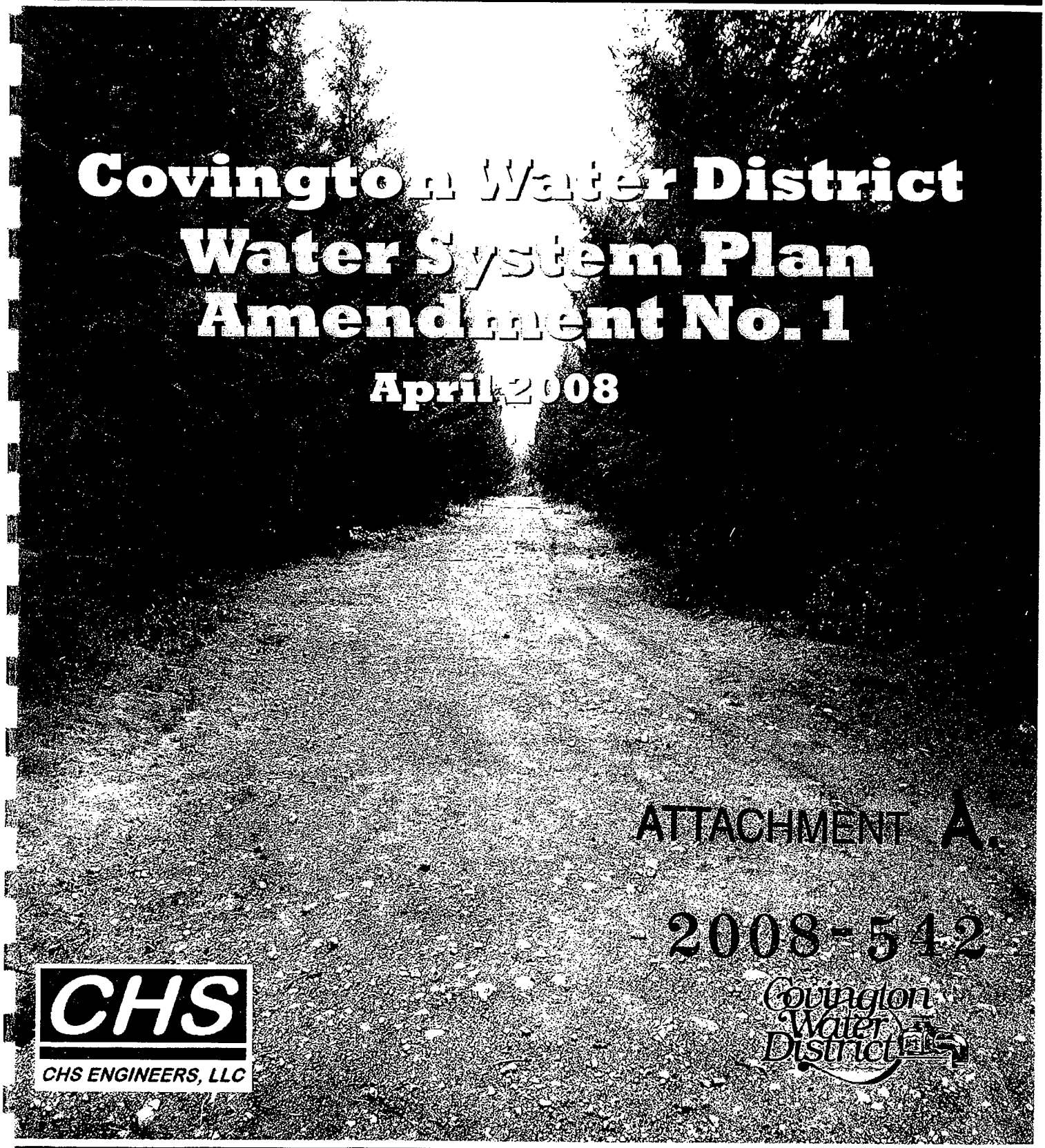
16315

Covington Water District
Water System Plan
Amendment No. 1

April 2008



ATTACHMENT A

2008-542

Covington Water District

CHS

CHS ENGINEERS, LLC

2008-542

April 16, 2008

ATTACHMENT A.

2007 COMPREHENSIVE WATER SYSTEM PLAN UPDATE

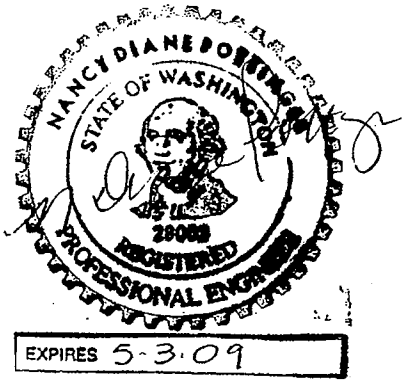
AMENDMENT No. 1

COVINGTON WATER DISTRICT

King County, Washington

April 2008

CHS Engineers, LLC



This report was prepared under the direction of a registered professional engineer.

Prepared by: N. Diane Postigo

Checked by: SC

Date: April 2, 2008

Covington Water District

2007 COMPREHENSIVE WATER SYSTEM PLAN UPDATE

Amendment No. 1

Covington Water District
18631 S.E. 300th Place
Kent, Washington 98042-9299
(253) 631-0565

COMMISSIONERS

Jeff Clark
Thomas F. de Laat
George D. (Dennis) Holden
David Knight
Jan Stafford

GENERAL MANAGER

Gwenn Maxfield

Prepared by:

CHS Engineers LLC
12507 Bel-Red Road, Suite 101
Bellevue, Washington 98005
(425) 637-3693

AMENDMENT NO. 1
TO
2007 COMPREHENSIVE WATER SYSTEM PLAN UPDATE

April 2008

This document sets forth the first amendment (Amendment) to the Covington Water District *2007 Comprehensive Water System Plan Update* (WSP) adopted on March 7, 2007 by District Resolution No. 3540. The WSP was approved by State Department of Health (DOH) on January 11, 2008, and King County Council on December 10, 2007 by King County Ordinance No. 15980.

Following adoption of the WSP, the District received a request to extend public water service to a single-family development in Section 33, Township 21 North, Range 7 East adjacent to the eastern District boundary as identified in the South King County Coordinated Water System Plan (CWSP) boundaries. The District owns and operates a satellite system south of Section 33. Because of the proximity of the area, Covington Water District is the logical water provider. The developer indicated it is their intent to request water service from the Covington Water District. The name of the proposed annexation area is Sugarloaf Mountain.

The purpose of this amendment is to update the portions of the WSP to support the District's desire to provide water service to Sugarloaf Mountain. Only those portions of the WSP that require updating or additions to the plan are included in this Amendment. The capital improvement program for this Amendment identifies the Covington Water District transmission main extension, booster station, storage facilities, and distribution main as specific projects for this developer initiated system extension.

The *2007 Comprehensive Water System Plan Update* dated February 28, 2007 and adopted on March 7, 2007 remain in full force and effect, except where modified by this *Amendment No. 1*. The District adopted *Amendment No. 1* on April 16, 2008 by District Resolution No. 3640.

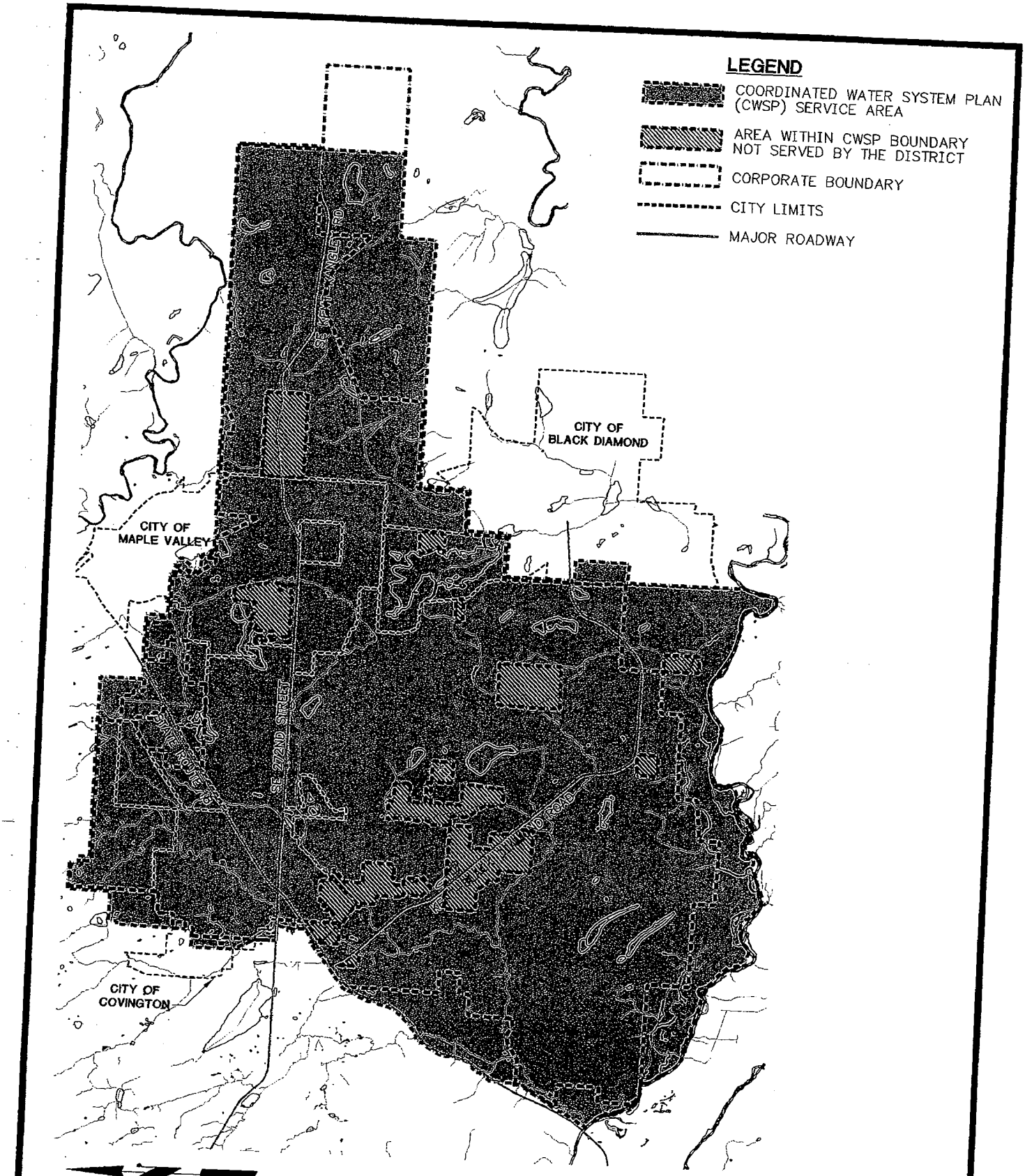
1 Introduction

Update **Whom does the District serve?**
The District is expanding its service area boundary as defined in the CWSP to include Section 33, Township 21 North, Range 07 East, Exhibit 1-1a. The District's boundary, as identified in the CWSP currently encompasses 53 square miles. The addition of Section 33 would increase the area to 54 square miles. The corner of Sections 28, 29, 32 and 33 is a contiguous point of the existing District boundary and this annexation area. Sugarloaf Mountain (Section 33) is not shown as a future service area for any water provider. The next closest water service provider, other than CWD is Cedar River Water and Sewer District, which is located over 2 miles away from the area. The District owns and operates a satellite water system in Sections 4 and 5, immediately south of Sugarloaf Mountain. Current land uses established by King County are shown for the area, along with the other areas within the District's current corporate boundary (Exhibit 1-2a). The District will be updating its franchise agreement with King County, to include this area. It is the District's intent to annex this area into its corporate boundary, under separate action.

Replace **Exhibits 1-1 with 1-1a.**

Replace **Exhibit 1-2 with 1-2a.**

Update **What are the key policies governing District operations?**
In conjunction with the 2003 Municipal Water Law, the District approved Resolution 3621 defining "Duty to Serve" and "Timely and Reasonable". A copy of this resolution is included in Appendix A. The District will be updating the District Administrative Code (DAC) later in 2008 to reflect these changes.



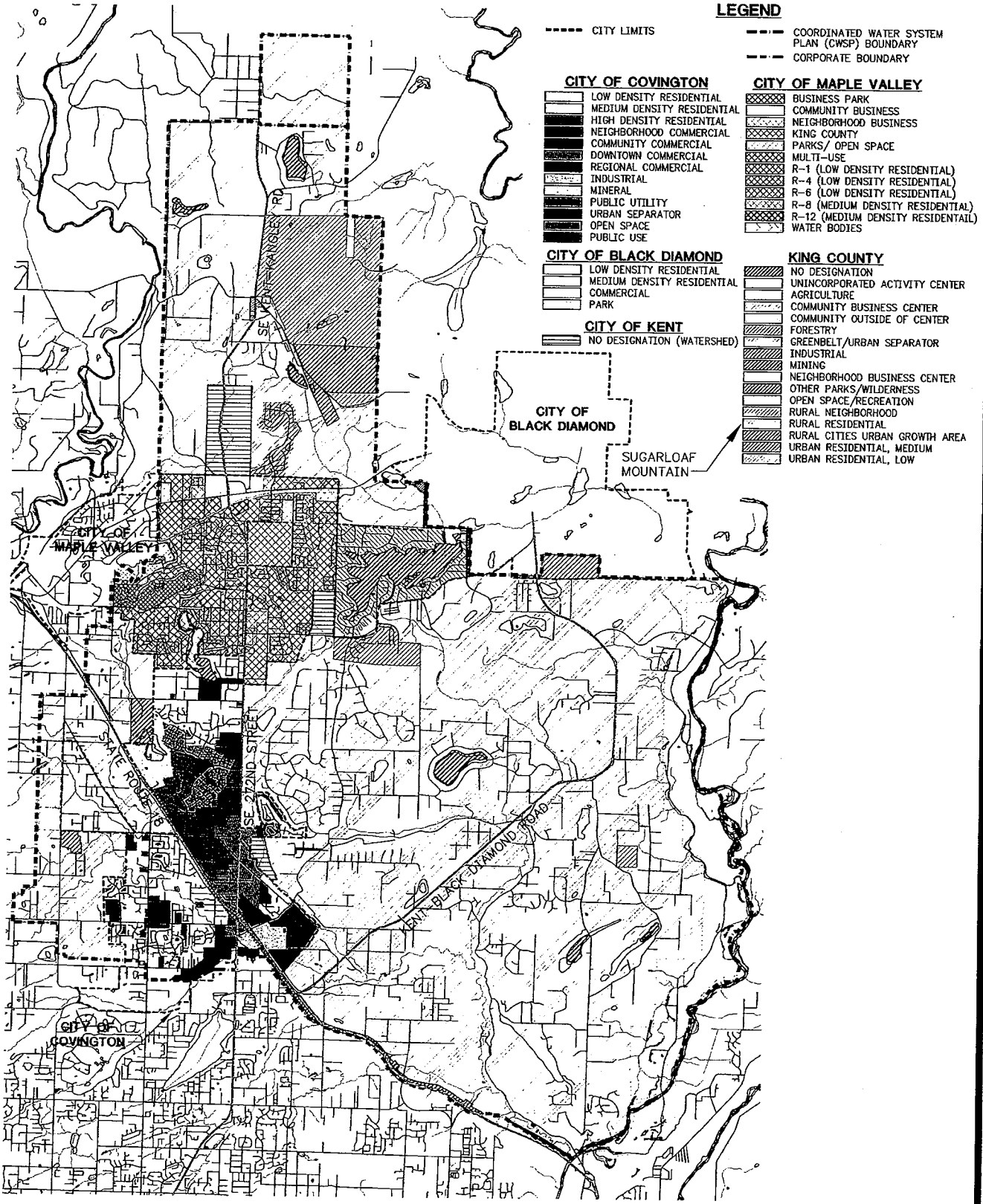
COVINGTON WATER DISTRICT
COMPREHENSIVE WATER PLAN AMENDMENT

EXHIBIT 1.1a

SERVICE AREA BOUNDARIES

APRIL 2008

CHS
CHS ENGINEERS, LLC



1"=8000'

COVINGTON WATER DISTRICT
COMPREHENSIVE WATER PLAN AMENDMENT

EXHIBIT 1.2a

LAND USE PLAN

APRIL 2008

CHS
CHS ENGINEERS, LLC

2 Basic Planning Considerations

Update **How will the District's service population change over the next 20 years?**
Potential population growth in Sugarloaf Mountain will be dependent upon when the dwelling units are constructed and sold. The current and future land use designation is shown as Rural Residential and is not expected to change. The dwelling units are expected to be cluster style in Sugarloaf Mountain.

Demographic growth is evaluated in terms of the following three categories for the Sugarloaf Mountain area: single-family households, multi-family households, and employment.

- *Single-family households.* Sugarloaf Mountain is currently 32 parcels, which are undergoing plat approval for 128 single-family residential lots. For the purposes of this plan, the first parcels are expected to be occupied in 2009 and assumed to be fully occupied within a three-year period pending approval of the 128-unit plat. The number of single-family households serviced by the District in 2025 will be approximately 23,700.
- *Multi*-family households. There is no change in the number of multi-family customers as a result of this Comprehensive Plan Amendment.
- *Employment:* There will be no change in the commercial establishments served by the District as a result of this Comprehensive Plan Amendment.

Update **Are these basic planning criteria consistent with efforts of local planning agencies?**
The District has completed the following as part of this Amendment:

1. *Comparison with documents planning data.* The District's demographic projections were compared with forecasts presented in the following land use comprehensive plans:

   - King County Comprehensive Plan (October 9, 2006)

   - King County Comprehensive Plan (Proposed 2008 Plan, dated March 1, 2008)

2. *Coordination with local planning staff.* Prior to initiating this Amendment with the District, the developer of Sugarloaf Mountain met with King County DDES planning, traffic, drainage and wetland staff.

3. *Completion of consistency determination checklists.* Updated Department of Health Water System Plan and Small Water System Management Program Consistency Statement Checklists have been forward to King County, the local planning jurisdiction. King County Council makes King County's determination of consistency by approval of this Amendment to the WSP.

Update **How much water will be needed by the District over the next 20 years?**
The water use factor for single-family households, 222 gpd, is the District's equivalent residential unit (ERU) water use. For the 128 connections (128 dwelling units and 4 common area meters to be shared equally amongst the 128 homeowners), a total of 197 additional ERUs are proposed when the area is built out (see Appendix C). The annual average day and maximum day demand forecast were developed separately for both the households and irrigation of the development. The water system demand forecast for 2005-2025 were updated for the entire District, are shown in Table 2-3a. Specific assumptions for the development are included in Appendix C of this Amendment.

Replace **Table 2-3 with 2-3a.**

Table 2-3a
Covington Water District
Water System Demand Forecast, 2005-2025 (in mgd)

Water Use Category	2005	2011	2025
Average Day Demand			
Single-Family Households	3.219	3.762	4.993
Multi-Family Households	0.028	0.037	0.071
Commercial (Non-irrigated)	0.375	0.481	0.668
Commercial (Golf Course)	0.238	0.238	0.238
Commercial (Other Irrigated)	0.116	0.148	0.206
Non-Revenue	0.515	0.585[1]	0.778[1]
Total Average Day Demand	4.491	5.270	6.972
Total Maximum Day Demand	8.847	10.480	13.833

[1]The District's distribution leakage was previously reported as 12%. The 2006 distribution leakage was 8% and the 2004-2006 average leakage was 9%.

