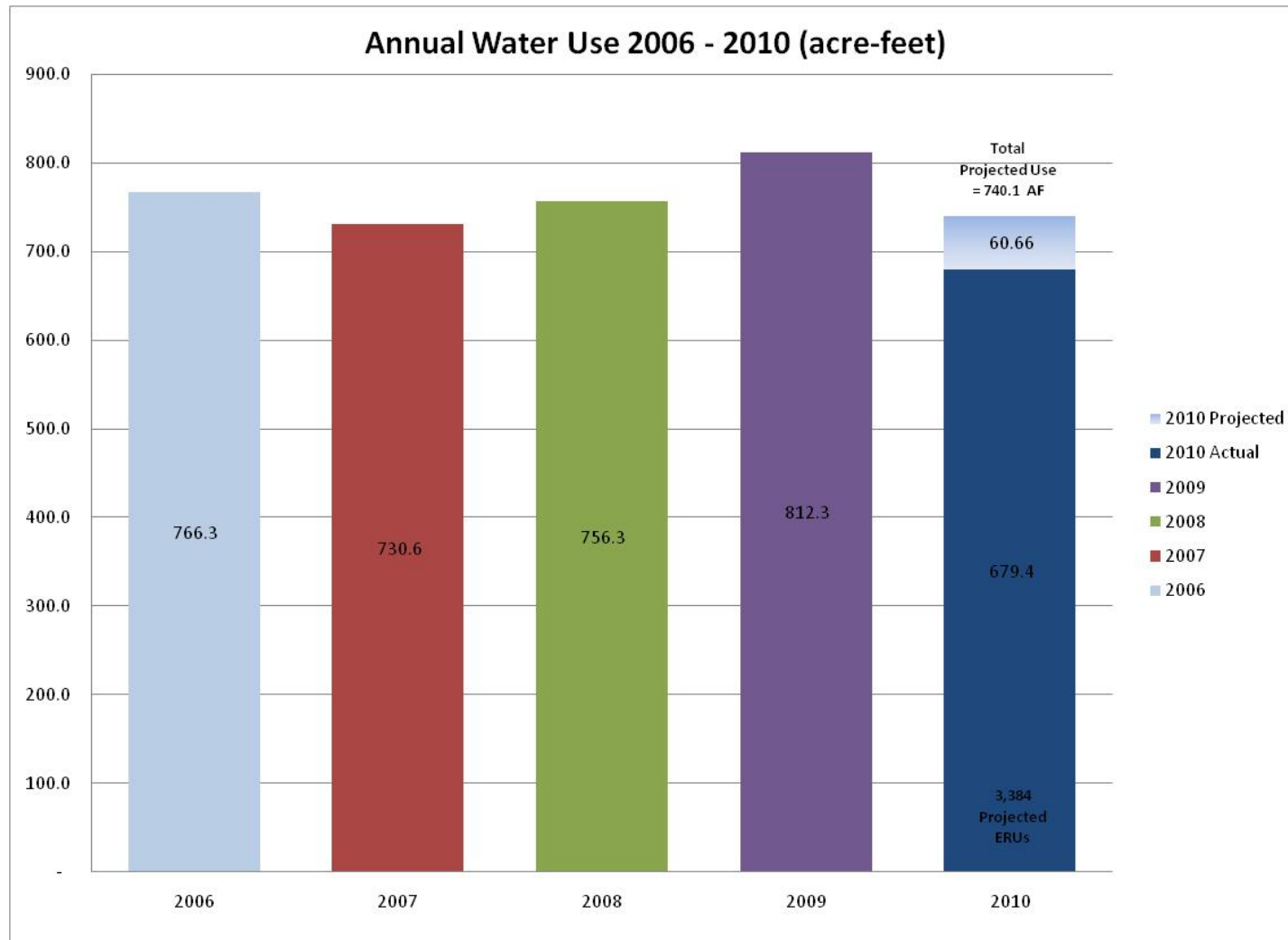


Figure 3. City of Yelm annual water use 2006–2010

Note: ERU value calculated based on 195 gpd/ERU.

4. Capacity Analysis

The following section presents a summary of the water rights capacity, source capacity, and remaining capacity of the Yelm water system.

