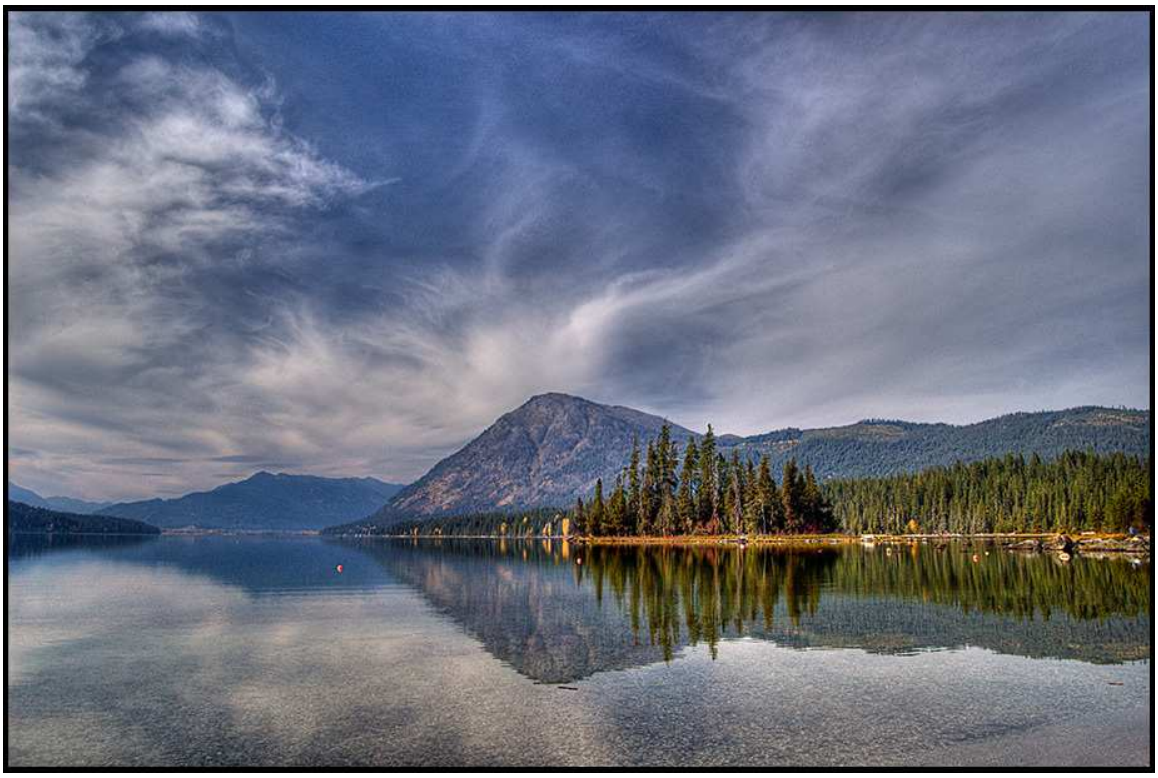
Lake Wenatchee Water District

COMPREHENSIVE WATER SYSTEM PLAN



for the

Whispering Pines Water Users Association, Brown Road Water Users Association, Lake Wenatchee Water Users Association, Mountain Park/Zufall and Lester Water Addition Systems

February 2011

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Prepared for the

WHISPERING PINES WATER USERS ASSOCIATION
BROWN ROAD WATER USERS ASSOCIATION
LAKE WENATCHEE WATER USERS ASSOCIATION
MOUNTAIN PARK/ZUFALL AND LESTER WATER ADDITION SYSTEMS

Prepared by RH2 Engineering, Inc.

Note: This report was completed under the direct supervision of the following Licensed Professional Engineers registered in the State of Washington.