3 System Description and Analysis

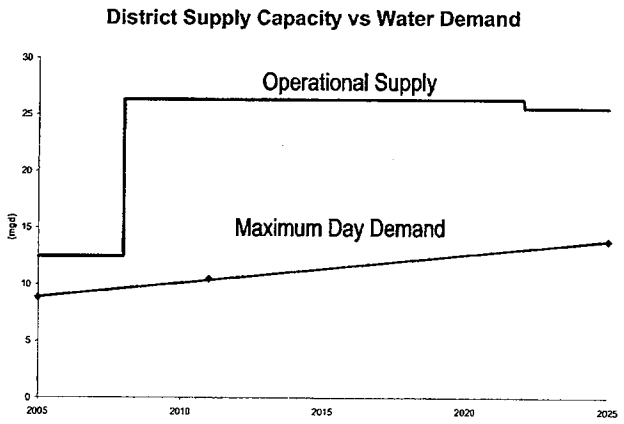
Update **Are the District's source capacities sufficient to meet present and future needs?**
Table 3-2a summarizes water requirements for the entire District system including demand of Sugarloaf Mountain. No additional water supplies are required for the District to support water demands beyond the 20-year planning horizon.

Replace **Table 3-2 with 3-2a.**

Table 3-2a
Covington Water District
Evaluation of Operational Supply Capacities (in mgd)

Source of Supply	2005	2011	2025
222nd Wellfield	4.90	4.90	4.90
Witte Wellfield	1.84	1.84	1.84
264th Street Well	0	0.37	0.37
Auburn Intertie	0.75	0.75	0
Tacoma SSP Interties	5.00	18.47	18.47
Total Supply	**12.49**	**26.33**	**26.33**
Maximum Day Demand	8.85	10.48	13.83
Supply Surplus	**3.64**	**15.85**	**12.50**

Replace graph **District Supply Capacity versus Water Demand**



Update **Are the District water rights sufficient to meet present and future needs?**
Table 3-4a identifies the District's water rights. They are adequate to meet current water demands, as well as system demands forecast beyond 2025 (see Table 3-4a).

Replace **Table 3-4 with 3-4a.**

Table 3-4a Covington Water District Evaluation of Water Rights (in mgd)			
	2005	**2011**	**2025**
Average Day Basis			
Water Rights	5.55	5.55	5.55
Auburn Intertie	1.75	1.75	0
Tacoma SSP Interties	3.46	3.46	3.46
Total Rights	**9.76**	**9.76**	**9.01**
Average Day Demand	4.49	5.31	7.01
Supply Rights Surplus	**5.27**	**4.45**	**2.00**
Maximum Day Basis			
Water Rights	8.35	8.35	8.35
Auburn Intertie	0.75	0.75	0
Tacoma SSP Interties	5.00	18.47	18.47
Total Supply Rights	**14.10**	**27.57**	**26.82**
Average Day Demand	8.85	10.48	13.83
Supply Rights Surplus	**5.25**	**17.09**	**12.99**

Update **Is the capacity of the District's storage reservoirs sufficient to support present and future needs?**

In total, existing District reservoirs provide sufficient storage volumes throughout the planning period. However, given the location and elevation of Sugarloaf Mountain development with respect to the closest reservoir (Tank #5), the District's existing storage is hydraulically unable to provide water for this development. Therefore, a new reservoir will be located within the proposed Sugarloaf Mountain development.

The required storage analysis is included in Appendix D. It is assumed the reservoir will be constructed to meet the required demand and the developer would construct a minimum 300,000-gallon tank as recommended in the hydraulic modeling analysis. A summary of the analysis displaying the available storage and storage requirements is presented in Table 3-5a.

Replace **Table 3-5 with 3-5a.**

Table 3-5a
Covington Water District
Evaluation of Storage (in MG)

	2005	2011	2025
Equalizing Capacity			
Available Storage	5.65	5.95	5.95
Required Storage	1.33	1.57	2.08
Equalizing Capacity Surplus	**4.32**	**4.38**	**3.87**
Standby/Fire Capacity			
Available Storage	22.12	22.42	22.42
Required Storage			
Standby	4.11	5.09	6.87
Fire Suppression	1.68	1.80	1.80
Equalizing	1.33	1.57	2.08
Total Required Storage	7.12	8.46	10.75
Standby/Fire Capacity Surplus	**15.00**	**13.96**	**11.67**

Update **Is the District's distribution system sufficient to support present and future needs?** The District's distribution system was analyzed with the aid of computer hydraulic modeling software. The model used by the District was updated as part of the 2007 Comprehensive Water System Plan. Three different options to provide water to Sugarloaf Mountain were evaluated. Only the option connecting approximately 16,000 feet of 12-inch transmission main along Kent-Kangley Road with a 60 gpm pump located approximately 1.2 miles east of Ravensdale was determined to be feasible. The other options require extensive operation and maintenance effort. Connection to the District's existing Sugarloaf satellite system was considered but is not a viable option for a development of this size. The Ravensdale Water Supply system was also considered; however it is only approved for 36 connections, 6 more connections than currently active. The Sugarloaf Mountain plat proposes 128 single-family residences, which is more than the Sugarloaf satellite system maximum allowance of 99 connections (identified in the District's Small Waster System Management Program for the Sugarloaf system) and the Ravensdale Water Supply of 36 connections.

The hydraulic modeling scenario was run requiring the distribution system deliver 1,000 gpm at 20 psi to all points in the development, with the condition that all fire hydrants are on looped 8-inch mains, as required in the District Design Standards. This is equivalent to fire flow demand as required by the King County Fire Marshal for parcels in unincorporated King County and the District's Fire Flow Standards (Table 3-6). The hydraulic modeling indicated that 12-inch mains would be needed on dead-end mains to meet the required fire flow demands.

4 Water Quality Regulatory Compliance

Update **Is the District in compliance with applicable water quality regulations?**
The District completed a Stage 2 Disinfection Byproducts Rule (Stage 2 DBPR) Initial Distribution System Evaluation (IDSE) standard Monitoring Plan as part of the 2007 WSP. This plan was approved on September 14, 2006 by the United States Environmental Protection Agency.

The District will update the Coliform Monitoring Plan and IDSE standard Monitoring Plan as the residences in the Sugarloaf Mountain development area become occupied.

5 Water Conservation

Update **What is the history of the District's water conservation program?**
The District's current conservation program was developed and implemented with the hiring of a fulltime Conservation Specialist in 1994. In July of 2004, the District became a member of Cascade Water Alliance (CWA) and became a part of their regional conservation program CWA. Cascade's Transition Conservation Program, developed in 2004, includes multiple measures implemented throughout the collective service areas of all eight Cascade members. Some of the regional Cascade measures replaced historic local District measures, while other regional measures augmented the District's conservation program measures.

Insert **What are the District's conservation goals?** following **What is the history of the District's water conservation program?**
The District presented conservation goals for the entire service area at the November 7, 2007 board meeting as part of their 2007 Conservation Program (Appendix E). Public comment was requested in two notices in the Covington/Maple Valley Reporter newspapers. A public forum was held at the December 5 board meeting. The following goals were adopted by Resolution No. 3615 at the January 2, 2008 board meeting.

1. Reducing the average daily SFH consumption to 195 gallons per day (gpd) or 86,000 gallons per day by the end of the 2008 – 2013 planning period.
2. Reducing the average per SFH consumption 246 gpd or 121,000 gallons per day during the peak season (June-September) by the end of the 2008 -2013 planning period.
3. Reducing leakage to 8% or less by the end of the 2008 – 2013 planning period.

Under the new Water Efficiency Rule, the District is required to report annually, to customers and the State, on the progress towards meeting its' conservation goals. It is anticipated that the progress reports will be an addition to the currently required annual Consumer Confidence Report (Water Quality Report).

The performance of the District's Water Use Efficiency Program will be evaluated annually, if not more frequently, and can be adjusted if necessary to help meet the identified goals. The evaluation will vary to some degree for different types of measures, such as hardware measures versus behavioral measures. The evaluation is anticipated to include aspects such as tracking actual activity levels compared to plan activity levels.

The District has adopted requirements for separate water meters for both domestic and irrigation uses for all new development. The developer will also be required to design the residences in the Sugarloaf Mountain area to match the current building codes, which encourage water conservation. The District has separate water rates for both domestic and irrigation uses. While it is expected the water consumption may initially be high for the irrigation use within the Sugarloaf Mountain while the plantings are new, it can be expected that as plants become established and perhaps because of the higher irrigation rates, water use may decrease.

Update **Is the District exploring water reuse?**

The District submitted a grant application to the Department of Ecology for a feasibility study relating to the siting and construction of a reclaimed water facility at the Sports Park for Amateur Recreation (SPARKS) for South King County. While this grant application was not successful, NW Parks Foundation is continuing to look at funding alternatives for a demonstration project. CWD supports the NW Parks Foundation as the alternative for potable water for bathroom pipes and landscaping. The District will also consider other water reuse opportunities as they become available in their service area.

6 – Source Protection

Insert **How is the District working with the Small Water Systems Technical Committee, Regional Water Supply Planning?** at the end of the section

Covington Water District played an active role in the regional water supply planning process, as a member of Cascade Water Alliance and a special purpose district located in King County. The following text is from Small Systems Technical Committee report entitled "*Exempt Well Locations and Purposes*". The committee was tasked to evaluate potential problems associated with very small water systems, including the use of exempt wells.

> *Concerns have been raised whether the continued drilling of new exempt wells to supply domestic and irrigation water in King County, to the possible detriment of water supply systems and other preexisting wells with nearby groundwater sources. Such wells may also affect nearby streams that provide habitat for ESA-listed fish species, and are within areas to which tribes have hunting and fishing rights. The new exempt wells could also be creating health risks to existing systems by creating possibly cross-connections to the existing systems.*
>
> *Generally, individual domestic wells and most Group B wells are exempt from having to obtain a written water right document. The presence of these wells is a particular problem for special purpose districts, which do not have land use control and cannot prohibit well drilling within their boundaries. Utilities are required to perform inspections to assure that there is total separation between such wells and the water system in order to prevent backflow into the system and possible contamination of the public water supply.*

King County Draft 2008 Comprehensive Plan, identifies policies regarding urban and rural services, facilities and utilities. Specific to the majority of the Covington Water District service area is Policy F-229, which the District supports.

> *In the Rural Area, individual private wells, Group B water systems, and Group A water systems are allowed; however, water service shall first be obtained when available from an existing Group A system, or, if such service is not available, then from an existing Group B system, before creation of a new system or use of private wells is allowed. Water service delivery within the rural area shall meet the requirements of King County Code Section 21A.28.040, and if provided by a water system, be addressed in capital facility and infrastructure portions of water system plans, as provided for in Policy F-208.*

9 – Capital Improvement Program

Update **How were system improvements identified and prioritized?**
Covington Water District presently has identified and scheduled construction of water line extensions within the District's CWSP boundaries at the expense of the District. Future construction to provide water service to the Sugarloaf Mountain area will only occur by means of developer extension contracts in accordance with established standards and policies as outlined in "Covington Water District Standards and Specifications."

Within the District's corporate boundary, there are nine areas that do not currently have water service by the District or they have not annexed to the District. These nine areas contain approximately 360 parcels that are not currently connected to the District's system. The number of parcels can be increased significantly, depending upon how the parcels are redeveloped. A separate study is ongoing identifying how to annex these areas. Providing water service to these areas will be addressed after the parcels have been included in the District's corporate boundary.

In addition to the District's High, Moderate and Low priority projects identified in the 2007 WSP, are those projects driven by growth and initiated by others. These additional projects will be paid for through a developer extension process, or formation of a utility local improvement district. Projects such as these have not been included in the District's CIP.

Update **How are improvement projects scheduled?**
Providing water supply to Sugarloaf Mountain was evaluated by looking at three different options:

- transmission main and booster pump station from the District's existing system on Kent-Kangley Road
- New groundwater well or wells on or near the project site.
- Dedicated connection to the Tacoma Secondary Supply Pipeline.

The preferred alternative will require installation of a 16,000 ft of 12-inch transmission main, a booster pump station to be located west of the intersection of Kent-Kanaskat Road and a 300,000 gallon reservoir located in the northeast corner of the annexation area. An engineering report will be prepared to determine the final design alternatives for these components of the water system to provide water to the Sugarloaf Mountain and potentially Lake Retreat area. The construction for these projects will begin in 2008, assuming King County plat approval is completed in early 2008 and the developer funds the project.

11 – Implementation

Update **Is the WSP in compliance with environmental review regulations?**
The District's Environmental Checklist and Determination of Non-Significance (DNS) for this amendment was signed on February 5, 2008. A SEPA hearing was held on February 20, 2008. Two members of the public were present at the hearing but offered no comment.

Update **What is the review and adoption process for the WSP?**
As with the 2007 WSP, the District Board of Commissioners adopted this WSP Amendment by District Resolution 3640. Copies of this WSP Amendment will be submitted to DOH and King County for review and approval.

APPENDIX A DISTRICT RESOLUTIONS AND PLAN APPROVALS

COVINGTON WATER DISTRICT
KING COUNTY, WASHINGTON
RESOLUTION NO. 3640

A Resolution adopting Amendment #1 to the Water District's 2007 Water System Plan to include a certain area to be known as Sugarloaf Mountain (Section 33, Township 22 N, Range 07 E).

WHEREAS, on March 7, 2007, by Resolution # 3540, the District approved and adopted the Water District's February 2007 Water System Plan; and

WHEREAS, on September 19, 2007, by Resolution # 3589, the District found sufficiency for the petition for Annexation of this territory to the District, and set a time and place of a public hearing; and

WHEREAS, the intent to complete a comprehensive Water System Plan Amendment and to annex the area known as Sugarloaf Mountain, Section 33 was stated and adopted on October 17, 2007, by Resolution # 3595; and

WHEREAS, the District published notice of public hearings for each action, once a week for 2 weeks preceding the hearings, and posted notice of hearings in three locations within the annexation area; and

WHEREAS, the District held said public hearings and found no reason under RCW 57.24 to stop the annexation or amending the Water System Plan; now therefore,

BE IT RESOLVED by the Board of Water Commissioners of Covington Water District that:

1. The District hereby adopts Amendment #1, dated April 16, 2008, to the Covington Water District Water System Plan.
2. This Water System Plan Amendment #1 will be submitted to the State Department of Health and King County Council for the appropriate review or approval pursuant to law.

ADOPTED at a meeting of the Board of Water Commissioners held this 16th day of April, 2008.

Covington Water District
Board of Commissioners

David R. Knight, President

George D. Holden, Secretary

Jeff Clark

Tom de Laat

Jan Stafford

COVINGTON WATER DISTRICT
RESOLUTION NO. 3621

A RESOLUTION by the Board of Water Commissioners approving the Covington Water District (District) commitment for "Duty to Serve", and criteria-definition and process-outline for the terms "Timely and Reasonable" as required of water utilities under the 2003 Municipal Water Law adopted by the Legislature of the State of Washington; and directing the commitment, definition, and outline be included in the next update of the District Administrative Code (DAC), and District Conditions and Standards for Construction (Standards and Specifications).

WHEREAS, in 2003 the Legislature of the State of Washington adopted the Municipal Water Law (MWL), RCW 43.20.260, with guidance and conditions to be followed by the water utilities of the State; and

WHEREAS, the MWL includes a requirement for "Duty to Serve" within the geographical areas each utility designates as its retail-service-area; and

WHEREAS, the District stated its commitment to serve all the properties within its retail service area, the same area as the future service area identified within the adopted South King County Coordinated Water Service Plan, either by direct service or satellite management; and

WHEREAS, the District adopted a process, included in its DAC and Standards and Specifications, whereby property owners or developers were entitled to extend the District's water system facilities; or if certain conditions were met could receive satellite management services from the District; and

WHEREAS, the MWL includes a requirement for "Timely and Reasonable" whereby each utility must define the criteria for timely, and outline a process for reasonably providing water service when requested; and

WHEREAS, the District already includes general language regarding "Timely and Reasonable" within its DAC and its Standards and Specifications; now therefore,

BE IT RESOLVED by the Board of Water Commissioners of Covington Water District that:

1. Covington Water District will meet its "Duty To Serve" under the 2003 Municipal Water Law (RCW 43.20.260) by providing direct service to all properties located within its retail service area boundaries, which is the future service area designated in the adopted South King County Coordinated Water System Plan; or

2. Covington Water District will provide satellite management services if the property meets the conditions established for this type of water service within the District Administrative Code.

3. Covington Water District defines "Timely" as 120 days (RCW 70.116.060 (3) (b), after agreement for service is reached between the District and the Applicant as follows:

    A. 120 days after "Application for Meter Installation" to serve a property that fronts an adequate existing District water main is received along with applicable rates, charges and fees outlined in the most current Rate Table for Connection Charges referenced in the District Administrative Code; or

    B. When a System Extension is required (to extend a new main or to upgrade an existing main to meet District Standards) the 120 days begins after:

        1) The Application for System Extension Agreement (SEA) are received along with all applicable rates, charges and fees outlined in the most current Rate Table for SEA's as referenced in the District Administrative Code; and after

        2) Applicant submits a water main design and plan considered by the District to be complete and ready for construction; and after

        3) Applicant has received all necessary permits and approvals for construction; and after

        4) Applicant holds a pre-construction conference at a time mutually agreeable with the District, which conference includes attendance by the appropriate representatives of the owner, developer, contractor, District and other affected utilities.

4. If the SEA Applicant is unable to complete all requirements and conditions of the SEA for District acceptance within 120 days, as defined above, the Applicant must:

   A. Make written request to the District for a time-extension, stating a new and reasonable time limit for completion of the SEA; and

   B. Hold the District harmless for the Applicant's failure to complete the SEA within the 120 days stipulated in RCW 70.116.060; and

   C. Pay an incremental fee toward the connection charges in the amount of an additional 10% of the charges to keep the application current and an additional processing fee of $150.

5. Covington Water District defines "Reasonable" service as follows:

   A. Water service is consistent with the local land use plans and development regulations; and

   B. The conditions of service and associated costs are consistent with the conditions of service described in the District's current Water System Plan, and/or contained in the most current update of the District Administrative Code; and

   C. The conditions of service and associated costs are consistent with experiences (requirements) of other applicants requesting similar service; and

   D. The rates for a SEA are based upon the District's cost of service, and the applicable rates are those in effect when the Applicant has an agreement for service with the District as defined in Section 3.

6. The Board of Water Commissioners of Covington Water District hereby direct that the above commitment for "Duty to Serve" and the criteria and process for "Timely and Reasonable" be included in the next update of the District Administrative Code and Standards and Specifications.

7. This Resolution supersedes Resolution No. 3610.

ADOPTED at a regular meeting of the Board of Water Commissioners held this 16th day of January, 2008.