4.1 Water Rights Capacity

At the time that the previous Capacity Assessment was submitted, the City's system was limited by water rights to a capacity of 3,308 ERUs, based on a total water rights portfolio of 796.66 acre-feet (Qa) and a value of 215 gpd/ERU. On June 25, 2010, subsequent to the preparation of the analysis and the submittal of the WSP for DOH review, the City secured 31.26 acre-feet of additional water rights, bringing the total water rights capacity in 2010 to 827.92 acre-feet. Based on the revised ERU value of 195 gpd/ERU, this equates to a water rights capacity of 3,786 ERUs. The water right certificate for the new water rights and updated Water Rights Self-Assessment (WRSA) form are included as Appendix C.

4.2 Storage Capacity

Storage requirements are based on four components: operational, equalizing, standby, and fire suppression. These requirements were calculated according to the methods presented in the 2010 WSP and were updated to reflect the revised demands, ERU value, and peaking factors documented above. Table 5 summarizes the updated calculation of storage requirement and available capacity. Based on this calculation, the City's existing storage capacity is 3,985 ERUs.

| Table 5. Storage Capacity Calculations | | | | | | | | | | | | |
|----------------------------------------------------------------------------|------------------------------|---------------------------|--------------------|------------------------|-----------------------------------------|--------------------------|-----------------------|-------------------------|------------------------------------|---------------|-------------------------|-------------------------|
| Storage Capacity Calculations, 2007-2009 (from WSP Table 3-7) ¹ | | | | | | | | | | | | |
| Year | Projected ERUs (195 gpd/ERU) | Operational Storage (gal) | Dead Storage (gal) | Peak Hour Demand (gpm) | Total Source Pumping Capacity, Qs (gpm) | Equalizing Storage (gal) | Standby Storage (gal) | Fire Flow Storage (gal) | Total Storage Req'd (nested) (gal) | Gal Req'd/ERU | Available Storage (gal) | Available Storage (ERU) |
| 2007 | 3,033 | 126,000 | 0 | | 1,200 | 96,899 | 606,681 | 360,000 | 829,581 | 273 | 1,000,000 | 3,657 |
| 2008 | 3,140 | 126,000 | 0 | | 1,200 | 106,049 | 628,092 | 360,000 | 860,141 | 274 | 1,000,000 | 3,651 |
| 2009 | 3,373 | 126,000 | 0 | | 1,200 | 126,123 | 674,581 | 360,000 | 926,704 | 275 | 1,000,000 | 3,640 |
| Storage Capacity Calculation (based on revised data) ² | | | | | | | | | | | | |
| 2010 | 3,384 | 126,000 | - | 1,509 | 1,200 | 46,302 | 676,774 | 360,000 | 849,076 | 251 | 1,000,000 | 3,985 |

¹ From Table 3-7 in the WSP. Calculated using an ERU value of 215 gpd/ERU and a peaking factor of 2.41.

² Calculated using an ERU value of 195 and a peaking factor of 1.93.

4.3 Source Capacity

Because the wells in Yelm are not currently capable of operating simultaneously, the source capacity is limited to the maximum pumping rate of 1,200 gallons per minute (gpm) that can be achieved by a single well. This equates to a capacity of 4,586 ERUs for a maximum day demand (calculated using a peaking factor of 1.93 for the ratio of maximum day demand to average day demand and an ERU value of 195 gpd/ERU). The source capacity was calculated as follows:

| | | | | | | |
|-------------------------------------------|----------|------------------|----------|-----------------------|----------|------------------------|
| Pumping capacity of existing wells | / | ERU Value | / | Peaking Factor | = | Source Capacity |
| (1,200 gpm x 1,440) | / | (195.25 gpd/ERU) | / | (1.93) | = | (4,586 ERUs) |

4.4 Remaining Capacity

Due to the combined effect of expanding water rights and lowering demand, the Yelm water system currently has the capacity for as many as 402 new single-family connections (ERUs). This was calculated as follows:

| | | | | |
|------------------------------------------------------------------------|----------|------------------------------|----------|---------------------------|
| Capacity of existing system (water rights capacity limited) | - | 2010 projected demand | = | Remaining capacity |
| (3,786 ERUs) | - | (3,384 ERUs) | = | (402 ERUs) |