8/20/2010

8/20/2010

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PURPOSE OF THE PLAN

Lake Wenatchee Water District (District) was created to establish an integrated water supply and distribution system to replace the five private community associations providing water along the north shore of Lake Wenatchee. The greatest benefit of a single utility would be gained by property owners within the water service area. While it is important to note the District has not entered into an assumption agreement with any of these systems, for the purposes of this WSP, the water service areas of the five systems are considered to be within the District's existing retail water service area. The District's retail water service area covers approximately 4 square miles and encompasses private and USFS lands.

The water system requires an ongoing capital improvement program to replace old components and install new components to meet the requirements mandated by federal and state laws. The primary purpose of Lake Wenatchee Water District's Comprehensive Water System Plan (WSP) is to identify and schedule water system improvements that correct existing system deficiencies and ensure a safe and reliable supply of water to current and future customers. This WSP meets the planning requirements contained within Chapter 246-290 WAC and provides a plan for meeting the water system needs of the five water systems through an integrated regional water supply and distribution system.

SUMMARY OF KEY ELEMENTS

The WSP presents a description of the existing water system and service area, a forecast of future water demands, policies and design criteria for water system operation and improvements, the operations and maintenance program, staffing requirements, a schedule of improvements and a financial plan to accomplish the improvements. The WSP also includes several ancillary elements that include a water use efficiency plan, a water quality monitoring plan, a wellhead protection plan and a cross-connection control program. A summary of the key issues related to these elements is provided in the following sections.

Existing Water System

The District was created by Chelan County Commissioners in April 2006 as a result of a public referendum in favor of forming a public water district. The purpose and goal of creating a public district was to establish an integrated water supply and distribution system to replace the five private community associations providing water along the north shore of Lake Wenatchee. The public referendum also established the District's retail water service area. The five systems located within the District's retail water service area boundary as follows.

- Group A Water Systems
    - Brown Road Water Users Association
    - Lake Wenatchee Water Users Association
    - Whispering Pines Water Users Association

- Group B Water Systems
    - Mountain Park/Zufall
    - Lester Addition Water Company

With the formation of the District, the Washington State Department of Health (DOH) entered into an Interagency Agreement with the District to develop a water system plan for the consolidation of the five core water systems (**Appendix I**) for the purpose of meeting the planning requirements in Chapter 246-290 WAC.s

The condition and age of the existing source of supply and storage facilities of the private associations and informal user groups varies. The existing system consists of the components listed below.

- 8 Reservoirs
- 2 Booster Pump Stations
- 5 Miles of Water Main
- 5 Water Sources

Chapter 1 provides a description of the existing water supply, storage and distribution system components for the five water systems that comprise the District.

Past Water Usage

The water system currently has 129 connections and serves an approximate population of 338. The District's historical water use for each system is shown in **Table ES-1**. Because supply records were not available for all systems in 2009, the period of record was used to establish the historical pattern of water use for the residents in the District. This average supply per connection of 390 gallons per day was used as the systems' demand per equivalent residential unit (ERU) and includes irrigation and system leakage. The average annual system demand estimated from the data is 18.4 million gallons.

Table ES-1
Historical Water Use

Year	Total Supply			Connections			Supply per Connection
	Annual (gal)	Average Monthly (gal/month)	Average Daily (gpd)	Full Time	Seasonal	Total	(gpd)
Brown Road Water Users							
2007	7,357,879	613,157	20,159	7	9	16	1,260
2008	2,191,460	182,622	6,004	7	9	16	375
2009	4,922,894	410,241	13,487	7	9	16	843
Lake Wenatchee Water Users							
2004	4,181,400	348,450	11,456	6	34	40	286
2005	4,170,300	347,525	11,425	6	34	40	286
2006	4,629,900	385,825	12,685	6	34	40	317
2007	Not Available			6	34	40	---
2008	Not Available			6	34	40	---
2009	Not Available			6	34	40	---
Whispering Pines Water Users							
2001	6,465,300	538,775	17,713	19	33	52	341
2002	6,433,350	536,113	17,626	19	33	52	339
2003	6,685,630	557,136	18,317	19	33	52	352
2004	6,215,760	517,980	17,029	19	33	52	327
2005	6,920,190	576,683	18,959	19	33	52	365
2006	8,686,840	723,903	23,800	19	33	52	458
2007	6,906,235	575,520	18,921	19	33	52	364
2008	Not Available			19	33	52	---
2009	Not Available			19	33	52	---
Mountain Park Water Users							
2009	Not Available			---	---	9	---
Lester Addition Water Users							
2009	Not Available			---	---	12	---