Covington Water District
Board of Commissioners

David R. Knight, President

George D. Holden, Secretary

Jeff Clark

Tom de Laat

Jan Stafford

COPY

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
20435 72nd Ave. S. , Suite 200, K17-12 • Kent, Washington 98032 -2358

January 11, 2008

GWENN MAXFIELD, GENERAL MANAGER
COVINGTON WATER DISTRICT
18631 S.E. 300th Pl.
KENT WA 98042

RE: Covington Water District, ID# 41650
King County
Water System Plan – 2006, APPROVAL
Submittal # 06-0505

Dear Ms. Maxfield:

The Covington Water District (the District) water system plan (WSP), received in this office on May 8, 2006, with subsequent submittals on December 7, 2007, has been reviewed and in accordance with the provisions of WAC 246-290-100, is hereby APPROVED.

Your water system plan includes capacity information that relates the physical ability of your system to provide water with any water right limitations that might occur during the 6-year period for which the approval of this WSP is valid.

Based upon information you have supplied, it has been determined that the Covington Water District water system can support an **"unspecified"** designation for its approved number of connections. A specific number of approved connections will not be applied to your system at this time. Development within your system may occur in compliance with the schedule and information provided within your WSP. This designation may be rescinded (and replaced with a specified number of approved connections) if it is determined that the WSP is no longer representative of system activities.

Submittal of the WSP included local government consistency determinations from the City of Black Diamond and an ordinance from King County adopting the District's WSP (Ord.15980). This WSP meets local government consistency requirements for WSP approval pursuant to RCW 90.03.386, RCW 43.20.

Passage of the Municipal Water Law in 2003 created a new significance to your service area through two avenues: connection of the service area to your system's water rights and a duty to serve responsibility. Per RCW 90.03.386 (2), the service area identified in your WSP now represents your water right "place of use." Changes in your service area should be made through WSP amendment.

Per RCW 43.20.260, your system now has a duty to serve retail connections within its retail service area. This WSP has incorporated information that identifies the procedures and processes you have put into place to ensure that your system can provide timely and reasonable service within your retail service area.

Standard Construction Specifications for distribution main extensions have been approved as part of this water system plan. With this approval and consistent with WAC 246-290-125(2) the Covington Water District may elect to proceed with the installation of distribution main extensions provided that the District maintains on file completed construction completion reports (a copy of which is attached) in accordance with WAC 246-290-125 (2) and WAC 246-290-120 (5) and makes it available for review upon request by the department.

Approval of the update of this water system plan is required on or before January 10, 2014 unless the Department of Health (DOH) requests an update or plan amendment pursuant to WAC 246-290-100(9). Approval of this plan is valid as it relates to current standards outlined in Chapter 246-290 WAC, revised July 2004, Chapter 246-293 WAC, revised September 1997, Chapter 70.116 RCW, the South King County Coordinated Water System Plan, and the requirements of the Municipal Water Law (SESSHB 1338), effective September 9, 2003, and is subject to the qualifications herein. Future revisions in the rules and statutes may be more stringent and require facility modification or corrective action.

Below is the general regulatory language that applies to all water system approvals.

This approval does not provide any guarantee and should not be considered to provide any guarantee concerning legal use of water or subsequent water rights decisions by the Department of Ecology. This Department of Health approval of your WSP does not affect any uncertainties or deficiencies regarding your water rights or the resolution of those uncertainties or deficiencies. Depending on Ecology's future actions on your water rights, additional planning or other submittals may be required by the Department of Health. Questions concerning water rights should be directed to the Department of Ecology.

DOH recognizes the significant effort and resource commitment involved in the preparation of your WSP document. Thank you for your cooperation. If you have any questions or wish to check our records, please contact either of us at the numbers listed below.

Sincerely,

Richard Rodriguez
Regional Planner
Northwest Drinking Water Operations
(253) 395-6771

for Sheri Miller, PE
Regional Engineer
Northwest Drinking Water Operations
(253) 395-6764

cc: Steve Hirschey, King County UTRC
Seattle King County Health Dept.
Paul Fabiniak, Department of Ecology, NWRO
John Maxwell, HDR, Inc.

King County

KING COUNTY

1200 King County Courthouse
516 Third Avenue
Seattle, WA 98104

Signature Report

December 10, 2007

Ordinance 15980

Proposed No. 2007-0581.2 **Sponsors** Phillips

AN ORDINANCE approving the Covington Water District 2007 Water System Plan Update.

STATEMENT OF FACTS:

1. K.C.C. chapter 13.24 requires approval of comprehensive plans for water utilities as a prerequisite for granting right-of-way franchises and approval of right-of-way construction permits. Plans are required from water utilities with sources of supply, or distribution facilities, within unincorporated King County. With some exceptions, this requirement also applies to amendments to such plans.

2. RCW 43.20.260 requires that water system plans for any new industrial, commercial, or residential use are to be consistent with the requirements of any comprehensive plans or development regulations adopted under chapter 36.70A RCW or any other applicable comprehensive plan, land use plan, or development regulation adopted by a city, town, or county for the service area.

3. King County approved the Covington Water District 1994 Comprehensive Water System Plan in May 1998. It includes provisions for capital facilities to address anticipated growth within Covington's service area, improvements to its existing facilities and additional provisions for water conservation. It also includes provisions for serving two different service areas—its retail service area and its future service area.

4. The Covington water district currently provides water service in southeast King County, north of the Green river and bound to the west by the cities of Auburn and Kent. The district's corporate boundaries include approximately fifty-three square miles, and its service facilities extend into unincorporated King County and include the cities of Covington, Maple Valley and Black Diamond. The Covington water district identified its retail service area to be coincident with the "future service area" established in 1989 in the South King County Coordinated Water System Plan ("CWSP"); see the discussion of service area in subsection 7 of this statement of facts. The district currently serves fourteen thousand seven hundred nineteen residential connections and forecasts growth within the service area to over seventeen thousand seven hundred forty-six residential connections by 2011, and twenty-three thousand five hundred eighty-eight residential connections by 2025. Multifamily homes are a small segment of the population served and the district anticipates serving five hundred sixty multifamily connections by 2025.

5. The district began providing water service in 1960 and over the years, it merged with a number of smaller districts. Water is provided by ten ground water wells and interties with the cities of Tacoma and Auburn. Annual average water consumption is approximately three million eight hundred twenty thousand gallons per day with a maximum day of seven million five hundred forty thousand gallons per day. Average water use for a single family residence is two hundred twenty-two gallons per day. The district, based on Puget Sound Regional Council forecasts, estimates that growth in water demand for single family, multifamily and employment, average day demand will be five million two hundred twenty thousand gallons per day in 2011 and six million nine hundred twenty thousand gallons per day in 2025. Maximum day demand will increase to ten million two hundred ninety thousand gallons per day in 2011 and thirteen million six hundred forty thousand gallons per day in 2025. The district has adequate capacity to meet forecasted demand beyond 2025. In addition, it is investigating a number of supply alternatives to meet demand beyond then including additional wholesale water from the Cascade Water Alliance, and possibly displacement of existing nonpotable supply use by use of reclaimed water in conjunction with King County.

6. The district's plan identifies thirty-four million five hundred thousand dollars in water system improvements to be completed in the next six years and an additional fourteen million five hundred thousand dollars between 2013 and 2025. The financing plan calls for the majority of cost

to be allocated to future customers as the projects primarily address growth-related issues. Utility sales and service fees along with connection charges provide the bulk of the revenue for the district.

7. The Covington water district's service area or areas include a corporate boundary, a retail service area, and a future service area. The future service area was approved as part of the South King County CWSP adopted in 1989. A retail service area as defined by the Washington state Department of Health ("DOH") under the 2003 Municipal Water Law was not described and demarcated on a map in the water system plan. By working with the Covington water district they have described their retail service area to be the same as the boundary described in the CWSP for their future service area. The plan proposes no boundary changes at this time. The Covington water district states in its plan that it could, but is not able to provide water to numerous areas within the external boundary of the water district due to the fourteen existing Class A public water systems and over one hundred-thirty Class B public water systems already providing water service within their own service areas. Within its service area, the district intends to continue supplying water and service to two wholesale systems, which are Sugarloaf and Ravensdale, that are current customers. The district also states that it intends to be a satellite management agency, as authorized under the Public Water System Coordination Act, to provide service, such as via ownership/operation of new small systems, within the remainder of its designated future service

area. The provision of satellite management services is consistent with the King County Comprehensive Plan and CWSP.

8. Covington agreed to supplement the draft plan with information to describe in more detail how it intends to provide "timely and reasonable" service within its proposed retail service area, as required by State law. In general, the district understands "timely" to mean provision of service within 120 days after an agreement for service is reached. With regard to the "reasonable" element of the clause the district views this to mean service is reasonable if:

A. A condition of service is consistency with local land use plans and development regulations;

B. The conditions of service and associated costs are consistent with the conditions of service described in the plan; and

C. The conditions of service and associated costs are consistent with experiences of other applicants requesting similar service.

This language is a reasonable interpretation of the law's requirement. The Covington water district has agreed to amend its administrative code within one year to reflect the criteria by which timely and reasonable service will be provided. The supplemental information on provision of water in a timely and reasonable manner is a condition of the ordinance to ensure public access to the information.

9. Covington water district has acknowledged there may be opportunities for the use of reclaimed water—particularly with regard to irrigation of

numerous golf courses, parks and schools. A water reuse feasibility study was completed in 2006. Covington water district is in the process of developing a reclaimed water program and working with King County on the use of reclaimed water.

10. The water system comprehensive plan, as amended and supplemented, has been determined by the Utilities Technical Review Committee (UTRC) to be substantially consistent with the requirements of the King County Code, and the King County Comprehensive Plan, as documented by the checklist provided by the executive with the transmittal letter.

11. Under the state Environmental Policy Act, Covington water district reviewed the draft Comprehensive Water Supply Plan, completed a checklist, and issued a Determination of Nonsignificance on April 7, 2006.

12. DOH has not yet approved the Covington water district plan. DOH indicated that Covington water district has provided adequate responses to their comments, and DOH will approve the Covington water district plan on receipt of the King County approval ordinance, and may approve the plan before the final King County approval, conditioned on the receipt of the King County approval.

BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

SECTION 1. The Covington water district 2007 Water System Plan Update, Attachment A to this ordinance, is hereby approved as a comprehensive water system plan with conditions.

With regard to the provision of timely and reasonable service, the district's retail service area shall be the same as the CWSP boundary as defined in the plan. A service is found to be timely and reasonable if, among other factors:

A. Provision of service is done within one hundred twenty days after an agreement for service is reached.

B. A condition of service is consistency with local land use plans and development regulations.

C. The conditions of service and associated costs are consistent with experiences of other applicants requesting similar service.

D. The conditions of service and associated costs are consistent with experiences of other applicants requesting similar service.

The district shall provide King County utilities technical review committee with a

copy of the District Administrative Code after it has been revised and updated to reflect the supplemental information provided on the timely and reasonable service criteria.

Ordinance 15980 was introduced on 11/5/2007 and passed by the Metropolitan King County Council on 12/10/2007, by the following vote:

Yes: 8 - Mr. Gossett, Ms. Patterson, Ms. Lambert, Mr. von Reichbauer, Mr. Dunn, Mr. Ferguson, Mr. Phillips and Mr. Constantine
No: 0
Excused: 1 - Ms. Hague

KING COUNTY COUNCIL
KING COUNTY, WASHINGTON

Larry Gossett, Chair

ATTEST:

Anne Noris, Clerk of the Council

APPROVED this 20 day of DECEMBER 2007.

Ron Sims, County Executive

Attachments Covington Water District--Water System Plan Update--February 2007

RECEIVED
2007 DEC 20 PM 3:08
CLERK
KING COUNTY COUNCIL

COVINGTON WATER DISTRICT
RESOLUTION NO. 3540

A RESOLUTION approving the February 2007 Covington Water District Water System Plan.

WHEREAS, water utilities in the State of Washington are required under the Department of Health (DOH) regulations contained in Chapter 246-290 of the Washington Administrative Code to prepare updates to their Water System Plans (WSP); and

WHEREAS, CWD contracted with EES-HDR to prepare this update to its WSP; and

WHEREAS, Covington Water District (CWD) wished to prepare a WSP that was less cumbersome and more easily read to enable the State Agencies and the public to find needed information; and

WHEREAS, CWD wished to prepare a WSP with the level of information required by DOH, but be responsible under the current needs for heightened security, thus not include unnecessary detail about locations, types and operations of water facilities that provide a vital service to the public; and

WHEREAS, CWD and EES-HDR consulted with the DOH regarding the District's desire to utilize a different approach for preparation of the WSP that provided the necessary information, was easier to read, but without compromising the water system security; and

WHEREAS, the Draft WSP was approved by the Board of Commissioners on December 21, 2005 by Resolution No. 3440, and thereafter provided to King County and DOH for comment about whether this new approach met their needs for information as well as compliance with their agency's requirements; and

WHEREAS, DOH and King County have provided comments and requested changes, which modifications EES-HDR has included in the February 2007 WSP; and

WHEREAS, the February 2007 WSP is ready for approval by the Board of Commissioners, now therefore,

BE IT RESOLVED that the Board of Commissioners of the Covington Water District hereby approves the February 2007 Water System Plan as prepared by EES-HDR.

BE IT FURTHER RESOLVED that this Water System Plan will be submitted to the State Department of Health and King County Council for their approvals pursuant to law.

ADOPTED at a regular meeting of the Board of Water Commissioners of Covington Water District held on the 7th day of March 2007.

President

Secretary

Commissioners

COPY

APPENDIX B DETERMINATION OF NON-SIGNIFICANCE AND SEPA CHE

Covington Water District

SEPA DETERMINATION OF NONSIGNIFICANCE

RCW 197-11-970 Determination of Nonsignificance (DNS).

Name of proposed project:

Covington Water District Water System Plan Amendment – February 2008 (Amendment).

Description of proposal:

Water System Plan Amendment for the Covington Water District's public water system to include Section 33, adjacent to the District's Coordinated Water System Plan boundary.

Proponent: **Covington Water District**

Location of proposal, including street address, if any:

The District's water system service area is located in Section 33, Township 22 North, Range 7 East which is east of the City of Maple Valley and Lake Retreat.

Lead agency: **Covington Water District**

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

This DNS is issued under 197-11-340(2); the lead agency will not act on this proposal for 15 days from the date below. Comments must be submitted by **February 20, 2008.**

Responsible official: **Gwenn Maxfield**
Position/title: **General Manager**
Phone: **(253) 631-0565**
Address: **18631 SE 300th Place, Kent, WA 98042**

You may appeal this determination within 30 days to **George D. (Dennis) Holden, Secretary of the Board of Commissioners,** at the Covington Water District office no later than **March 21, 2008.**

You should be prepared to make specific factual objections. Contact **Gwenn Maxfield** to ask about the procedures
for SEPA appeals.

Signature: _____

Date: February 5, 2008

King County
Department of Development and Environmental Services
900 Oakesdale Avenue Southwest
Renton, WA 98057-5212
206-296-6600 TTY 206-296-7217

STATE ENVIRONMENTAL POLICY ACT (SEPA) CHECKLIST

For alternate formats, call 206-296-6600.

A. Background

1. Name of the proposed project, if applicable:

   Covington Water District Water System Plan Update - January 2008 (Amendment)

2. Name of applicant:

   Covington Water District (District)

3. Address and phone number of applicant and contact person:

   Ms. Gwenn Maxfield
   General Manager
   Covington Water District
   186331 SE 300th Place
   Kent, WA 98042
   (253) 631-0565, ext. 167

4. Date checklist prepared: **January 2008**

5. Agency requesting checklist: **Washington State Department of Health (DOH)**

6. Proposed timing or schedule (including phasing, if applicable):

   Approval of the Amendment by DOH in 2008. Implementation of further project actions identified in the Amendment 2008-2010.

7. Do you have any plans for future additions, expansion or further activity related to or connected with this proposal? **X** Yes ☐ No If yes, explain.

   Yes. The Amendment is a prelude to proposed construction of a water transmission and distribution mains, storage reservoir and booster pump station to provide water service to a new service area to the District.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

   No additional information has been prepared specific to this Amendment. A wetland survey has been completed and a wildlife survey will be completed as part of the future plat approval process.

9. Do you know whether applications are pending for government approvals of other proposals directly affecting the property covered by your proposal? **X** Yes ☐ No If yes, explain.

   A short plat approval process may affect the District's water service area projects. No changes are expected due to zoning.

10. List any government approvals or permits that will be needed for your proposal, if known.

    a. Determination of Consistency with Planning Assumptions by King County.
    b. Approval of the Plan Amendment by Covington Water District Board of Commissioners.
    c. Approval of the Plan Amendment by the Washington State Department of Health.

11. Give brief complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

    Water System Plan Amendment to include Section 33 into the Covington Water District's public water system. The Amendment is specific to a 640 acre area, to be included in Coordinated Water System Plan boundaries. A total of 132 service connections will be supplied water from Covington Water District. The Amendment was developed to meet the requirements of WAC 246-290 and provide comprehensive planning to meet the future water needs for the new area to be served by the District.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site or sites. Provide a legal description, site plan, vicinity map and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications to this checklist.

    The District's future water system service area (Section 33) is located in southeast King County, Washington. See Exhibit 1-1a in the Amendment and attached.

To be completed by applicant	Evaluation for Agency Use Only

B. Environmental elements

1. Earth

a. General description of the site (check one)

- ☐ Flat
- ☐ Rolling
- X Hilly
- X Steep slopes
- ☐ Mountainous
- ☐ Other: _____

b. What is the steepest slope on the site (approximate percent of slope)?

40%

c. What general types of soil are found on the site (i.e., clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

Barneston and Chuckanut loam

d. Are there surface indications or history of unstable soils in the immediate vicinity? ☐ Yes X No If so, describe.

e. Describe the purpose, type and approximate quantities of any filling or grading proposed. Indicate source of fill.

N/A – Plan Amendment

f. Could erosion occur as a result of clearing, construction or use?
X Yes ☐ No If so, generally describe.

Proper construction practices should minimize erosion and be address by other proposed actions.

g. About what percent of the site will be covered with impervious surfaces after project construction (i.e., asphalt or buildings)?

N/A – Plan Amendment.

h. Proposed measures to reduce or control erosion or other impacts to the earth, if any:

N/A – Plan Amendment.

To be completed by applicant	Evaluation for Agency Use Only

4. Plants

a. Check or circle types of vegetation found on the site:

- X Deciduous tree: alder, maple, aspen, other
- X Evergreen tree: fir, cedar, pine, other
- ☐ Shrubs
- ☐ Grass
- ☐ Pasture
- ☐ Crop or grain
- X Wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- X Water plants: water lily, eelgrass, milfoil, other
- X Other **A detailed wetland survey of the area will be completed as part of the plat approval process.**

b. What kind and amount of vegetation will be removed or altered?

N/A – Plan Amendment.

c. List threatened or endangered species known to be on or near the site.

None.

d. Proposed landscaping, use of native plants or other measures to preserve or enhance vegetation on the site, if any:

Will be included in future booster station and reservoir projects.

5. Animals

a. Check or circle any birds and animals which have been observed on or near the site:

- X Birds: hawk, heron, ***eagle, songbirds,*** other
- X Mammals: ***deer,*** bear, elk, beaver, other
- ☐ Fish: bass, salmon, trout, herring, shellfish, other

b. List any threatened or endangered species known to be on or near the site.