Based on the results of this capacity analysis, the City proposes that the approved number of connections for the Yelm water system should be increased to 3,619 connections, which is equivalent to 3,786 ERUs. This represents an increase of 384 connections over the currently approved number of connections, and an increase of 402 connections over the number currently served ($3,217 + 402 = 3,619$ connections). As the City secures additional water rights and/or increases the capacity of the system through the completion of CIP projects, additional increases in approved connections will be proposed through additional amendments to the WSP.

Note: The WSP assumes that the conservation program will be in effect only for 2010, but gives the City the option to continue enforcing the program as necessary to remain within capacity constraints and allow for growth. The City has elected to continue to enforce the conservation program until they are able to acquire additional water rights and source capacity. Additional source capacity is anticipated to be secured by summer 2011, once the Downtown Well project is completed. At that point, the City may choose to re-evaluate the conservation program.

References

City of Yelm Water System Plan, Brown and Caldwell, June 2010.

City of Yelm 2010 Water Conservation Program Analysis, Brown and Caldwell, April 23, 2010.

Attachment A: May 05, 2010 WFI



WATER FACILITIES INVENTORY (WFI) FORM

ONE FORM PER SYSTEM

Quarter: 1
Updated: 05/05/2010
Printed: 05/05/2010
WFI Printed For: On-Demand
Submission Reason: Other

RETURN TO: Southwest Regional Office, PO Box 47823, Olympia, WA, 98504

| | | | | |
|-----------------------------|---------------------------------|-----------------------|---------------|-----------------|
| 1. SYSTEM ID NO. 99350 J | 2. SYSTEM NAME YELM, CITY OF | 3. COUNTY THURSTON | 4. GROUP A | 5. TYPE Comm |
|-----------------------------|---------------------------------|-----------------------|---------------|-----------------|

| | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| 6. PRIMARY CONTACT NAME & MAILING ADDRESS EDWARD B. SMITH [OPERATOR] 105 YELM AVE W YELM, WA 98597 STREET ADDRESS IF DIFFERENT FROM ABOVE ATTN ADDRESS 204 2ND ST SE CITY YELM STATE WA ZIP 98597 | 7. OWNER NAME & MAILING ADDRESS YELM, CITY OF TIMOTHY M. PETERSON 105 YELM AVE W YELM, WA 98597 STREET ADDRESS IF DIFFERENT FROM ABOVE ATTN ADDRESS CITY STATE ZIP | 8. Owner Number 006806 TITLE: PUBLIC WORKS DIRECT |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9. 24 HOUR PRIMARY CONTACT INFORMATION Primary Contact Daytime Phone: (360) 458-3244 Primary Contact Mobile/Cell Phone: Primary Contact Evening Phone: (360) 446-7278 Fax: (360) 458-8417 E-mail: smitty@ci.yelm.wa.us | 10. OWNER CONTACT INFORMATION Owner Daytime Phone: (360) 458-8499 Owner Mobile/Cell Phone: (360) 458-8406 Owner Evening Phone: Fax: (360) 458-8417 E-mail: timp@ci.yelm.wa.us |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

WAC 246-290-420(9) requires that water systems provide 24-hour contact information for emergencies.

11. SATELLITE MANAGEMENT AGENCY - SMA (check only one)

☒ Not applicable (Skip to #12)
☐ Owned and Managed SMA NAME: _____ SMA Number: _____
☐ Managed Only
☐ Owned Only