Future Water Demands and Water Supply

Future demands are based on District population growth rate equaling the projected Chelan County population growth rate for the next 20 years. The projected water demands for the District are shown in **Table ES-2**. The projected water demands are discussed further in **Chapter 2**.

Table ES-2
Future Water Demands

Description	Existing	Projected							
	2009	2010	2011	2012	2013	2014	2015 (+6 yrs)	2029 (+20 yrs)	Build-out
Residential ERU's	129	131	133	136	138	140	142	174	777
Demand per ERU (gpd)	390	390	390	390	390	390	390	390	250
System Average Day Demand (gpm)	35	36	36	37	37	38	39	47	135
System Maximum Day Demand (gpm)	70	71	72	74	75	76	77	94	270
System Peak Hour Demand (gpm)	**198**	**201**	**203**	**206**	**208**	**211**	**213**	**247**	**528**

The District has sufficient water supply sources to meet the projected 20-year growth period, as shown in **Table ES-3**. The Available Source Capacity represents the resultant gallons supplied per day assuming an 18 hour supply period. No additional sources are needed to supply projected growth if the existing available sources are maintained with their current capacities.

Table ES-3
Water Demand and Water Supply Availability

Description	Existing	Future Projections	
	2009	2015	2029
Required Source Capacity			
Maximum Day Demand (gpm)	70	77	94
Maximum Day Demand (gpd)	100,620	111,120	135,370
Available Source Capacity			
Lake Wenatchee Water Users Well (gpd)	32,400	32,400	32,400
Brown Road Well (gpd)	70,200	70,200	70,200
Whispering Pines Spring (gpd)	54,000	54,000	54,000
Lester Intake (gpd)	48,492	48,492	48,492
Mountain Park Water Users Well (gpd)	54,000	54,000	54,000
Total (gpd)	259,092	259,092	259,092
Surplus or Deficient Source Capacity			
Surplus or Deficient Amount (gpd)	158,472	147,972	123,722
Surplus or Deficient Amount (gpm)	110	103	86

1 = Available source capacity is based on the existing sources providing supply for 18 hours per day.

The two basic objectives of a water system are to provide a sufficient quantity of water to meet customer usage demands and to provide high quality water. **Chapter 3** discusses the Lake Wenatchee Water District's (District) ability to supply a sufficient quantity of water and identifies future source requirements. **Chapter 4** discusses the District's existing water sources, water rights and water use efficiency.

Water Source and Quality

The District's drinking water is supplied by three groundwater wells, one groundwater spring source and one surface water source. The Brown Road and Mountain Park wells and the Whispering Pines spring source are chlorinated. The Lake Wenatchee Users well is not chlorinated.

Water quality information on the individual water systems is limited and was based on information obtained from the Department of Health Sentry Database. In general, the individual water systems are in compliance with the surface and groundwater rules and the information is presented in **Chapter 3** of the WSP. The District will be required to with DOH to define the water quality constituents to be monitored as part of the revised water quality monitoring plan following the incorporation of the water systems.

Operations and Maintenance

The water system operator is responsible for normal day to day operations, preventative maintenance and water quality monitoring. Chapter 70.119 RCW and Chapter 246-292 WAC require operator certification for Group A public water systems; the water system operator for the District will meet these requirements.

A water system is comprised of a series of individual components, each requiring some level of routine maintenance and/or observation. The major activities and the maintenance and staffing needs required for the operation of the District's water system are summarized in **Chapter 6**.