None.

c. Is the site part of a migration route? ☐ Yes X No If so, explain.

d. Proposed measures to preserve or enhance wildlife, if any:

N/A – Plan Amendment. Will be considered during the design of the future booster pump station and reservoir.

To be completed by applicant	Evaluation for Agency Use Only

6. Energy and natural resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

N/A – Plan Amendment.

b. Would your project affect the potential use of solar energy by adjacent properties? ☐ Yes **X** No If so, generally describe.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

N/A – Plan Amendment.

7. Environmental health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill or hazardous waste that could occur as a result of this proposal? ☐ Yes **X** No
If so, describe.

N/A for Plan Amendment.

1. Describe special emergency services that might be required.

None are anticipated.

2. Proposed measures to reduce or control environmental health hazards, if any:

None.

b. Noise

1. What types of noise exist in the area which may affect your project (i.e., traffic, equipment, operation, other)?

Nothing unnatural.

2. What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (i.e., traffic, equipment, operation, other)?

Short-term noise during construction from construction activities and long-term background noise from future water booster station pumps and generator.

To be completed by applicant	Evaluation for Agency Use Only

3. Proposed measures to reduce or control noise impacts, if any:

N/A – Plan Amendment. Generator housing will be will rated to dampen noise, with block enclosure.

8. Land and shoreline use

a. What is the current use of the site and adjacent properties?

There are 32 lots with no existing structures onsite.

b. Has the site been used for agriculture? ☐ Yes **X** No
If so, describe.

c. Describe any structures on the site.

Bonneville Power has electrical lines extend from the east to the south through Section 33. The power line easement is approximately 565 feet wide.

d. Will any structures be demolished? ☐ Yes **X** No If so, what?

e. What is the current zoning classification of the site?

RA-5, one dwelling unit per 5 acres.

f. What is the current Comprehensive Plan designation of the site?

Rural Residential.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable.

h. Has any part of the site been classified as an "environmentally sensitive" area? **X** Yes ☐ No Is so, specify.

Yes. An area has been identified along the eastern boundary to have erosion potential and coal mining. This area will be left undisturbed. Smaller areas have been identified as having erosion potential along the southern and western portion of the annexation area. Four wetland areas, the largest being 3 acres and classified as a category II, are located in Section 33. Much of Section 33 is medium or highly susceptible to groundwater contamination.

To be completed by applicant	Evaluation for Agency Use Only

i. Approximately how many people would reside or work in the completed project?

N/A – Plan Amendment.

j. Proposed measures to avoid or reduce displacement impacts, if any:

None.

k. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The Amendment is being reviewed by King County to ensure consistency with applicable comprehensive plans, and land use plans.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle or low-income housing.

The Plan Amendment action includes no residential structures.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

N/A

10. Aesthetics

a. What is the tallest height of any proposed structure or structures, not including antennas? What is the principal exterior building material or materials proposed?

None proposed as part of Plan Amendment.

b. What views in the immediate vicinity would be altered or obstructed?

None.

c. Proposed measures to reduce or control aesthetic impacts, if any:

N/A – Plan Amendment.

11. Light and glare

a. What type of light and glare will the proposal produce? What time of day would it mainly occur?

Unknown at this time.

b. Could light or glare from the finished project be a safety hazard or interfere with views? ☐ Yes **X** No If yes, explain:

To be completed by applicant	Evaluation for Agency Use Only

c. What existing off-site sources of light or glare may affect your proposal?

Does Not Apply.

d. Proposed measures to reduce or control light and glare impacts, if any:

Impacts from light and glare will be considered during the design of the steel reservoir.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Sugarloaf Mountain Forest, designated as parkland by King County, is in the section east of Section 33.

b. Would the proposed project displace any existing recreational uses?
☐ Yes X No If so, describe.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, in any:

N/A

13. Historic and cultural preservation

a. Are there any places or objects listed on, or proposed for, the national state or local preservation registers known to be on or next to the site?
☐ Yes X No If so, generally describe.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific or cultural importance known to be on or next to the site.

None.

c. Proposed measures to reduce or control impacts, if any:

None.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Major public streets and highways are shown on Exhibit 1-1a attached. Access to the proposed plat road will intersect with existing Kent-Kangley road.

To be completed by applicant	Evaluation for Agency Use Only

b. Is the site currently served by public transit? ☐ Yes **X** No
If not, what is the approximate distance to the nearest transit stop?

Closest transit stop is at the intersection of Maple Valley Black Diamond Road, which is over 4 miles from the Plan Amendment area.

c. How many parking spaces would the completed project have? How many would the project eliminate?

Does not Apply.

d. Will the proposal require any new roads or streets or improvements to existing roads or streets, not including driveways? **X** Yes ☐ No
If so, generally describe (indicate whether public or private).

N/A – Plan Amendment.

e. Will the project use (or occur in the immediate vicinity of) water, rail or air transportation? ☐ Yes **X** No If so, generally describe.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

N/A – Plan Amendment.

g. Proposed measures to reduce or control transportation impacts, in any:

None are anticipated as part of this Plan Amendment.

15. Public services

a. Would the project result in an increased need for public services (i.e., fire protection, police protection, health care, schools, other)?
☐ Yes **X** No If so, generally describe.

Not directly. A booster pump station and steel reservoir will not cause the need for public services to increase.

b. Proposed measures to reduce or control direct impacts on public services, if any:

None needed.

To be completed by applicant	Evaluation for Agency Use Only

16. Utilities

a. Check utilities currently available at the site:

- ☐ Electricity
- ☐ Natural gas
- ☐ Water
- ☐ Refuse service
- ☐ Telephone
- ☐ Sanitary sewer
- ☐ Septic system
- ☐ Other:

None.

b. Describe the utilities that are proposed for the project, the utility providing the service and the general construction activities on the site or in the immediate vicinity which might be needed.

An 11,000 ft-12" diameter water transmission main, booster pump station and 300,000-gallon steel reservoir are proposed to follow this Comprehensive Water System Plan Amendment. Water distribution mains will be constructed as part of the plat development and site work, prior to actual construction of residences. Covington Water District will be the water provider for Section 33.

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

M. Diane Lottinger
Signature

2/5/08
Date submitted

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(Do not use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

   Water service alone does not cause any of the mentioned situations. Some minor temporary impacts may occur during construction.

   Proposed measures to avoid or reduce such increases are:

   Proper construction practices will avoid or reduce temporary construction impacts.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

   The projects proposed in this Amendment are not anticipated to affect plants, animals, fish, or marine life. Measures for protection or conservation will be considered during project design.

   Proposed measures to protect or conserve plants, animals, fish, or marine life are:

   Eventual development will "cluster" homes to avoid disruption of natural features. Design decisions and construction procedures will follow all proper procedures and practices to minimize impacts on plants, animals, fish, and marine life.

3. How would the proposal be likely to deplete energy or natural resources?

   Energy will be used to construct new facilities and operate equipment after facilities are constructed. There will be an increase in water consumption as a result of growth anticipated to take place in future actions.

   Proposed measures to protect or conserve energy and natural resources are:

   Appropriate reviews, approvals, and permits will be obtained before planned construction projects so as to protect and conserve energy and natural resources. The Amendment includes a water conservation plan identifying activities currently being implemented by the District. Energy-efficient equipment will be considered wherever possible.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

   No such effects are anticipated. Clustering of homes will limit disturbances in or near sensitive areas.

   Proposed measures to protect such resources or to avoid or reduce impacts are:

   All regulations concerning sensitive or protected areas will be followed during implementation of the transmission main, booster pump station and reservoir described in the Plan Amendment, as well as the subsequent land development.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

No such effects are anticipated.

Proposed measures to avoid or reduce shoreline and land use impacts are:

None

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

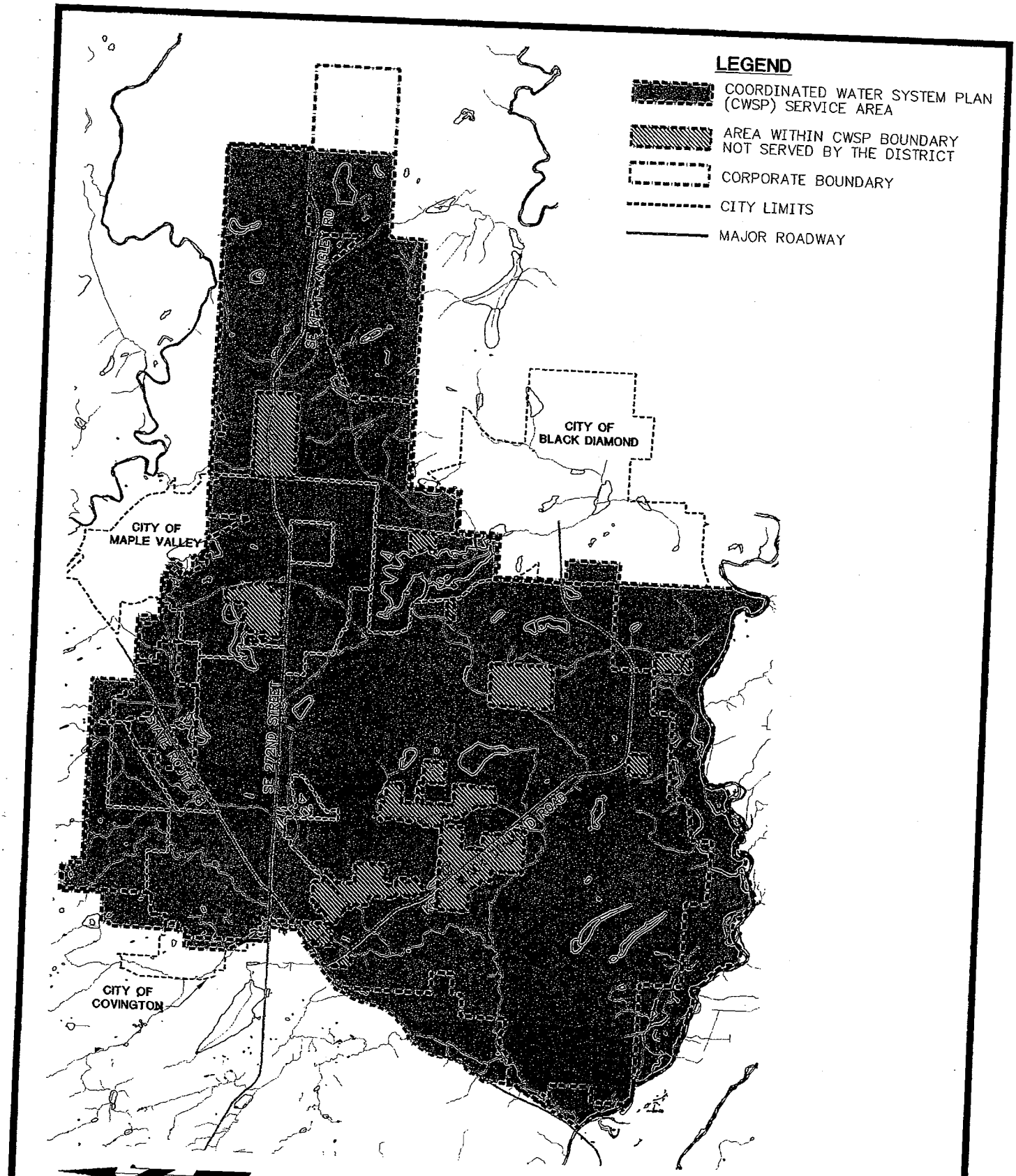
The Amendment responds to a projected increase in needs for water service resulting from a new plat adjacent to the existing service area. Increase in demands on public services and utilities resulting from growth will be determined by zoning, land use plans, and restrictions or needs. The annexation action and water service in themselves will not increase the demand for public services.

Proposed measures to reduce or respond to such demand(s) are:

Water source development, storage construction, and transmission and distribution system improvements to serve water from existing sources will reduce requests to construct exempt wells.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

The Amendment is consistent with good management practices for water resources and does not conflict with current laws and regulations. The Amendment conforms to all laws and requirements for the protection of the environment.



COVINGTON WATER DISTRICT
COMPREHENSIVE WATER PLAN AMENDMENT

EXHIBIT 1.1a

SERVICE AREA BOUNDARIES

APRIL 2008

CHS
CHS ENGINEERS, LLC

COVINGTON WATER DISTRICT
WATER SYSTEM PLAN AMENDMENT

DETERMINATION OF NON-SIGNIFICANCE
AND SEPA CHECKLIST DISTRIBUTION LIST

U.S. Army Corps of Engineers
Chief, Regulatory Branch
PO Box 3755
Seattle, Washington 98124-3755

Mr. Richard Rodriguez
Regional Planner
Department of Health, NWRO
20435-72nd St,Suite 200, MS K17-12
Kent, Washington, 98032-2358

SEPA Coordinator
Department of Ecology, NWRO
3190 – 160th Avenue S.E.
Bellevue, Washington 98009-5452

SEPA Center
Washington State Department of
Natural Resources
P.O. Box 47015
Olympia, Washington 98504-7015

Mr. David Brock
Washington State Department of
Fish and Wildlife, Region 4 office
16018 Mill Creek Boulevard
Mill Creek, Washington 98012-1541

Mr. Greg Bishop
King County Public Health
Department
14350 SE Eastgate Way
Bellevue, Washington 98007

Mr. Steve Hirschey
Regional Water Policy Analyst
King County DNRP
201 S. Jackson St., Suite 700
Seattle, Washington 98104 - 3855

Ms. Barbara Heavey
King County Department of
Development and Environmental
Services
900 Oaksdale Avenue SW
Renton, Washington 98055-1219

Ms. Anne Noris
King County Council
King County Courthouse
516 Third Avenue, Room 1025
Seattle, Washington 98104

Mr. Ty Peterson
City of Maple Valley
PO Box 320
Maple Valley, Washington 98038

Mr. John Carpita
City of Black Diamond
PO Box 599
Black Diamond, Washington 98010

Mr. David Nemens
City of Covington
16720 SE 271st Street, Suite 100
Covington, Washington 98042-4964

Mr. Brad Lake
City of Kent
Water Resources Dept.
220 Fourth Ave. South
Kent, WA 98032

Mr. Michael Gagliardo, Director of
Planning
Cascade Water Alliance
11400 SE 8th Street, Suite 440
Bellevue, WA 98004

Mr. John Kirner
City of Tacoma
Water Utility Dept.
PO Box 11007
Tacoma, WA 98411-0007

Ms. Jane Evancho
City of Tacoma
Water Utility Dept.
PO Box 11007
Tacoma, WA 98411-0007

Mr. Joel Chalmers
Auburn City Hall
25 West Main St.
Auburn, WA 98001

Mr. Don Perry, General Manager
Lakehaven Utility District
31627 1st Ave. South
Federal Way, WA 98003

Mr. William Hall, Manager
KC Water District #111
27224 144th Ave. SE
Kent, WA 98042

Mr. Ron Sheadel, General Manager
Cedar River Water and Sewer
District
PO Box 1040
Maple Valley, WA 98038

Mr. Ron Speer, Manager
Soos Creek Water & Sewer District
14616 SE 192nd Street
Renton, WA 98058

Fire Marshall Dave Pargas
Maple Valley Fire and Life Safety
23775 SE 264th Street
Maple Valley, Washington 98038

Chief Mark Tessen
King County Fire District No. 47
PO Box 206
Ravensdale, Washington 98051

APPENDIX C PLANNING CONSIDERATIONS

Appendix C Basic Planning Considerations

1. Estimated Population, Service Connections, Water Use and ERU's

The Sugarloaf Mountain area (Section 33) will be developed as 128 residential lots with lot size varying from two to three acres each. Conservation areas are planned throughout the plat area. The King County Comprehensive Plan Land Use for the entire Section 33 is Rural Residential. Adjacent to the annexation area are both Rural Residential areas (97%) and a mining area (3%). The King County Comprehensive Plan Zoning for Section 33 is Rural Area one dwelling unit per 5 acres. Development will be "clustered" to achieve the net 5-acre density. Given the size and location of the lots, it is assumed that typical home size and people per residential dwelling unit will be greater than the countywide values typically used.

The District will have one water transmission main serving the area. District standards require installation of a minimum of two meters for every lot, one for inside water use and one for all outside use, including hose bibs and irrigation water. A third water meter will be required to meter a fire sprinkler system at each residence. Demand for each use is calculated independently but used together for sizing of water facilities. The District has had the requirement for separate domestic and irrigation water meters since 2000.

1.1 Actual Domestic and Irrigation Demands

The historical water use for two recently developed plats was reviewed in order to estimate both the future domestic and irrigation demands. The developer has indicated the plats called Ridge at Lake Sawyer, Divisions I and II are similar to the proposed Sugarloaf Mountain development in lots sizes, structures and landscapes. Occupation of lots in the Ridge at Lake Sawyer, Division I began in 2003, with the majority of lots being occupied during 2005. Division II began being occupied in 2005 and is still transitioning into a fully developed community. Only those lots with six water readings in 2005, 2006 and 2007 and not in the developer's name, were used to represent demand.

The following table shows the total water use for the Ridge at Lake Sawyer, Divisions I and II for the past three year period.

Table 1
The Ridge at Lake Sawyer, Division I and II
Historic Water Use

	2005		2006		2007	
	Dom.	**Irr.**	**Dom.**	**Irr.**	**Dom.**	**Irr.**
Total Use (CCF/ year) – Division I	1,519	1,714	2,617	1,906	2,618	870
Total Use (CCF/ year) – Division II	0	0	63	29	510	89
Total Use (CCF/ year) – Divisions I and II	1,519	1,714	2,680	1,935	3,128	959
Number of occupied lots – Division I and II	21	21	35	35	42	42
ADD (gpd) per ERU - Division I and II	148	167	157	113	153	47
ADD (gpd) per ERU – Divisions I	**148**	**167**	**163**	**118**	163	54

CCF = 100 cubic feet
ADD = Average Day Demand

The water use in sample subdivisions during 2007 was significantly lower than normal. This was potentially due to the cooler and wetter weather (see Table 2) in conjunction with the District's high rate for irrigation water (the rates were established to encourage conservation). Therefore, water use for 2007 was not used as part of this analysis.

Table 2
Seattle Temperature and Precipitation
Average versus 2007

	June	July	August	September
Average High Temp	69	74	75	70
Average Low Temp	53	56	57	53
2007 Temperature	60.3	67.8	65.6	59.9
Average Precipitation	1.55	0.93	1.16	1.61
2007 Precipitation	1.34	1.44	0.73	3.16

Only two lots in Division II during 2006 were occupied for entire year. Therefore, the average water use for Division I in 2005 and 2006 was used to forecast future water use. The ADD for 2005 and 2006 at the Ridge at Lake Sawyer Division I are:

156 gpd/ERU domestic
143 gpd/ERU irrigation

The 2007 WSP calculates assumes the water use district-wide is 222 gpd/ERU (with 12% water loss) or 198 gpd/ERU (with no water loss).

Assuming the water use per residence does not change from year to year, we can assume the domestic water use measured at the Ridge at Lake Sawyer, Division I is the same as throughout the District. The ADD for 2005 and 2006 for the entire system is:

ADD (district-wide) = 156 gpd/ERU domestic (79%)
ADD (district-wide) = (198-156) gpd/ERU (21%)
= 42 gpd/ERU irrigation.