12. WATER SYSTEM CHARACTERISTICS (mark ALL that apply)

| | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Agricultural <input checked="" type="checkbox"/> Commercial / Business <input checked="" type="checkbox"/> Day Care <input checked="" type="checkbox"/> Food Service/Food Permit <input type="checkbox"/> 1,000 or more person event for 2 or more days per year | <input checked="" type="checkbox"/> Hospital/Clinic <input checked="" type="checkbox"/> Industrial <input checked="" type="checkbox"/> Licensed Residential Facility <input checked="" type="checkbox"/> Lodging <input checked="" type="checkbox"/> Recreational / RV Park | <input checked="" type="checkbox"/> Residential <input checked="" type="checkbox"/> School <input type="checkbox"/> Temporary Farm Worker <input checked="" type="checkbox"/> Other (church, fire station, etc.): _____ |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 13. WATER SYSTEM OWNERSHIP (mark only one) <input type="checkbox"/> Association <input checked="" type="checkbox"/> City / Town <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Investor <input type="checkbox"/> Private <input type="checkbox"/> Special District <input type="checkbox"/> State | 14. STORAGE CAPACITY (gallons) 1,000,000 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|

| 15 | 16 SOURCE NAME | 17 INTERTIE | 18 SOURCE CATEGORY | 19 USE | 20 | 21 TREATMENT | 22 DEPTH | 23 | 24 SOURCE LOCATION |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------|----------------------------------|------------------|-------------------------------------|
| Source Number | LIST UTILITY'S NAME FOR SOURCE AND WELL TAG ID NUMBER. Example: WELL #1 XYZ456 IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S NAME Example: SEATTLE | INTERTIE SYSTEM ID NUMBER | WELL WELL FIELD WELL IN A WELL FIELD SPRING SPRING FIELD SPRING IN SPRINGFIELD SEA WATER SURFACE WATER RAINNEY / INF. GALLERY OTHER | PERMANENT SEASONAL EMERGENCY SOURCE METERED NONE | CHLORINATION FILTRATION FLUORIDATION IRRADIATION (UV) OTHER | DEPTH TO FIRST OPEN INTERVAL IN FEET | CAPACITY (GALLONS PER MINUTE) | 1/4, 1/4 SECTION | SECTION NUMBER TOWNSHIP RANGE |
| S01 | WELL #1 AAA943 | | X | X | X | X | 57 | 380 | SW SW 19 17N 02E |
| S02 | WELL #2 AAA944 | | X | X | X | X | 61 | 1200 | SW SW 19 17N 02E |
| S03 | InAct 10/21/1999 WELL #3 AAA945 GWI | | X | X | X | | 40 | 500 | SW SW 20 17N 02E |
| S04 | WELL #4 3A GWI AGP800 | | X | X | X | | 40 | 400 | SW SW 20 17N 02E |
| S05 | WELL #1A ALG255 | | X | X | X | X | 57 | 1200 | SW SW 19 17N 02E |

WATER FACILITIES INVENTORY (WFI) FORM - Continued

| | | | | |
|------------------------------------|----------------------------------------|------------------------------|----------------------|------------------------|
| 1. SYSTEM ID NO. 99350 J | 2. SYSTEM NAME YELM, CITY OF | 3. COUNTY THURSTON | 4. GROUP A | 5. TYPE Comm |
|------------------------------------|----------------------------------------|------------------------------|----------------------|------------------------|

| | ACTIVE SERVICE CONNECTIONS | DOH USE ONLY! CALCULATED ACTIVE CONNECTIONS | DOH USE ONLY! APPROVED CONNECTIONS |
|---------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------|------------------------------------------|
| 25. SINGLE FAMILY RESIDENCES (How many of the following do you have?) | 0 | 2796 | 3235 |
| A. Full Time Single Family Residences (Occupied 180 days or more per year) | 2285 | | |
| B. Part Time Single Family Residences (Occupied less than 180 days per year) | 0 | | |
| 26. MULTI-FAMILY RESIDENTIAL BUILDINGS (How many of the following do you have?) | | | |
| A. Apartment Buildings, condos, duplexes, barracks, dorms | 21 | | |
| B. Full Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied more than 180 days/year | 511 | | |
| C. Part Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied less than 180 days/year | 0 | | |
| 27. NON-RESIDENTIAL CONNECTIONS (How many of the following do you have?) | | | |
| A. Recreational Services and/or Transient Accommodations (Campsites, RV sites, hotel/motel/overnight units) | 67 | 67 | 0 |
| B. Institutional, Commercial/Business, School, Day Care, Industrial Services, etc. | 325 | 325 | 0 |
| 28. TOTAL SERVICE CONNECTIONS | | 3188 | 3235 |

| |
|--------------------------------------------------------------------------------------------------------------------|
| 29. FULL-TIME RESIDENTIAL POPULATION |
| A. How many residents are served by this system 180 or more days per year? 5815 |

| 30. PART-TIME RESIDENTIAL POPULATION | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A. How many part-time residents are present each month? | | | | | | | | | | | | |
| B. How many days per month are they present? | | | | | | | | | | | | |

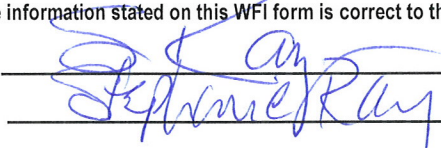
| 31. TEMPORARY & TRANSIENT USERS | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| A. How many total visitors, attendees, travelers, campers, patients or customers have access to the water system each month? | 60000 | 60000 | 60000 | 60000 | 60000 | 60000 | 60000 | 60000 | 60000 | 60000 | 60000 | 60000 |
| B. How many days per month is water accessible to the public? | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |

| 32. REGULAR NON-RESIDENTIAL USERS | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| A. If you have schools, daycares, or businesses connected to your water system, how many students daycare children and/or employees are present each month? | 3400 | 3400 | 3400 | 3400 | 3400 | 3400 | 1243 | 1243 | 3400 | 3400 | 3400 | 3400 |
| B. How many days per month are they present? | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |

| 33. ROUTINE COLIFORM SCHEDULE | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |

35. Reason for Submitting WFI:

☒ Update - Change
 ☐ Update - No Change
 ☐ Inactivate
 ☐ Re-Activate
 ☐ Name Change
 ☐ New System
 ☐ Other _____

| | |
|-----------------------------------------------------------------------------------------------------------|-------------------------------|
| 36. I certify that the information stated on this WFI form is correct to the best of my knowledge. | |
| SIGNATURE: <u></u> | DATE: <u>5/15/2010</u> |
| PRINT NAME: <u>Stephanie Ray</u> | TITLE: <u>Project Manager</u> |

Attachment B: 2010 Water System Plan Approval Letter



STATE OF WASHINGTON
DEPARTMENT OF HEALTH
SOUTHWEST DRINKING WATER REGIONAL OPERATIONS
PO Box 47823, Olympia, Washington 98504-7823
TDD Relay 1-800-833-6388

December 1, 2010

Stephanie Ray
City of Yelm
837 7th Avenue Southeast
Olympia, Washington 98589

Subject: City of Yelm Water System, ID #99350J, Thurston County; Water System Plan,
ODW Project #09-0602

Dear Stephanie Ray:

The Water System Plan Update (WSP) received by the Office of Drinking Water (ODW) on June 4, 2009, with revisions submitted on and July 7, 2010, and October 7, 2010, has been reviewed and in accordance with the provisions of WAC 246-290-100, is hereby **APPROVED**.

Approval of this WSP is valid as it relates to current standards outlined in WAC 246-290 revised November 1, 2010, WAC 246-293 revised September 1997, and RCW 70.116 (Municipal Water Law) effective September 2003 and is subject to the qualifications herein. Future changes in the rules and statutes may be more stringent and require facility modification or corrective action. An approved update of this WSP is required on or before December 1, 2016, unless ODW requests an update or plan amendment pursuant to WAC 246-290-100(9).

APPROVED NUMBER OF CONNECTIONS

This document includes an evaluation of the physical and legal (water right limitations) ability of this water system to provide water. Based on the analysis presented in this document, this water system demonstrates service capacity to adequately serve a total of 3308 ERUs. The limiting factor described in the approved water system plan is water rights (annual volume). The approval of this document establishes that this water system is able to serve a total of 3235 connections. This was determined as follows:



| | |
|-----------------------------------------------------------------------------------------------|--------------------|
| Total Water Budget (ERUs) | 3308 |
| Current Usage (ERUs) | 3288 |
| Water Available for Additional Connections (ERUs) | 20 |
| Existing Number of Connections | 3215 |
| Total Number of Service Connections if all future connections serve single-family residences: | $3215 + 20 = 3235$ |

Please note that this system is expected to permit additional new connections in a manner consistent with the information contained in the approved document. The approved number of service connections was calculated based on an assumption that each future connection will use water consistent with an average single family residence supplied by this system. Other types of new connections (multi-family housing, apartments, businesses, industry, parks) may use more or less water than an average single family residence.