The measured maximum day demand condition does not assume all customers irrigate on the same day. Table 3 is the District's actual water use over the past seven-year period and the calculated ratio of MDD/ADD for each year.

Table 3
Covington Water District System-wide
Historic Water Use

Year	ADD, mgd	MDD, mgd	MDD/ADD
2001	3.46	5.87	1.70
2002	3.71	7.39	1.99
2003	3.84	8.66	2.26
2004	3.73	8.67	**2.33**
2005	3.58	7.10	1.99
2006	4.01	8.68	2.17
Average	**3.72**		
Maximum		**8.68**	

Based on the actual CWD system wide data, the average ADD is 3.72. This is approximately the same as the 2004 ADD. Using the maximum day demand of 8.68, the peak MDD/ADD is 8.68/3.72 = 2.33. This is also the same as the ratio of MDD to ADD of 2.33 in 2004. This ratio represents the entire system, many lots of which do not have large landscaped areas.

Exhibit 2-3 in the 2007 WSP identifies 83% of the District is single-family, with less than 1% multi-family and Commercial (non-irrigation) is 10%. For the purposes of this analysis, we are assuming the entire District is single-family residential.

ADD (2004) = 3,730,000 gpd (assuming 12% water loss)
= 3,453,704 gpd (assuming 0% water loss)

The District records indicate during 2004, 79% of the of the entire system use was domestic (see previous):

ADD (2004) = 2,718,158 gpd (domestic) – 79%
ADD (2004) = 735,546 gpd (irrigation) – 21%
= 3,453,704 gpd

The Maximum Day Demand for the District in 2004 is:

MDD (2004) = 8,670,000 gpd (assuming 0% water loss)
- 2,718,158 gpd (domestic)
= 5,951,842 gpd (irrigation)

The Irrigation Peaking Factor for the entire system in 2004 is:

$$\frac{\text{MDD}}{\text{ADD}} = \frac{5{,}951{,}842 \text{ gpd (irrigation)}}{735{,}546 \text{ gpd (irrigation)}} = 8.09$$

1.2 Forecasted Sugarloaf Mountain System demands

Given that there is limited data available, a 25% increase to the 2 year average domestic water use (148 and 163 gpd respectively, Table 1) is used to estimate the ADD for the system. Flushing of the lines and other losses, assumed to be 8% of system demand in the new transmission and distribution system for Sugarloaf Mountain system (Section 33). This is the same water loss the District has calculated District-wide, in 2006.

ADD (domestic) = 156 gpd/ERU * 25% increase = 195 gpd/ERU
ADD (irrigation) = 143 gpd/ERU (same as Ridge at Lake Sawyer)

Communications with the developer indicate the Sugarloaf Mountain system (Section 33) will have four water meters for irrigating common areas. It is not known at this time the size of these common areas. Therefore, the water use for each of these areas is assumed to be the same as for one addition lot. The ADD for Sugarloaf Mountain system with and without irrigation and no losses:

ADD (total system, domestic) = 195 gpd/ERU * 128 ERU
= 24,960 gpd
ADD (total system, irrigation) = 143 gpd/ERU * 132 ERU
= 18,876 gpd
ADD (total system) = 43,836 gpd

The ADD for Sugarloaf Mountain system with 8% losses:

ADD (total system, domestic with losses)
= 211 gpd/ERU * 128 ERU = 27,008 gpd
ADD (total system, irrigation with losses)
= 154 gpd/ERU * 132 ERU = 20,328 gpd
ADD (total system) = 47,336 gpd

The MDD for Sugarloaf Mountain system with and without irrigation and no losses:

MDD (total system, domestic) = 24,960 gpd
MDD (total system, irrigation) = 143 gpd/ERU * 8.09 (pf) * 132 ERU
= 152,707 gpd
MDD (total system) = 177,667 gpd

The MDD for Sugarloaf Mountain system with 8% losses:
MDD (total system, domestic) = 27,008 gpd
MDD (total system, irrigation) = 154 gpd/ERU * 8.09 (pf) * 132 ERU
= 165,000 gpd
MDD (total system) = 192,008 gpd

Based on the approval process through King County, it is assumed that it will take three years for Sugarloaf Mountain to become fully developed with the first units occupied in 2009. This assumes the plat approval occurs in 2008. The Water System Demand Forecast for the Sugarloaf Mountain (Section 33) system over the 3-year period (2009-2011) is presented in Table 4. This information is added to Table 2-3 in the 2007 WSP to get Table 2-3a in this *Amendment*.

Table 4
Sugarloaf Mountain Water System Demand Forecast, in mgd

Water Use Category	2009	2010	2011
Average Day Demand			
Single Family Households	0.008	0.017	0.025
Single Family Households – with irrigation	0.015	0.029	0.044
Non-Revenue	0.001	0.002	0.004
Total Average Day Demand	0.016	0.032	0.047
Single Family Households	0.008	0.017	0.025
Single Family Households – with irrigation	0.059	0.118	0.178
Non-Revenue	0.005	0.009	0.014
Total Maximum Day Demand	0.064	0.123	0.191

*Demand not expected to change after 2011

APPENDIX D HYDRAULIC ANALYSIS REPORT

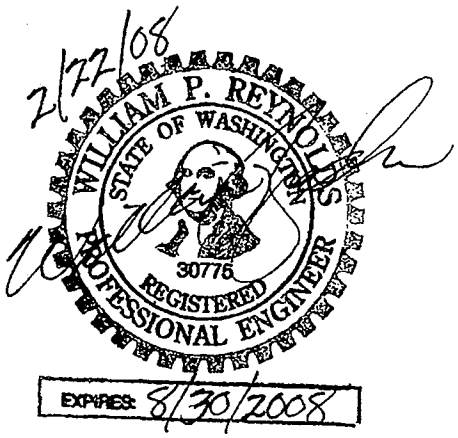
Covington Water District
Sugar Loaf Mountain
Hydraulic Analysis Report

February 22, 2008

Prepared for:

Covington Water District
18631 SE 300th Place
Kent, WA 98042

Prepared by:



William Reynolds, P.E.

Ian Hunter, E.I.T.

HAMMOND COLLIER
WADE LIVINGSTONE
4010 Stone Way North, Suite 300
Seattle, WA 98103
Tel: (206) 632-2664 Fax: (206) 632-0947

HCWL Project No. 07-13-513

Covington Water District
Sugar Loaf Mountain – Hydraulic Modeling Analysis

Background

The proposed Sugar Loaf Mountain development is located in Section 33, T 22 N., R 7 E., east of the current Covington Water District (CWD) boundary on Kent-Kangley Road east of Lake Retreat. The 640-acre development will include 128 single-family residential units on 2-3 acres lots with no anticipated commercial developments or community structures. The development is outside of the existing CWD service area. Three alternatives have been identified as possible sources of supply::

1) A Booster Pump Station from the existing distribution system and approximately 16,000 feet of transmission main along Kent-Kangley Road.
2) New groundwater well or wells on or near the project site.
3) Dedicated connection to the Tacoma Second Supply Pipeline (TSSP).

CWD contracted Hammond Collier Wade Livingstone to conduct hydraulic analyses of the source alternatives and the water main extension into the proposed project site, and provide preliminary sizing of water system facilities to serve the project. The District's hydraulic model was updated by adding 12" diameter pipes from the existing 770 Zone water mains in Ravensdale, up to and across the front of the project site in Kent-Kangley Road. Within the site, 8-inch water mains were added in the proposed roadways to represent the onsite distribution system. See Exhibits 1 through 3 depicting the hydraulic model network and project site map.

Water System Demands

The water demands for this project have been estimated as part of the Water System Plan Amendment, and are explained in Chapter 2 of that document. Those demand projects, in relation to this hydraulic analysis, are summarized below. In addition to the 128 residences, 4 ERU's were included in our analysis to account for proposed common area irrigation meters.

Average Day Demands

ADD_{dom} = **211 gpd**$_{(1)}$/ERU x 128 ERU's = 27,008 gpd

ADD_{irr} = **154 gpd**$_{(1)}$/ERU x 132 ERU's = 20,328 gpd

Total ADD = 47,336 gpd

Maximum Day Demands

MDD_{dom} is equal to ADD_{dom}, as domestic (indoor) water use is assumed to be consistent throughout the year.

MDD_{irr} = **1250 gpd**$_{(1)}$/ERU x 132 ERU's = 165,000 gpd

Total MDD = 192,008 gpd = 133.3 gpm

(1) - Demand values provided by CHS Engineers.

Peak Hour Demands

Utilizing Equation 5-3 in the DOH Water System Design Manual, PHD is determined as:

PHD = (1461/1440)[(2.0 x 132)+75] + 18 = 361.7 gpm

Fire Flow Requirement

To our knowledge, King County has established the fire flow requirement at 1,000 gpm for a two hour period. Washington State water system design standards require a minimum pressure of 20 psi to be provided to all points in the system during fire flow demands under MDD conditions, as well as a minimum pressure of 30 psi during peak hour demands (PHD).

The applicant has indicated that the highest building pad in the project would be at an elevation of 840 feet. Using a static pressure of 40 psi as a design basis starting point (as recommended by DOH), the minimum hydraulic grade required is 932 feet. The entire project could be served by a single pressure zone at 932 HGL, with high pressures of approximately 60 psi (at elevation 790'). Increasing the reservoir hydraulic grade to 941 feet would increase operating pressures to 43 psi at the highest lot and 65 psi at the lowest lot. 941 feet would also match the hydraulic grade of another pressure zone in Maple Ridge Highlands, although it is unlikely the two zones would ever be connected. If the project is served by a single source of supply, it will essentially operate as an independent water system and will require the construction of a water storage reservoir. Without a storage reservoir, booster pumping would be required for the maximum instantaneous flows, including fire flows. Emergency power generation would also be required in order to maintain fire protection in the event of local power interruptions.

Reservoir Sizing

The reservoir volumes are based on Washington State Department of Health design requirements that include equalizing storage, standby storage and fire suppression storage. The total minimum required storage based on these requirements is calculated as follows:

Equalizing Storage

ES = (PHD - Q_s) x 150 = 361.7 x 150 = 54,255 gallons
(Q_s = source capacity with single largest source out of commission. Therefore Q_s = 0 if there will only be the one source)

Standby Storage

Standby storage provides 2 days of Average Day Demand

2 x 47,336 = 94,672 gallons

Fire Storage

1,000 gpm for 2 hours (120 minutes) = 120,000 gallons

TOTAL MINIMUM STORAGE: 268,927 gallons

Hydraulic Modeling

Assuming the reservoir can be constructed on the hillside east of the development (see Exhibit 3), we calculated reservoir dimensions of 35' diameter by 37.5' high, and set the maximum water level at 932 feet. The resulting low water level, which would be reached in the most extreme condition of a fire event occurring after standby storage had been depleted, is 893.7 feet. The subsequent simulations show fire flow deficiencies throughout the project due to the losses encountered in the long lengths of 8-inch pipe. Through several iterations, the required low water level of the reservoir was determined to be **920 feet**. Keeping the reservoir diameter at 35' diam. would put the high water elevation at 957.5 feet. This would result in high pressures of 73 psi in the development, which is within design standards. Under these conditions, required fire flows cannot be achieved at the end of dead-end 8-inch mains. The water system will need to be constructed with all hydrants on looped 8-inch mains, or dead-end mains will need to be increased to 12-inch diameter pipe. We recommend construction of a 300,000 gallon reservoir, 35' diameter by 45' in height (useable water depth of 42 feet), at a base elevation of approximately 918 feet. The additional 30,000 gallons is recommended as a factor of safety to provide for unexpected irrigation demand peaks.

Booster Pump Sizing

The booster pump location was selected at a point that will provide adequate pressure to the inlet of the pumps during PHD conditions. The pump must be sized to provide the anticipated Maximum Daily Demand of the development, which is estimated at 133.3 gpm pumped continuously for 24 hours on the Maximum Day, and must have the ability to pump water to a hydraulic grade of approximately 956 feet in order to fill the proposed reservoir. If cycling of the pump is desired, then the pump would need to provide a higher flow rate equal to the total MDD divide by the desired daily pumping time.

After several simulations with the BPS flowing at 135 gpm, a location was determined approximately 1.2 miles east of Ravensdale, at an elevation of approximately 690 feet. See attached Exhibit 3 for more detail. During PHD conditions, the hydraulic grade at the pump station inlet will be approximately 761 feet, for a suction pressure of 31 psi. The approximate Total Dynamic Head of the pump station to provide 135 gpm to the 958 HGL reservoir will be approximately 197 feet TDH. Head loss due to friction in the 12" transmission main is negligible, due to velocities below 0.4 feet per second at 135 gpm.

Distribution System

The hydraulic modeling indicated that the use of 8-inch mains in the distribution system will be adequate to deliver 1,000 gpm at 20 psi to all points in the services area, with the condition that all fire hydrants are on looped 8-inch main, as required in the District Design Standards. The single pipe connecting the reservoir to the distribution loop should be 12" diameter in order to reduce velocity and losses during fire flow events.

Groundwater Source Alternative

The use of a local groundwater well or wells as an alternative to the booster pump station and transmission main would not significantly affect the hydraulic considerations presented in this report. The well source would need to be sized to provide the flows discussed in the booster pump station section, being 133.3 gpm for total MDD. In addition to adequate well capacity, water quality would also need to be investigated, and treatment would be necessary to provide a level of water quality similar to water currently provided to existing customers. Treatment would include chlorination at a minimum, and may also include iron and manganese removal, corrosion control, hydrogen sulfide removal, arsenic removal, or other filtration processes. There is known existence of iron and manganese in other wells within the vicinity.

A well source (or multiple wells) could provide for the system to be physically separated from the existing system, and be operated as a satellite system of the District, a series of Group B system up to 25 connections, or several exempt wells serving one to three homes. Development of any wells would require substantial geotechnical investigation and testing in order to determine if there would be any negative impact to existing wells in the area. It is also unlikely that a separate system or systems served by wells would be approved by the Department of Health due to the fact that the project will be incorporated into the District's Coordinated Water System Plan boundary.

Tacoma Second Supply Pipeline Source Alternative

The District was a partner in the construction of this facility, and may have the opportunity to secure an additional connection to the pipeline which could be used to provide water to the project. The TSSP is located approximately 1.5 miles south of the project site within a City of Tacoma pipeline right-of-way. Connection to the TSSP would require the design and construction of this pipeline through undeveloped and somewhat rugged terrain. There is no direct route on public rights-of-way or easements that would provide the District with adequate ownership or right of operation of the main. Significant effort would be required for a route study and resulting right-of-way acquisition.

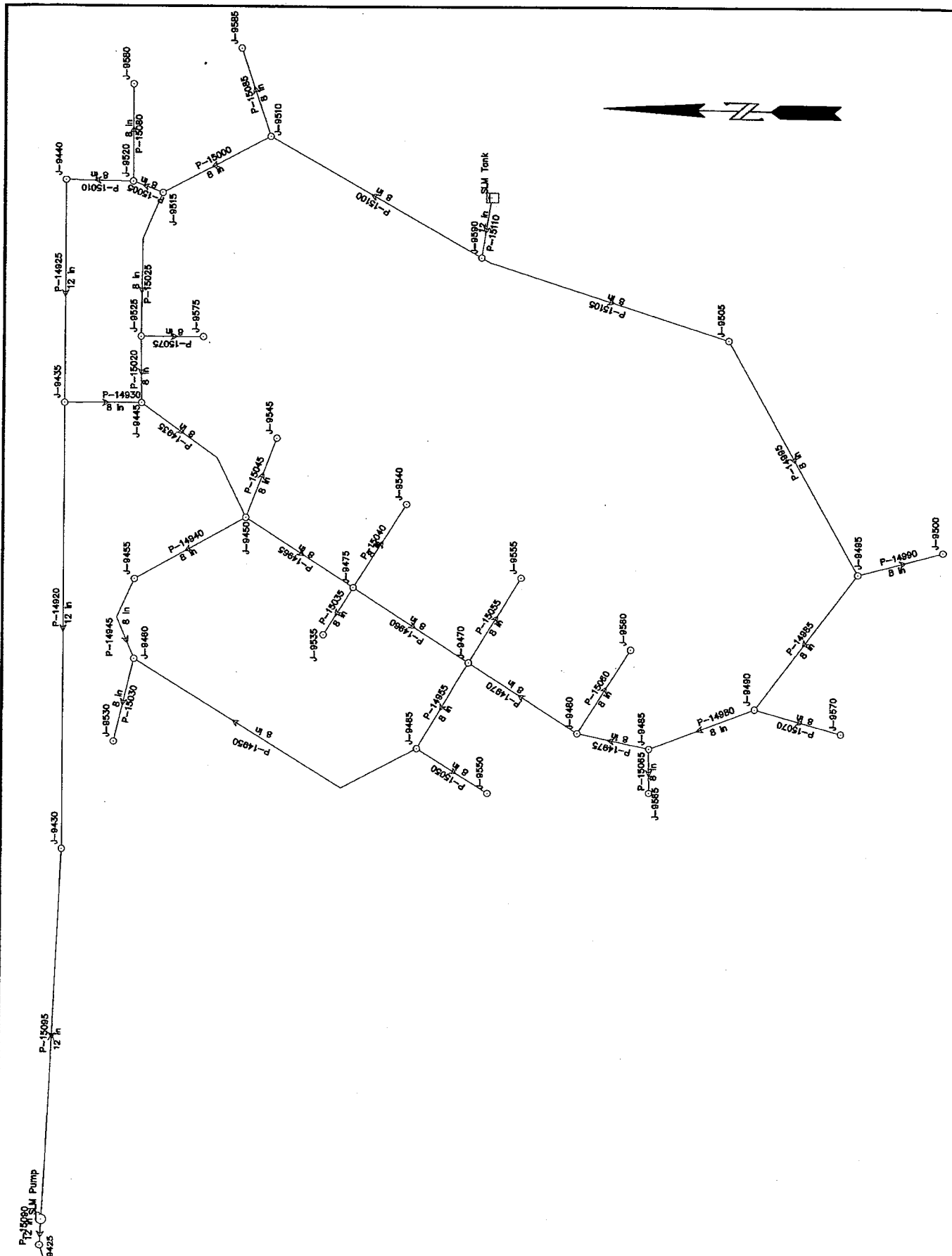
Connections to the TSSP are required to be operated on constant daily flow rates. If a single connection from the TSSP were to serve the relatively small service area, the connection would require considerable attention of water operation staff to balance the flows each day, in order to balance the daily volumes provided with the daily fluctuations in demand. In addition, the TSSP is currently an interruptible supply, which is subject to shut-downs due to high-turbidity events at the source reservoir. Even if the connection to the TSSP were provided as a secondary source of supply, all of the improvement described above, including the transmission main, booster pump station and reservoir, would also need to be constructed in order to provide service to the project in the event the TSSP connection was to be shut-down.

Recommendations

Given the challenges presented by the latter two options, our recommendation is to construct the extension of the existing distribution system to provide water service to the project, with the following general facilities:

- Approx. 16,000 lineal feet of 12-inch diameter ductile iron transmission main from Ravensdale to the project site, and along the frontage of Kent-Kangley Road.
- 135 gallon per minute booster pump station west of the intersection of Retreat-Kanaskat Road.
- 300,000 gallon reservoir with recirculation/rechlorination facility

The District should also consider the installation of an emergency power generator at the pump station if power interruptions in the area regularly exceed 24 hours in duration. The facilities should be designed and constructed to District standards and generally accepted level of service for municipal facilities.



HAMMOND COLLIER
WADE LIVINGSTONE

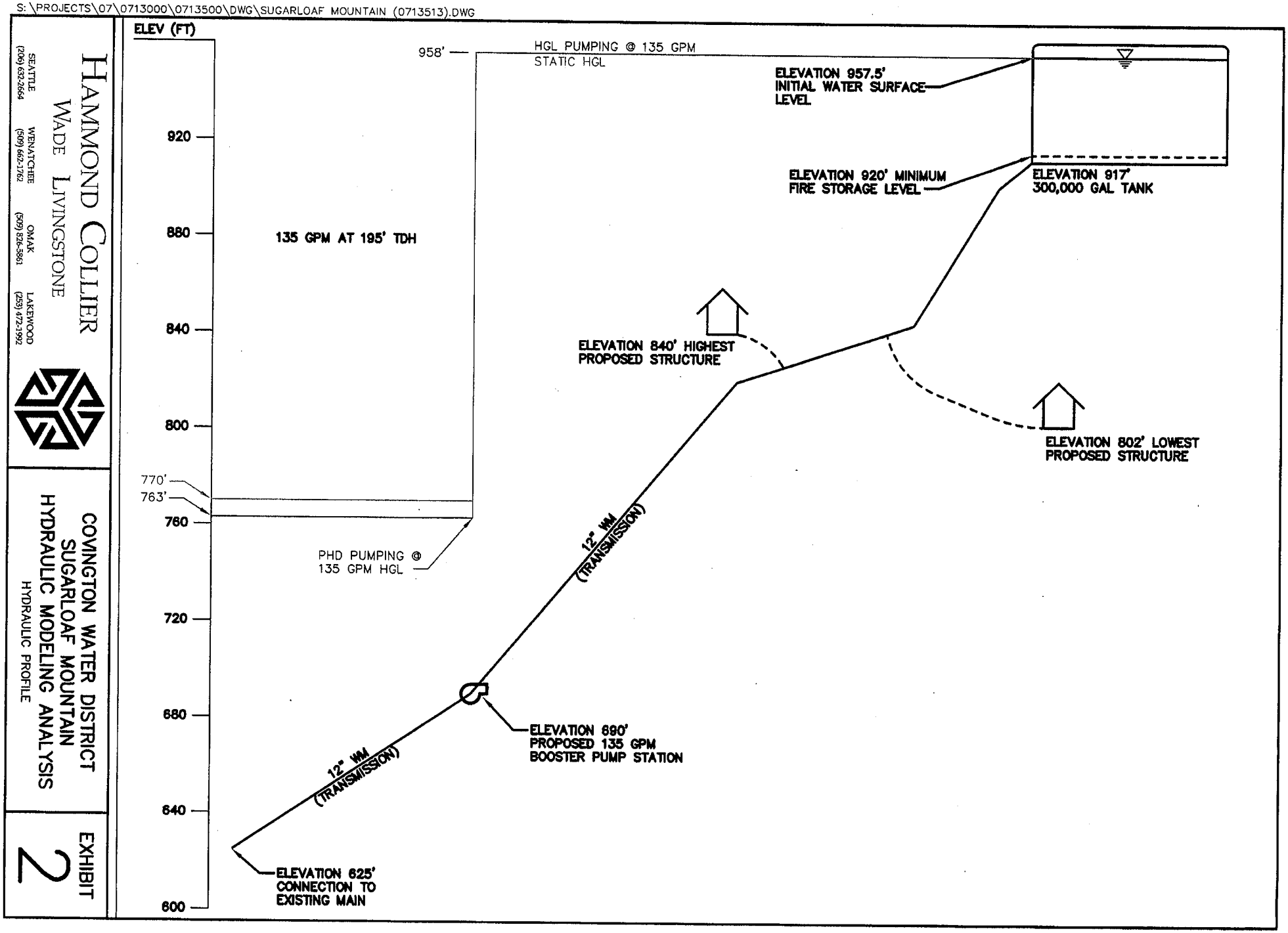
SEATTLE (206) 632-2664
WENATCHEE (509) 662-1762
OMAK (509) 826-5861
LAKEWOOD (253) 472-1992

COVINGTON WATER DISTRICT
SUGARLOAF MOUNTAIN
HYDRAULIC MODELING ANALYSIS
NETWORK SCHEMATIC

EXHIBIT
1

S:\PROJECTS\07\0713000\0713500\DWG\SUGARLOAF MOUNTAIN (0713513).DWG

S:\PROJECTS\07\0713000\0713500\DWG\SUGARLOAF MOUNTAIN (0713513).DWG

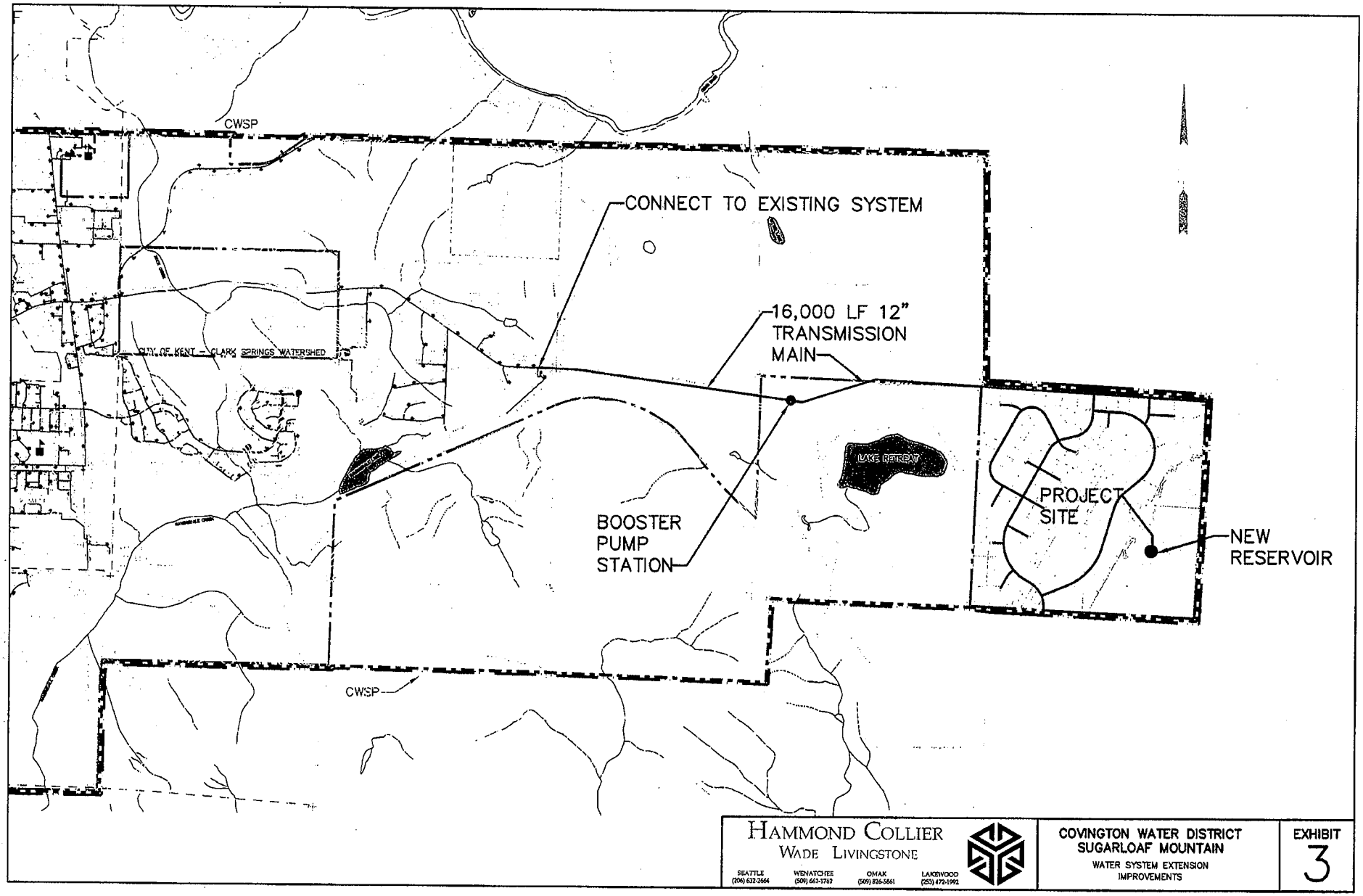


HAMMOND COLLIER
WADE LIVINGSTONE

SEATTLE (206) 632-2664
WENATCHEE (509) 662-1762
OMAK (509) 826-3861
LAKEWOOD (253) 472-1992

COVINGTON WATER DISTRICT
SUGARLOAF MOUNTAIN
HYDRAULIC MODELING ANALYSIS
HYDRAULIC PROFILE

EXHIBIT 2



HAMMOND COLLIER
WADE LIVINGSTONE

SEATTLE (206) 632-2664 | WENATCHEE (509) 662-1702 | OMAK (509) 826-5661 | LAKEWOOD (253) 472-1992

COVINGTON WATER DISTRICT
SUGARLOAF MOUNTAIN
WATER SYSTEM EXTENSION IMPROVEMENTS

EXHIBIT 3

Sugar Loaf Mountain
Fire Flow Analysis during MDD conditions and minimum residual pressure 20 psi
Booster Pump OFF, Tank HG at 920', Fire Flow Applied to Looped Nodes Only
February 20, 2008

Label	Zone	Fire Flow Iterations	Fire Flow Balanced?	Satisfies Fire Flow Constraints?	Needed Fire Flow (gpm)	Available Fire Flow (gpm)	Total Flow Needed (gpm)	Total Flow Available (gpm)	Residual Pressure (psi)	Calculated Residual Pressure (psi)	Minimum Zone Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction	Minimum System Pressure (psi)	Calculated Minimum System Pressure (psi)	Minimum System Junction
J-9445	0	5	TRUE	TRUE	1,000	1,044	1,004	1,048	20	31	20	20	J-9440	N/A	6	PMP-6130
J-9450	0	5	TRUE	TRUE	1,000	1,129	1,005	1,134	20	31	20	20	J-9440	N/A	6	PMP-6130
J-9455	0	5	TRUE	TRUE	1,000	1,147	1,005	1,152	20	26	20	20	J-9440	N/A	6	PMP-6130
J-9460	0	5	TRUE	TRUE	1,000	1,150	1,010	1,160	20	27	20	20	J-9440	N/A	6	PMP-6130
J-9465	0	7	TRUE	TRUE	1,000	1,170	1,008	1,178	20	27	20	20	J-9440	N/A	6	PMP-6130
J-9470	0	22	TRUE	TRUE	1,000	1,189	1,004	1,193	20	25	20	20	J-9440	N/A	6	PMP-6130
J-9475	0	5	TRUE	TRUE	1,000	1,154	1,002	1,156	20	29	20	20	J-9440	N/A	6	PMP-6130
J-9480	0	5	TRUE	TRUE	1,000	1,150	1,001	1,151	20	24	20	20	J-9570	N/A	6	PMP-6130
J-9485	0	5	TRUE	TRUE	1,000	1,106	1,002	1,108	20	28	20	20	J-9570	N/A	6	PMP-6130
J-9490	0	5	TRUE	TRUE	1,000	1,044	1,004	1,048	20	21	20	20	J-9570	N/A	6	PMP-6130
J-9495	0	5	TRUE	TRUE	1,000	1,174	1,003	1,177	20	22	20	20	J-9570	N/A	6	PMP-6130
J-9505	0	3	TRUE	TRUE	1,000	1,514	1,016	1,530	20	20	20	20	J-9570	N/A	6	PMP-6130
J-9510	0	5	TRUE	TRUE	1,000	1,241	1,009	1,250	20	21	20	20	J-9440	N/A	6	PMP-6130
J-9515	0	5	TRUE	TRUE	1,000	1,058	1,003	1,062	20	22	20	20	J-9440	N/A	6	PMP-6130
J-9520	0	5	TRUE	TRUE	1,000	1,028	1,004	1,032	20	22	20	20	J-9440	N/A	6	PMP-6130
J-9525	0	5	TRUE	TRUE	1,000	1,050	1,002	1,052	20	30	20	20	J-9440	N/A	6	PMP-6130
J-9590	0	6	TRUE	TRUE	1,000	3,565	1,000	3,565	20	22	20	20	J-9440	N/A	6	PMP-6130

Sugar Loaf Mountain
PHD Check for minimum pressure (30 psi)
Booster Pump ON, Tank HG at 932'
February 20, 2008

Label	Elevation (ft)	Zone	Base Flow (gpm)	Demand (Calculated) (gal/min)	Calculated Hydraulic Grade (ft)	Pressure (lbs/in²)	Elevation (ft)	Pattern
J-9440	845	0	0	0	930.8	37.214	845	Pattern - 1
J-9580	840	0	8.218	8.2	930.8	39.383	840	Pattern - 1
J-9520	840	0	10.958	11	930.8	39.383	840	Pattern - 1
J-9515	840	0	8.218	8.2	930.9	39.386	840	Pattern - 1
J-9585	840	0	5.478	5.5	931.1	39.48	840	Pattern - 1
J-9510	840	0	24.654	24.7	931.1	39.481	840	Pattern - 1
J-9590	840	0	0	0	931.8	39.782	840	Pattern - 1
J-9570	838	0	13.696	13.7	930.3	40.035	838	Pattern - 1
J-9490	835	0	10.958	11	930.4	41.338	835	Pattern - 1
J-9495	830	0	8.218	8.2	930.6	43.6	830	Pattern - 1
J-9505	830	0	43.829	43.8	931	43.775	830	Pattern - 1
J-9555	828	0	13.696	13.7	930.2	44.311	828	Pattern - 1
J-9540	828	0	13.696	13.7	930.2	44.316	828	Pattern - 1
J-9500	827	0	0	0	930.6	44.9	827	Pattern - 1
J-9560	825	0	10.958	11	930.2	45.624	825	Pattern - 1
J-9575	825	0	13.696	13.7	930.7	45.842	825	Pattern - 1
J-9480	821	0	2.74	2.7	930.2	47.359	821	Pattern - 1
J-9545	820	0	13.696	13.7	930.3	47.811	820	Pattern - 1
J-9435	820	0	0	0	930.8	48.052	820	Pattern - 1
J-9445	818	0	10.958	11	930.7	48.867	818	Pattern - 1
J-9525	818	0	5.478	5.5	930.7	48.878	818	Pattern - 1
J-9470	816	0	10.958	11	930.2	49.515	816	Pattern - 1
J-9485	815	0	5.478	5.5	930.3	49.973	815	Pattern - 1
J-9565	813	0	10.958	11	930.3	50.84	813	Pattern - 1
J-9455	810	0	13.696	13.7	930.2	52.12	810	Pattern - 1
J-9535	810	0	10.958	11	930.2	52.121	810	Pattern - 1
J-9475	808	0	5.478	5.5	930.2	52.988	808	Pattern - 1
J-9450	808	0	13.696	13.7	930.3	53.015	808	Pattern - 1
J-9550	807	0	13.696	13.7	930.2	53.407	807	Pattern - 1
J-9465	806	0	21.914	21.9	930.2	53.842	806	Pattern - 1
J-9460	805	0	27.394	27.4	930.2	54.276	805	Pattern - 1
J-9530	802	0	8.218	8.2	930.2	55.576	802	Pattern - 1
J-9430	775	0	0	0	930.9	67.591	775	Pattern - 1
				361.9				

APPENDIX E 2007 CONSERVATION PLAN

COVINGTON WATER DISTRICT
RESOLUTION NO. 3615

A RESOLUTION establishing the Covington Water District's Water Use Efficiency Goals and Program, which identifies proposed Water Use Efficiency Measures to be implemented.

WHEREAS, the Washington State Legislature adopted the Municipal Water Law (House Bill 1338) requiring that the Washington State Department of Health establish water use efficiency requirements designed to ensure efficient use of water while maintaining water system financial viability, improving affordability of supplies and enhancing system reliability; and

WHEREAS, the Washington State Department of Health has developed Water Use Efficiency Requirements that are now codified within WAC 246-290; and

WHEREAS, the rule requires that municipal water suppliers develop and implement a water use efficiency program which includes sufficient cost-effective water use efficiency measures to meet the water use efficiency goals adopted by the municipal water supplier; and

WHEREAS, WAC 246-290-830 institutes a process for municipal water suppliers to establish Water Use Efficiency Goals that must be designed to enhance the efficient use of water by the water system and its customers; and

WHEREAS, Covington Water District staff has established Water Use Efficiency Goals of reducing the average daily single family household consumption to 195 gallons per day, or a savings of 86,000 gallons per day by the end of the 2008 – 2013 planning period, reducing the average daily single family household consumption to 246 gallons per day, or a savings of 121,000 gallons per day during the peak season (June – September) by the end of the 2008 – 2013 planning period, and reducing leakage to 8% or less by the end of the 2008 – 2013 planning period; and

WHEREAS, the Covington Water District Board of Commissioners held a public meeting on December 5, 2007, for which notice was provided at least two weeks prior to the meeting, at which the public was given an opportunity to participate and provide comment, and the comments were reviewed and considered by the Board; NOW, THEREFORE,

BE IT RESOLVED by the Board of Commissioners of the Covington Water District that the Board of Commissioners establish the Covington Water District Water Use Efficiency Goals as stated above and the Water Use Efficiency Program identifying the conservation measures to be implemented, as defined in Attachment A, and as presented by staff at the November 14, 2007 Board Meeting.

ADOPTED at a regular meeting of the Board of Water Commissioners of Covington Water District held this 2nd day of January 2008.

President

Secretary

Commissioners

COPY

Conservation Program

Water Use Efficiency Rule – Goals

Water Supply Characteristics

Covington Water District (District) has experienced continual growth since its formation in 1960. Originally, the District's water supply consisted solely of groundwater from two (2) wellfields. Currently, the District utilizes 10 wells from two wellfields plus a single well at another location. All wells are located in Water Resource Inventory Area (WRIA) 9, the Green River watershed. The 222nd Wellfield includes six (6) active wells which have the capacity to produce 4000 gpm or 5.8 mgd. Currently, the 222nd wells produce a combined average of 1.8 mgd or approximately 45% of the District's total annual production. The Witte Wellfield consists of four (4) wells that operate only from May 15 to October 31 of each year through an agreement with the Muckleshoot Tribe. The Witte Wellfield currently produces a total of approximately 1 mgd when in operation or an average of 11% of the District's total annual production.

To keep pace with the demand for water, the District sought additional Water Rights for a number of years. Unfortunately, during that time span, the Green River Basin was closed to any further withdrawals. The District consequently formed alliances with the City of Auburn, Seattle Public Utilities (SPU), and Tacoma Public Utilities for additional water supply. In addition, the District implemented a strong conservation program.