This system is responsible for permitting the addition of new service connections in a manner consistent with the approved document. ODW expects this system will establish and maintain a process that recognizes all new connections added, and the water demands associated with each connection. The process must enable this system to maintain an accurate assessment of the remaining service capacity, expressed as equivalent residential units (ERU), so that physical capacity and water right limitations are not exceeded.

LOCAL GOVERNMENT CONSISTENCY

Grant Beck, Planning Supervisor for the City of Yelm, signed the local consistency statement on June 8, 2009. Scott Longanecker of Thurston County Resource Stewardship signed the local consistency statement on July 29, 2009. This meets local government consistency requirements for WSP approval pursuant to RCW 90.03.386 and RCW 43.20.

WATER RESOURCES

Enclosed please find a copy of the Department of Ecology's (Ecology) comment letter dated August 11, 2009, regarding water rights for this system. Please work with Ecology to resolve any future water rights questions. The information presented in this WSP will be considered valid as it applies to this WSP approval. Because Ecology has jurisdiction with respect to water right determinations, ODW's approval of this WSP will not provide any guarantee and should not be considered to provide any guarantee concerning legal use of water or subsequent water rights decisions by Ecology. Depending on Ecology's future actions on this system's water rights, additional planning or other submittals may be required by ODW. Questions concerning water rights or any uncertainties or discrepancies concerning water rights issues should be directed to Ecology.

SERVICE AREA AND DUTY TO SERVE

Pursuant to RCW 90.03.386 (2), the service area identified in the WSP service area map may now represent an expanded "place of use" for this system's water rights. Changes in service area should be made through a WSP amendment.

The City has a duty to provide new water service within the retail service area. This WSP includes service policies to describe how this system plans to provide new service within the retail service area.

CONSTRUCTION WAIVERS

Standard Construction Specifications for distribution main extensions were approved in this WSP. Consistent with WAC 246-290-125 (2), this system may proceed with the installation of distribution main extensions provided this system completes and keeps on file the enclosed construction completion report form in accordance with WAC 246-290-125 (2) and WAC 246-290-120 (5) and makes it available for review upon request by ODW.

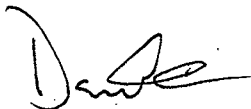
WATERSHED PLANNING

Ecology has determined this WSP is "not inconsistent" with the adopted watershed plan for WRIA 11- the Nisqually Watershed.

ODW recognizes the significant effort and resource commitment involved in the preparation of this WSP. Thank you for your cooperation.

If you have any questions, please contact Darin Klein at (360) 236-3038 or Regina Grimm at (360) 236-3035.

Sincerely,



DARIN KLEIN
Office of Drinking Water, Regional Planner



REGINA GRIMM, P.E.
Office of Drinking Water, Regional Engineer

Enclosures

cc: Thurston County Health Department
Thurston County Planning Department
Amy Nielson, Department of Ecology
Brad Brooks, ODW
Cheri Paine, ODW