The District's average daily demand in 2006 was 4.1 million gallons per day. The District's peak demand generally occurs in the months of July and August and the record peak day occurred in July of 2006 with a single day demand of 8.67 million gallons. The District can currently take up to 5 mgd from Tacoma's Green River supply through one connection to the Second Supply Pipeline. When the District completes three (3) additional connections to the Second Supply Pipeline over 18 mgd will be available on a given day. This additional supply will accommodate the District's growth well into the future.

In 2000, the District and a number of other water providers formed the Cascade Water Alliance (Cascade) to develop future water supply. Cascade currently utilizes SPU's water supply with plans to utilize water from Tacoma's Second Supply Line starting in 2010. Cascade's long range plans include the development of water supply at Lake Tapps. Cascade has also implemented a water conservation program which is paid for by member dues.

Conservation History

The District has a long history of implementing conservation measures. The District's current conservation program was developed and implemented with the hiring of a fulltime Conservation Specialist in 1994. In July of 2004, the District became party to the regional conservation program administered by Cascade. Cascade's Transition Conservation Program, developed in 2004, includes multiple measures implemented throughout the collective service areas of all eight Cascade members. Some of the regional Cascade measures replaced historic local District measures, while other regional measures augmented the District's conservation program measures.

Water Use Efficiency Rule Requirements and District Compliance Summary

The State of Washington recently revised its water conservation planning requirements as a result of the 2003 Municipal Water Law. An outgrowth of that law is the Water Use Efficiency Rule (Rule), which was finalized and implemented in January 2007. The Rule has several requirements and corresponding compliance dates. Some of the requirements are associated with water system comprehensive plans, while other requirements are independent of the six year water system planning cycle. The District's current water system plan is not technically subject to the new requirements, since it was submitted prior to the compliance dates for planning documents. However, the District has chosen to proactively meet the upcoming requirements of the Rule with this updated Conservation Plan.

Table 1 lists the requirements of the Rule and shows that the District is either currently in compliance or is on track to be in compliance for activities where compliance will be determined at a future date. There are seven main categories of requirements under the Water Use Efficiency Rule: 1) meters, 2) data collection, 3) distribution system leakage, 4) goals, 5) efficiency program, 6) demand forecast, and 7) performance reports.

Table 1: Water Use Efficiency Rule Requirements and District Compliance

Category	WAC Section	Compliance Date	New Requirement	District in Compliance?
1. Meters	246-290-496	Fully metered by Jan. 22, 2017.	1. Meter all **sources.** 2. Meter all **service connections.** 3. For systems **not fully metered,** create meter installation plan, perform activities to minimize leakage, and report annually on installation and leak minimization actions.	**Yes** – all wells and interties are metered **Yes** – all service connections are metered **NA**
2. Data Collection	246-290-100	WSPs submitted after Jan.22, 2008.	1. Provide monthly & annual **production/purchase** numbers for each source. 2. Provide annual **consumption** by customer class. 3. Provide **seasonal variations** in consumption by customer class. 4. Provide annual quantity **supplied to other public water systems.** 5. Evaluate **reclaimed water** opportunities. 6. Consider water use efficiency **rate structure.**	**Yes,** provided in Section 2 page 2 & 3 **Yes,** provided in Section 2 page 4 **Yes,** provided in Section 2 pages 1 - 4 **Yes,** provided in Section 2 page 4 **Yes,** provided in Section 5 page 4 **Yes,** the District's rate structure includes inverted block rates and seasonal rates.
3. Distribution System Leakage	246-290-820	First report completed by July 2, 2008. First compliance determination made by July 1, 2010.	1. **Calculate** annual volume and percent using formula defined in the Rule. 2. **Report** annually: annual leakage volume, annual leakage percent. 3. **Develop water loss control** action plan (if leakage is over 10% for 3 year average).	**Yes.** The District's 2006 distribution system leakage was 8% and the 2004-2006 average was 9%. The leakage information is reported in TSSP MOA with Department of Ecology.
4. Goals	246-290-830	Goals established by January 22, 2008.	1. **Establish** measurable (in terms of water production or usage) conservation goals and re-establish every 6 years. Provide schedule for achieving goals. 2. Use a **public process** to establish the goals. 3. **Report** annually on progress.	**Yes,** measurable goals will be established via a public process. See Page 11. **Yes,** a public forum is scheduled for December 5, 2007. **Yes,** the District will report on progress by the required deadline of July 2008, and in subsequent years.
5. Efficiency Program	246-290-810	WSPs submitted after January 22, 2008.	1. **Describe existing** conservation program. 2. **Estimate water saved** over last 6 years due to conservation program. 3. Describe conservation **goals.** 4. **Implement or evaluate** 1-12 measures, depending on size. (9 measures for the District) 5. Describe conservation **programs for next 6 years** including schedule, budget, and funding mechanism. 6. Describe how customers will be **educated** on efficiency practices. 7. Estimate **projected water savings** from selected measures. 8. Describe how efficiency program will be **evaluated** for effectiveness. 9. Estimate **leakage from transmission lines** (if not included in distribution system leakage).	**Yes,** see Section 5 Pages 1 – 5 of WSP. **Yes,** see page 11 of this document. **Yes,** the District is implementing 23 measures, see Table 5. #'s 5 – 9 were not included in the most recent WSP because the WSP was submitted to the DOH prior to the implementation of the WUER.
6. Demand Forecast	246-290-100	WSPs submitted after January 22, 2008.	1. Provide demand forecast reflecting **no additional conservation.** 2. Provide demand forecast reflecting **savings from efficiency program.** 3. Provide demand forecast reflecting **all "cost effective" evaluated measures.**	Not required at the time the District's WSP was submitted to DOH.
7. Performance Reports	246-290-840	First report completed by July 1, 2008.	1. **Develop** annual report including: goals and progress towards meeting them, total annual production, annual leakage volume and percent, and, for systems not fully metered, status of meter installation and actions taken to minimize leakage. 2. Submit annually to DOH, customers and make available to the public.	**Yes,** the District will report on progress by the required deadline of July 1, 2008, and in subsequent years.

Historical (Existing) Conservation Program

Measures

A summary of the conservation measures the District has implemented in the last six years is shown in Table 2 below. The table includes both local measures implemented by District staff and regional measures implemented by Cascade. The measures encompass both supply-side and demand-side activities.

Table 2: Historical Conservation Program

Conservation Measures	Sectors			Years Implemented						Local or Regional
	SF	MF	ICI	2001	2002	2003	2004	2005	2006	
INDOOR PROGRAM-HARDWARE										
1. Clothes Washer Rebates	X			X	X	X	X	X	X	Local & Regional
2. Toilet Sales	X	X	X	X	X	X	X	X	X	Local
3. Toilet Rebates/Free Toilets			X				X	X	X	Regional
4. Showerheads & Faucet Aerators	X			X	X	X	X	X	X	Local & Regional
OUTDOOR PROGRAM-HARDWARE										
5. ET Controller Rebates	X	X	X				X	X	X	Regional
6. Rain Sensor Rebates	X	X	X				X	X	X	Regional
7. Irrigation System Audits	X						X	X	X	Regional
8. Rainbarrel Distribution	X			X	X	X	X	X	X	Local
BEHAVIOR CHANGE INDOORS										
9. Leak Detection & Repair	X			X	X	X	X	X	X	Local & Regional
10. Shorter Showers	X			X	X	X	X	X	X	Local & Regional
BEHAVIOR CHANGE OUTDOORS										
11. Allow Lawn to Go Dormant	X			X	X	X	X	X	X	Local
12. Demo Garden & Tours	X			X	X	X	X	X	X	Local
13. Landscape Seminars	X			X	X	X	X	X	X	Local
14. HOA Landscape Seminars	X						X		X	Local
EDUCATION										
15. Customer Newsletter	X	X	X	X	X	X	X	X	X	Local
16. Conservation Ad Campaign	X	X	X	X	X	X	X	X	X	Local
17. Classroom Visits & Water Festival	X	X		X	X	X	X	X	X	Local
18. Brochure Racks in Stores	X	X	X					X	X	Local
19. Vehicle Signs	X	X	X	X	X	X	X	X	X	Local
20. Conservation Kits	X	X		X	X	X	X	X	X	Local & Regional
21. Booth Events	X	X		X	X	X	X	X	X	Local
22. Garden Notes Newsletter	X	X						X	X	Local
SUPPLY-SIDE ACTIVITIES										
23. Conservation Pricing	X	X	X	X	X	X	X	X	X	Local

1. Clothes Washer Rebates

The District has offered clothes washer rebates for the single family sector since 1999. The rebates are intended to motivate customers to replace less efficient clothes washers with more efficient models. Initially the rebates were administered by District staff. When the Cascade conservation program came into effect in 2004, the District switched over to the Cascade clothes washer rebate which utilizes a tiered system of higher rebates for more efficient models.

2. Toilet Sales

With approximately 10,000 homes built prior to 1994 within its service area, the District saw an opportunity to reduce indoor water use for customers by offering low-flow toilets to replace high-water-using models. Not having the budget to provide costly rebates, the District initiated the sale of toilets at "near wholesale cost". By buying the toilets in bulk, the District was able to get them at a reduced price while ensuring that the customer received a good water conserving toilet.

3. Toilet Rebates/Free Toilets

The Cascade regional program offers a toilet rebate or a free toilet which is marketed to existing customers with pre-code toilets in the multifamily, institutional, commercial, and industrial (ICI) sectors. Rebates are provided to customers who replace less efficient toilets with 1.6 gallon per flush (gpf) toilets, which is the maximum allowed under the plumbing code.

4. Showerheads & Faucet Aerators

The District has made low-flow showerheads and faucet aerators available to customers for many years. In 2006, the District switched from 2.5 gallon per minute (gpm) to 2.0 gpm showerheads with a push-button feature that reduces flow when full flow is not needed.

5. ET Controller Rebates

Under the regional Cascade program, the District provided rebates for evapotranspiration (ET) based controllers, which automatically adjust irrigation systems to historic or real time weather data, thereby reducing excessive irrigation. Rebates were also provided to customers who replaced outdated controllers with conservation controllers. These controllers have features that can be used to water more efficiently, such as multiple programs, cycle and soak elements, and water budgeting abilities. The program is applicable to customers with in-ground irrigation systems with automatic controllers, which reflects a large portion of where the District's irrigation water is used. The rebates were made available to all customer classes.

6. Rain Sensors

Under the regional Cascade program, the District provided rebates for rain sensors, which are devices that turn off automatic irrigation systems when it is raining, thereby minimizing excessive irrigation. The program is applicable to customers with in-ground irrigation systems with automatic controllers, which reflects a large portion of where the District's irrigation water is used. The rain sensors were made available to all customer classes.

7. Irrigation System Audits

Under the regional Cascade program, the District provided free irrigation audits to customers with high outdoor water usage to improve the efficiency of their irrigation systems. The audits included identifying hardware and scheduling improvements, and providing information about techniques to improve water efficiency such as lawn aeration, mulching, and enhancing soil conditions. The audits are performed by a contracted professional landscape irrigation auditor. The program is applicable to customers with in-ground irrigation systems with automatic controllers, which reflects a large portion of where the District's irrigation water is used. The rain sensors were made available to all customer classes.

8. Rainbarrel Distribution

In 1997, the District implemented the first Rainbarrel Distribution program in the region. The goal of this award-winning program is to increase awareness of the quantity of water used in the landscape, encourage wise management of the limited supply, and reduce use of treated water by taking advantage of free rain falling on customer roofs. Approximately 6,000 barrels have been sold to date.

1. Leak Detection & Repair

Water utilities that operate efficient physical systems that minimize leaks demonstrate a strong commitment to sound financial and resource management. The District's demand-side leak detection program consists of proactively being on the alert for probable customer leaks, customer notification, customer follow up, and a leak adjustment policy that encourages prompt repair. The District is alerted to possible leaks either during meter reading or during bill preparation when the billing system identifies customers with abnormally high consumption. Customer notification and follow up occurs through various means, including doorhangers, email, mailings, and phone calls. The District's one time only leak adjustment policy reduces charges by 50% only for the billing period in which a leak is repaired, thus encouraging prompt repair.

10. Shorter Showers

The District has promoted shorter showers over the years in various newsletter articles and with the distribution of Shower Timers.

11. Allow Lawn to Go Dormant

The District has promoted allowing lawns to go dormant for a number of years in newsletters and in landscape seminars. It should be noted that allowing lawns to go dormant during the summer does not eliminate lawn watering completely. Green industry experts recommend watering once a month during the dormant period to ensure a healthy revival once the rainy season starts again.

12. Demo Garden & Tours

The District constructed a WaterWise Demonstration Garden in 1998, adding to it each year. The purpose of the Garden is to show customers that a beautiful landscape can be had with very little water. Signage is included in the Garden to educate customers on efficient landscape practices. Several years ago, the District started offering Garden Tours to interested customers.

13. Landscape Seminars

The District has offered Water Wise Landscape Seminars since 1996 to help educate customers on how to have an attractive, healthy landscape with less water and less chemical use to protect water quality and promote water conservation. The seminars are advertised in the District's customer newsletter and in the local newspapers.

14. HOA Landscape Seminars

In 2004, the District participated with King County in offering the "Natural Yard Care Neighborhoods" landscape seminar series to teach customers better ways to take care of their home landscapes with less water, use of organic fertilizers and integrated pest management (IPM). The goal of the program was to gather people residing in the same development, homeowners associations, or neighborhood to learn together so they can support each other through and after the process. Coming from the same neighborhood gave them a common bond, a connection that enhanced the desire to work together for the good of their community. Homeowner associations are of particular interest, since they often have covenants that require the maintenance of traditional, water intensive landscapes.

15. Customer Newsletter

The District's customer newsletter is distributed with each bill and, in addition to providing information about District activities, has focused largely on conservation. Depending on the season, articles focus on indoor or outdoor aspects of the District's conservation program.

16. Conservation Ad Campaign

The District has been purchasing advertising space in local newspaper since 1995 to educate customers on the need to use water wisely. The original ads provided monthly tips on easy ways to conserve utilizing eye-catching graphics. A subsequent ad campaign included photos of actual people demonstrating a different conservation method each month-the focus being on if that person can do it, so can the reader. The most recent ad campaign (Image Busters) included photos of water waste to alert folks to what water waste looks like and how, if seen in their yard, it could damage their good image. By partnering with the Cities of Auburn and Kent, and Cedar River Water & Sewer, our reach is extended and we only pay part of the total cost.

17. Classroom Visits & Water Festival

Educating students, future decision makers, on the importance of using water wisely has always held a high priority with the District. Teacher newsletters are sent out several times during the school year to promote the visits and the importance of environmental education (also is a state education requirement). Implementing the first annual South King County Regional Water Festival in 2000 for 1,600-1,800 4th and 5th grade students in five school districts has been a special feather in our cap. Many teachers bring their students back each year.

18. Brochure Racks in Stores

One of the dilemmas of having lots of educational material on hand is getting it out into people's hands. In 2006, the District was able to recruit four local, high-traffic businesses to host our brochure racks on their premises. The more ways we can get our conservation messages read, the more people we can educate.

19. Vehicle Signs

In 2000, the District started its Vehicle Billboard sign program to utilize the vacant space on the side of vehicles to promote conservation tips. With a 55 square mile service area, District vehicles often drive through many neighborhoods a day exposing many customers to our conservation messages.

20. Conservation Kits

These kits, which include dye tablets to check for toilet leaks, and other conservation aids, are made available to customers in our building lobby, in the schools, and at various public events.

21. Booth Events

The District participates at Maple Valley Days, Covington Days, the South King County Arboretum Plant Sale, and other events as they occur. It is an excellent way to interact with our customers in a fun setting to promote conservation.

22. Garden Notes Newsletter

This newsletter promotes waterwise landscaping information and is sent to customers on request. Its focus is on reducing summer peak water usage.

23. Conservation Pricing

Rates can be used to encourage conservation action by customers. Rates typically consist of the fixed charge and a variable charge. The fixed charge (also known as the base charge) is applied regardless of the amount of water consumed and the variable charge is applied to the volume of water consumed. There are four basic rate structures for the variable charge: uniform, declining block, increasing block, and seasonal.

- In the uniform rate, the total cost of water is divided over the total customer base. Low-volume users pay the same amount as high-volume users.
- In the declining block rate, high volume users pay less per unit which can encourage them to use more water, not less.
- In the increasing block rate, high volume users pay more per unit with additional consumption to cover the cost of the additional wear and tear they cause on the water system with their high usage.
- With seasonal rates, customers are charged more for water when less water is available to help curb high usage.

Both increasing blocks and seasonal rates are considered conservation pricing in that they encourage customers to reduce usage.

The District has a 4-tier increasing block rate as well as a summer rate. In addition, the District has separate meters for outdoor water use at homes constructed after 1999, to help users determine where they are using the most water and where they can most easily reduce water usage. See Appendix for the District's Rate Chart.

Savings Achieved by Historical Program

The District has reduced the average consumption per single family household (SFH) over the last six years. The SFH level is defined as the average amount of water used by a single family residence. The District assigns a number of SRH's to each residential customer based on the size of the customer's water meter. Since single family customers typically receive a 5/8 inch meter, that meter size is assigned one SFH. Larger residential meters are assigned more SFH's based on a weighting factor determined by the using American Water Works Association (AWWA) capacity ratings.

Framing the discussion of savings in terms of SFHs is appropriate for two reasons. First, focusing on the water use per SFH normalizes for growth, as well as for the various meter sizes within a customer class. As the District continues to grow, gauging conservation savings in terms of total production may not be appropriate. Utilities can experience an increase in total production due to strong growth, while still achieving conservation savings. Second, one SFH is equivalent to a single family customer served with a 5/8 inch meter, which represents the largest component (98%) of the District's customer base.

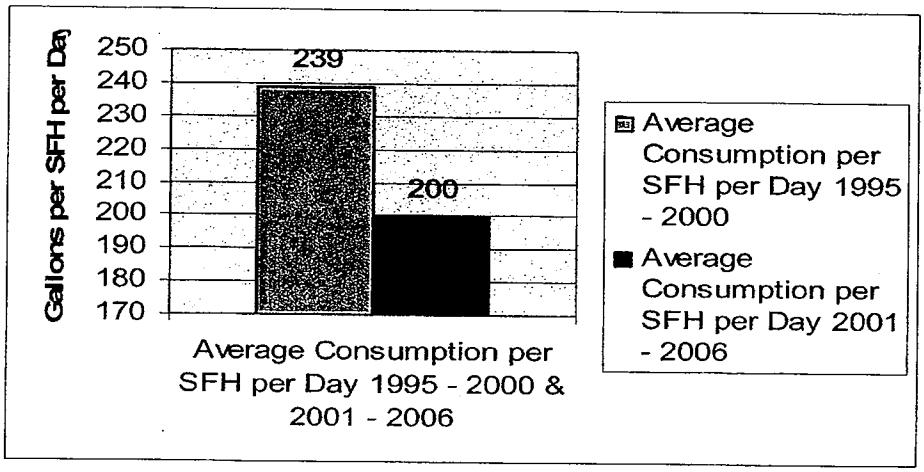
Table 3 shows the annual consumption and the number of customers (as SFH's) for the years 1995-2006.