Attachment C: 2010 Water Rights Self-Assessment Update

Table 4-4A

WATER SYSTEM PLAN
WATER RIGHTS SELF ASSESSMENT – 2010 UPDATED STATUS

| PERMIT CERTIFICATE OR CLAIM # | NAME ON DOCUMENT | PRIORITY DATE | SOURCE NAME/ NUMBER | ANY PORTION SUPPLEMENTAL? (If yes, explain in footnote) | EXISTING WATER RIGHTS | | EXISTING CONSUMPTION | | CURRENT WATER RIGHT STATUS (Excess/Deficiency) | |
|-----------------------------------------|---------------------|------------------|----------------------------------------|------------------------------------------------------------------|--------------------------------------------|----------------------------------|--------------------------------------------|----------------------------------|------------------------------------------------------|----------------------------------|
| | | | | | Maximum Instantaneous Flow Rate (Qi) | Maximum Annual Volume (Qa) | Maximum Instantaneous Flow Rate (Qi) | Maximum Annual Volume (Qa) | Maximum Instantaneous Flow Rate (Qi) | Maximum Annual Volume (Qa) |
| 1. GWC 4980 | City of Yelm | 4/10/50 | Downtown Wells 1 & 2 | Yes | 157 gpm ⁽²⁾ | 54.44 aft | – | – | – | – |
| 2. GWC 597 | City of Yelm | 5/24/50 | Downtown Wells 1 & 2 | No | 500 | 145 | – | – | – | – |
| 3. GWC 1581 | City of Yelm | 4/19/51 | Downtown Wells 1 & 2 | Yes | 250 ⁽²⁾ | 62.22 | – | – | – | – |
| 5. GWC 5155 | City of Yelm | 4/16/63 | Downtown Wells 1 & 2 ⁽¹⁾ | No | 380 | 77 | – | – | – | – |
| 6. GWC 5721 | City of Yelm | 12/6/66 | Downtown Wells 1 & 2 | Yes | 80 | 14.2 ⁽²⁾ | – | – | – | – |
| 7. G2-22969 | City of Yelm | 7/12/74 | Downtown Wells 1 & 2 | No | 140 | 63 | – | – | – | – |
| 8. G2-24778 | City of Yelm | 11/30/77 | Downtown Wells 1 & 2 | Yes | 100 ⁽²⁾ | 39 | – | – | – | – |
| 9. G2-26041 | City of Yelm | 12/7/81 | Downtown Wells 1 & 2 | No | 500 | 356 | – | – | – | – |
| 10. GWC 3561 | City of Yelm | 7/7/58 | Downtown Wells 1 & 2 | Yes | 700 | 112 ^{(2),(6)} | – | – | – | – |
| 11. 597- Credit for Decomm. Wells | City of Yelm | 3/08/2010 | Downtown Wells 1 & 2 | No | 0 | 31.26 | | | | |
| TOTALS | | | | | 2,300 gpm | 827.92 aft | 1,200 gpm⁽³⁾ | 723.6 aft⁽⁴⁾ | +1,100 gpm | +104.3aft⁽⁵⁾ |

⁽¹⁾ Place of use transferred from Ferguson Wells 1 and 2 in 2009

⁽²⁾ Non-additive quantity.

⁽³⁾ Instantaneous pumping at the Downtown Wellfield is currently limited to 1,200 gpm.

⁽⁴⁾ Projected demand for 2010. Developed based on water use for January through October 31, 2010 and demands in November and December of 2009.

⁽⁵⁾ In 2010, taking into account conservation savings, planned excess is 104.3 aft (827.92 – 723.6 = 104.3 aft).

⁽⁶⁾ The status of Q_a of 112 acre-feet claimed by City is disputed by Ecology. While the City is not waiving or relinquishing its claim to the identified 112 aft, this Plan does not presently rely on that quantity for its current planning efforts. Shown as a non-additive quantity, but subject to revision.

Table 4-4 (continued)
WATER SYSTEM PLAN
WATER RIGHTS SELF ASSESSMENT – EXISTING STATUS

| PENDING WATER RIGHT APPLICATION (New/Change) | NAME ON APPLICATION | DATE SUBMITTED | ANY PORTION SUPPLEMENTAL? (If yes, explain in footnote) | PENDING WATER RIGHTS | |
|----------------------------------------------------|---------------------|----------------|---------------------------------------------------------|------------------------------------------------|--------------------------------------|
| | | | | Maximum Instantaneous Flow Rate (Qi) Requested | Maximum Annual Volume (Qa) Requested |
| 2. G2-00792 (McMonigle) ⁽¹⁾ | City of Yelm | 4/18/2008 | No | 85 | 121.33 |
| 3. G2-29084 | City of Yelm | 1/10/94 | No | 1,500 | 3,000 |
| 4. G2-29085 | City of Yelm | 1/10/94 | No | 3,000 | 3,500 |
| 5. G2-29086 | City of Yelm | 1/10/94 | No | 3,000 | 3,500 |
| ⁽¹⁾ Anticipated to be approved in 2011. | | | | | |