Table 3: Annual Consumption for the Years 1995-2006

Year	Annual Consumption (in Million Gallons)	Number of Customers (as Single Family Households)	Avg. Consumption (in Gallons per SFH per Day)
1995	949	10,750	242
1996	996	10,950	249
1997	955	11,167	234
1998	1,030	11,359	248
1999	962	11,462	230
2000	987	11,696	231
2001	889	11,966	204
2002	957	12,383	212
2003	1,055	12,985	223
2004	996	13,793	198
2005	932	14,534	176
2006	1,028	15,152	186

Figure 1 shows a comparison of the average consumption per SHF in gallons per day for the years 1995 – 2000 and 2001 – 2006.

Figure 1: Average Day Consumption Comparison



The average consumption per SFH during the benchmark period 1995-2000, was 239 gallons per day (gpd). The average consumption per SFH for the 2001-2006 period was 200 gpd, which is a 16% reduction in the average per SFH per day consumption from the 1995 – 2000 benchmark period. This reduction equates to an average savings of 525,291 gallons per day during the 2001 – 2006 period. It should be noted that some decreases in consumption were observed in 2001 and 2005 due in part to weather related conditions during those years. 2001 was a dry summer with a State-declared drought, during which the District went into the Advisory stage of its water use curtailment plan. Governor Gregoir declared a statewide drought in March of 2005 and even though the summer months of that year were less dry and warm the conservation effort remained strong throughout the summer. 2006 was another long, dry summer, and while not in an official drought situation, many utilities including the District issued requests for customers to conserve water.

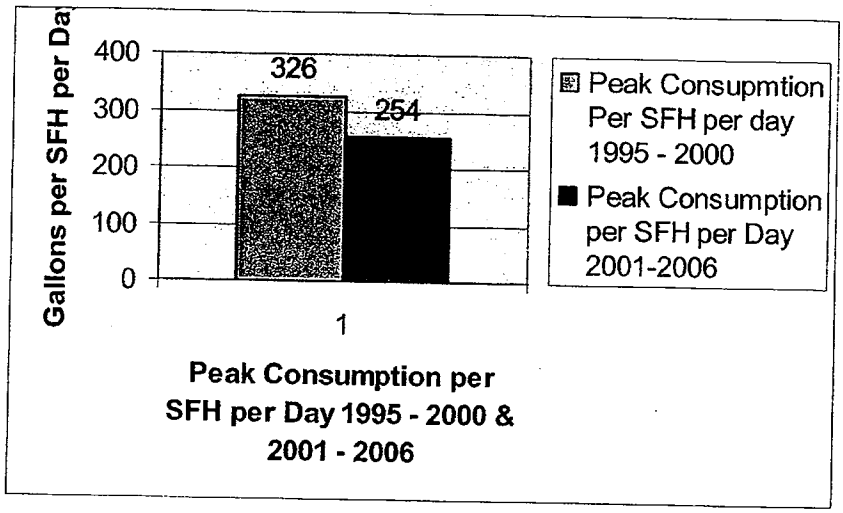
Due to the important nature of peak season water use, the District's peak season consumption per SFH for the years 1995-2006 is provided in Table 4. The District defines its peak season as June through September.

Table 4: Peak Summer Consumption for the years 1995-2006

Year	Consumption (in Millions of Gallons for the Months of June, July, August and September)	Number of Customers (as Single Family Households)	Avg. Peak Summer Consumption (in Gallons per SFH per Day)
1995	437	10,750	333
1996	458	10,950	343
1997	439	11,167	322
1998	474	11,359	342
1999	443	11,462	317
2000	424	11,696	297
2001	391	11,966	268
2002	383	12,383	254
2003	454	12,985	287
2004	436	13,793	259
2005	339	14,534	233
2006	412	15,152	223

Figure 2 shows a comparison of the peak consumption per SFH in gallons per day for the years 1995-2000 and 2001-2006.

Figure 2: Peak Day Consumption Comparison



The peak season average consumption per SFH per day during the benchmark period of 1995-2000 was 326 gallons per SFH per day. The average peak season consumption per SFH per day for the 2001-2006 period was 254 gallons per day, which is a 22% decrease in the average peak season per day consumption from the 1995 – 2000 benchmark period. This reduction equates to an average savings of 969,000 per day during the peak season of the 2001 – 2006 period. In general, reductions in peak summer water use are likely attributed to the District's irrigation conservation efforts including landscaping seminars, irrigation audit programs, and public information and education programs. Again, a portion of the decreases in 2001 and 2005 were likely due to dry summers with District-imposed curtailment in 2001 and conservation messaging in 2005.

Conservation Program for 2008-2013

Goals

The goals of a conservation program should reflect the drivers of why a utility is pursuing conservation. Conservation drivers can include meeting regulatory requirements, minimizing impacts on water resources, decreasing operating costs, deferring capital improvements, and obtaining new supply. The conservation driver(s) applicable to any one utility depend on that utility's specific supply situation and cost structures.

The District's conservation program is driven by the need to stay within the District's allotted water rights, remain within available supply limits set by regional supply agreements, meet the requirements of the Water Use Efficiency Rule and minimize impacts on the water supply resources.

The success of the conservation program and the implementation of conservation rate structures during the 2001 – 2006 period, has significantly reduced the average per day per SFH

consumption, and because of this, the potential for an equally significant reduction during the 2008 – 2013 period is diminished. Therefore, the Covington Water District's proposed goals for the 2008 to 2013 period are:

1. **To reduce the average per SFH per day consumption from 200 gallons per day (gpd) to 195 gpd or 86,000 gallons per day on an average annual basis at full implementation by the end of the 2008 – 2013 planning period.**
2. **To reduce the average per SFH per day consumption during the peak season from 254 gpd to 246 gpd or 121,000 gallons per day at full implementation by the end of the 2008 -2013 period.**
3. **To maintain the District's leakage at 8% or less of the total annual production at full implementation by the end of the 2008 – 2013 period.**

The conservation goals and the resulting conservation program are guided by District-established guidelines which take into consideration demographics and water use patterns within the District. The guidelines direct the District to focus on the following areas:

- **Single Family:** The District has predominantly single family homes and growth trends indicate this pattern is likely to continue. Therefore, the conservation program should have a strong emphasis on the single family sector.
- **Peak Season:** A great deal of water use occurs during the peak season summer months. Therefore, emphasizing efficient landscaping and irrigation practices is important.
- **School Education:** The residential nature of the service area means there are lots of school-aged children. Therefore, sending conservation messaging through school based education programs should be featured in the conservation program.
- **Landscape and Irrigation Companies:** Many customers use landscape and irrigation companies to install and/or maintain their landscapes. The significant growth in the service area means that many landscapes are being installed annually. Therefore, the conservation program should ideally target those companies and their employees with ongoing education.

Measures

The District's conservation program for 2008-2013 consists of the 23 measures listed in Table 5, and descriptions of each measure are discussed below. The program reflects a continuation and/or enhancement of many of the measures in the District's historical program, as well as the inclusion of several new measures. Similar to the District's previous conservation program, the program is a combination of local measures implemented by District staff and regional measures managed by Cascade. The combined measures target all customer classes, including single family, commercial/institutional and multifamily customers and include indoor, outdoor, hardware changes, behavioral and educational conservation activities.

The measures managed by Cascade are part of the District's 2008-2013 conservation program, which is partly based on Cascade's 2005 Conservation Potential Assessment (CPA). The CPA analyzed savings and costs for various measures specific to Cascade members' service areas.

It should be noted that the District will continue to support source meters, service meters, system leak detection and repair, and conservation pricing, although those activities are no longer considered official "conservation measures" under the Water Use Efficiency Rule.

Table 5: 2008-2013 Water Use Efficiency Program				
Conservation Measures	**Sectors**			**Local or Regional**
	SF	**MF**	**ICI**	
INDOOR PROGRAM-HARDWARE				
1. Clothes Washer Rebates	X			Local & Regional
2. Toilet Sales	X	X	X	Local
3. Toilet Rebates/Free Toilets			X	Regional
4. Showerheads & Faucet Aerators	X			Local & Regional
OUTDOOR PROGRAM-HARDWARE				
5. ET Controller Rebates	X	X	X	Regional
6. Rain Sensor Rebates	X	X	X	Regional
7. Irrigation System Audits	X			Regional
8. Rainbarrel Distribution	X			Local
BEHAVIOR CHANGE-INDOORS				
9. Leak Detection & Repair	X			Local & Regional
10. Shorter Showers	X			Local & Regional
BEHAVIOR CHANGE-OUTDOORS				
11. Allow Lawn to Go Dormant	X			Local
12. Demo Garden & Tours	X			Local
13. Landscape Seminars	X			Local
14. HOA Landscape Seminars	X			Local
EDUCATION				
15. Customer Newsletter	X	X	X	Local
16. Conservation Ad Campaign	X	X	X	Local
17. Classroom Visits & Water Festival	X	X		Local
18. Brochure Racks in Stores	X	X	X	Local
19. Vehicle Signs	X	X	X	Local
20. Conservation Kits	X	X		Local & Regional
21. Booth Events	X	X		Local
22. Garden Notes Newsletter	X	X		Local
SUPPLY-SIDE ACTIVITIES				
23. Conservation Pricing	X	X	X	Local

1. Clothes Washer Rebates

As part of the regional Cascade program, the District will continue to offering tiered clothes washer rebates as previously described. This measure will be offered to all customer sectors during years 1-3 of the six year plan. Evaluation will consist of tracking the number of rebates provided multiplied by the per-unit savings (using numbers from Cascade's CPA) for each efficient washer installed to determine the savings achieved.

2. Toilet Sales

The District will continue to make the toilets available until the demand diminishes. Evaluation will consist of tracking the number of toilets distributed, multiplied by the per-unit savings (using numbers from the Cascade CPA) for each toilet installed to determine the savings achieved.

3. Toilet Rebates/Free Toilets

This measure is an expansion of the toilet rebates the District has offered as part of the regional Cascade program. The measure will be expanded to include both water efficient toilets (1.6 gpf) and high efficiency toilets (1.2 gpf toilets). This measure will be offered to existing MF and ICI customers with pre-code toilets. There will be a stronger emphasis on this program on years 4-6 of the plan. Evaluation will consist of tracking the number of rebates or free toilets provided multiplied by the per-unit savings (using numbers from the Cascade CPA) for each efficient toilet installed to determine the savings achieved.

4. Showerheads and Bathroom Faucet Aerators

Showerheads and aerators will be distributed in conjunction with the toilet rebates offered to the ICI sector. This measure will be implemented during years 1-6 of the plan. Evaluation will consist of tracking the number of devices provided multiplied by the per-unit savings (using numbers from the Cascade CPA) for each efficient showerhead and aerator installed to determine the savings achieved.

5. ET Controller Rebates

As part of the regional Cascade program, the District will continue providing ET and Conservation controller rebates, as previously described. This measure will be implemented during years 1-6 of the plan. Evaluation will consist of tracking the number of rebates issued, times the per-unit savings (using numbers from the Cascade CPA) for each controller installed to determine the savings achieved.

6. Rain Sensor Rebates

As part of the regional Cascade program, the District will continue providing rain sensor rebates, as previously described. This measure will be implemented during years 1-6 of the plan. Evaluation will consist of tracking the number of rebates given times the per-unit savings (using numbers from the Cascade CPA) for each rain sensor to determine the total savings achieved.

7. Irrigation System Audits

As part of the regional Cascade program, the District will continue offering irrigation system audits, as previously described. To help ensure savings, the audit includes reprogramming irrigation system controllers based on audit results and installing a free rain shutoff device if the system does not already have one. This measure will be offered to high-volume users only in the single family sector during years 1-6 of the plan. Evaluation will consist of tracking the number of customers audited, times the per unit savings (using numbers from the Cascade CPA) to determine the total savings achieved by audit program participants.

8. Rainbarrel Distribution

Rainbarrels will continue to be distributed until demand diminishes or we can replace them with cisterns which will hold more water. Evaluation will consist of tracking the number of rainbarrels sold times 55 gallons saved per barrel.

9. Leak Detection & Repair

As part of the regional Cascade program, the District will continue to provide free leak detection dye tablets for customers to determine if their toilets are leaking and will also provide detailed information on how to fix leaks. This measure will be targeted at the SF and MF sectors during years 1-6 of the plan. Evaluation will consist of tracking the number of leak detection tablets sent to customers, times the per-unit savings (using numbers from the Cascade CPA) to determine the total savings achieved.

2. Shorter Showers

The District, in conjunction with Cascade, will promote shortening showers by one minute. The target audience for this behavioral measure is SF and MF customers who shower longer than the average shower time. This measure will be implemented during years 1-6 of the plan. Evaluation will consist of estimating the number of participants (using numbers from the Cascade CPA) times the per-unit savings for each participant to determine the total savings achieved.

11. Allow Lawn to Go Dormant

Cascade, along with the District, will promote letting lawns go dormant, rather than watering them regularly. It should be noted that allowing lawns to go dormant during the summer does not eliminate lawn watering completely. Lawn care experts still recommend watering the lawn once a month to keep it healthy. This measure will be marketed to the single family sector during years 1-6 of the plan. Evaluation will consist of tracking the number of customers whose usage does not substantially increase in the summer months to determine if this number increases with our promotion.

12. Demo Garden & Tours

The District will continue to add on to its demonstration garden and host garden tours to promote wise water use in the landscape. Evaluation will consist of tracking changes/additions

to the garden and tracking the number of customer accounts that have reduced summer water usage as a result of taking the tours.

13. Landscape Seminars

The District will continue to promote and present the landscape seminars. Evaluation will consist of tracking the number of customer accounts that have reduced summer water usage after attending the seminars.

14. HOA Landscape Seminars

This program is funded by Cascade to educate homeowners in developments with homeowners associations. Evaluation consists of tracking the number of customer accounts that have reduced summer water usage after attending the seminars.

15. Customer Newsletter

The District will continue to publish the newsletter with articles on conservation. Evaluation will consist of tracking the number of customers reached as well as with customer surveys.

16. Conservation Ad Campaign

The District will continue the summer conservation ad campaign in local newspapers in participation with neighboring water suppliers. Evaluation will consist of tracking number of ads printed and the newspaper circulation numbers to determine impact.

17. Classroom Visits & Water Festival

The District will continue the classroom visits and participation in the regional Water Festival. Evaluation will consist of Teacher evaluations.

18. Brochure Racks in Stores

The District will continue to stock brochure racks hosted by local stores. Evaluation will consist of tracking number of brochures stocked.

19. Vehicle Signs

The District will continue to display the vehicle signs on its vehicles to expose customers to our conservation messages. Evaluation will consist of tallying the number of signs in use and estimated miles driven to determine approximate number of customers who may have seen the signs.

20. Conservation Kits

The District will continue to distribute these kits, which include dye tablets to check toilets for leaks. Evaluation will consist of tracking number of kits distributed.

21. Booth Events

The District will continue to have a prominent display or booth at community events as they occur. Evaluation will consist of tracking the number of events participated in, number of customers who stopped by the booth, and number of handouts distributed.

22. Garden Notes Newsletter

The District will continue to distribute the "Water Wise Garden Notes Newsletter" to educate customers on water-efficient ways to maintain their landscapes. Evaluation will consist of tracking the number of customers receiving the newsletter and with a survey to determine if customers have made any changes resulting in water savings.

23. Conservation Pricing

The District will continue use of inclining block and seasonal rates to enhance conservation efforts by rate payers.

Estimated Savings and Budget

The estimated savings and costs of the conservation program are shown in Table 6. At full program implementation at the end of 2013, the program is estimated to save 86,000 gpd on an average annual basis and 121,000 gpd on a peak season basis or a total of 188,340,000 gallons during the 6 year period.

The District's program, including participation in Cascade's program, has a total budget over the six year planning period of approximately $830,370 which is an average annual cost of approximately $ 138,395. The program will be funded through rates and is included in the District's extended 2008 – 2013 budget.

The savings achieved by the program, and the corresponding progress towards reaching the District's savings goal will be estimated by tracking the number of devices and rebates distributed and multiplying them by their per unit savings. To track the savings from behavioral measures, assumptions will be made on the number of customers reached by conservation messaging. This will be determined by the level of program promotion that each behavioral message receives.

Table 6: Covington Water District's 2008 – 2013 Water Use Efficiency Program Savings & Costs

Regional or Local	Type	Program	Sector [1]				Current Program	2008-2013 Program	Savings (gpd) Achieved at End of 2013[2]	Annual Costs [3]
			SF	MF	ICI	Youth				
Regional	Indoor Hardware	1. Clothes Washer Rebates	X	X	X		Yes	Yes		
		2. Toilet Rebates		X	X		Yes	Yes		
		3. Urinal Rebates			X		Yes	Yes		
		4. Free Showerhead/Aerators	X	X			Yes	Yes		
		5. Ice Machine Rebates			X		Yes	Yes		
	Outdoor Hardware	6. Free Irrigation Audits	X	X	X		Yes	Yes		
		7. Irrigation Controller Rebates					Yes	Yes		
		8. Rain Sensor Rebates	X	X	X		Yes	Yes		$55,395
	Behavior	9. Toilet Leak Detection Kit	X	X			Yes	Yes		
		10. Decreased Shower Use	X	X			Yes	Yes		
		11. Less Partial Washer Loads	X	X			Yes	Yes		
		12.Allow Lawn to go Dormant	X				Yes	Yes	85,000	
Local	Education & Outreach	13. Public Awareness Ed.	X	X	X		Yes	Yes		
		14. Powerful Choices Program				X	Yes	Yes		
		15.Customer Newsletter	X	X	X		Yes	Yes		
		16. Ad Campaign	X	X	X		Yes	Yes		
		17. Classroom Education				X	Yes	Yes		
		18. Water Festival				X	Yes	Yes		
		19. Brochure Racks in Stores	X	X	X		Yes	Yes		$83,000
		20.Community Events Booth	X	X			Yes	Yes		
		21. Landscape Seminars/Demo Garden	X				Yes	Yes		
	Hardware	22. Toilet Sales	X				Yes	Yes		
		23. Rain Barrel Sales	X				Yes	Yes		
Total									85,000	$138,395

1. SF is single family, MF is multifamily and ICI is industrial, commercial and institutional. Youth relates to school based educational programs.

2. The savings cannot be precisely allocated between the regional and local programs since much of the local educational and outreach programs help foster participation in regional programs.

3. Funding for the District's proposed Water Use Efficiency Program is included in the 2008 - 2013 budget.

Evaluation

Evaluation of the Water Use Efficiency Program and goals are necessary to ensure anticipated savings are being achieved and to modify the Program if necessary to achieve the savings. The District has always placed a strong emphasis on the evaluation of its conservation measures. This emphasis is even more critical since evaluation is required under the new Water Efficiency Rule. Under the new rule the District is required to report annually, to customers and the State, on the progress towards meeting its' conservation goals. It is anticipated that the progress reports will be an addition to the currently required annual Consumer Confidence Report (Water Quality Report)

The performance of the District's Water Use Efficiency Program will be evaluated annually, if not more frequently, and can be adjusted if necessary to help meet the identified goals. The evaluation will vary to some degree for different types of measures, such as hardware measures versus behavioral measures. The evaluation is anticipated to include aspects such as tracking actual activity levels compared to planned activity levels.