Chapter 6 also presents the District's contingency operation plans for responding to potential emergency conditions and the elements of the District's cross-connection control program to comply with the requirements contained in WAC 246-290-490 of the Drinking Water Regulations. An example cross-connection control resolution is provided in **Appendix M**.

Water System Evaluation

The existing water system was evaluated to determine its ability to meet the policies and design criteria of the District and those mandated by DOH. The results of the evaluation are summarized below and discussed further in **Chapter 3**.

- The District has sufficient water supply to meet the demands of existing customers. However, alternate sources will be needed for the Lester Intake and Whispering Pines Spring since water quality from these sources is poor.
- Water from the Lake Wenatchee Users well is not disinfected and has had total positive coliform tests in the last few years. This well may require a chlorination system installed for the health and safety of the water system users.
- The Whispering Pines Mid and Upper Booster Pump Stations have adequate pumping capacity to meet the demands of the existing system.
- Pressure zone improvements are necessary in all systems except the Lake Wenatchee Water Users Association system. Several areas of the existing systems have low pressures that do not meet DOH minimum pressure requirements. These areas need to be converted to higher pressure zones.

- Additional storage is required in the District's system to meet the storage requirements of the existing customers and to provide sufficient capacity for future customers.
- The individual systems need to be consolidated to meet storage requirements and improve fire flow and low pressure deficiencies.
- A majority of the existing water system requires water main replacement to resolve deficiencies related to low fire flows, aging water main and undesirable materials.

Proposed Water System Improvements and Financing Plan

Improvements to the water system are necessary, primarily to resolve existing system deficiencies, but also to accommodate the increase in water demands from future growth. Improvements identified for the first six years of the capital improvement program (2011 to 2016) are summarized and discussed in further detail in **Chapter 8**.

In order to meet the long-term growth of the District and DOH standards, further system components will need to be added and upgraded. These improvements are identified in the 6 and 20 year capital improvement plan as discussed in **Chapter 8.** The total cost of the first six years of improvements is estimated at $1,838,000.

The District Commissioners are proposing that the cost of these capital projects be borne by the customers within the individual water systems. Possible funding options include either using area specific local improvement districts, area specific rates or a combination of both. The goal of the District is to allocate the costs of these improvements to the area that the improvement provides the benefit. Area wide benefits such as developing new or additional supply sources, new reservoirs or upgrading of distribution mains to provide fire flow would be of a general benefit of all customers and the costs of these improvements identified in the years 2017 -2030, borne equally by all customers.

The financial analysis of proposed District operations and maintenance is presented in **Chapter 9**. This analysis is intended to illustrate the feasibility of funding the operations and maintenance through monthly rates. A six year pro-forma was prepared based on the anticipated cost of providing operations and maintenance for a consolidated system. It is assumed that some efficiency in consolidated operations can be achieved by the District. Based on the proposed pro-forma, it is recommended that an initial base rate of $34 a month which includes 4,500 gallons of water and a commodity charge of $2.10 per 1,000 gallons for all water consumption over this amount on a monthly basis.

It is recommended that this financial analysis be supplemented by a water rate study that is proposed in 2013 to review the District's current financial policies, identify revenue requirements and the cost of service and recommend alternative rate structures that equitably recover the cost of providing service to the District customers.

LAKE WENATCHEE WATER DISTRICT
WATER SYSTEM PLAN
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APPENDICES

Introduction and Water System Description

1

INTRODUCTION

This Chapter describes the history of the Lake Wenatchee Water District (District) and provides a description of the existing water systems providing water within the District's retail water service area.

HISTORY AND BACKGROUND

The District was created by Chelan County Commissioners in April 2006 as a result of a public referendum in favor of forming a public water district. The purpose and goal of creating a public district was to establish an integrated water supply and distribution system to replace the five private community associations providing water along the north shore of Lake Wenatchee. As a result of the public referendum, the Chelan County Commission on May 30th 2006 adopted Resolution 2006-65 which formed the Water District and established the District's Boundaries (Appendix A).The five systems located within the District's boundary are as follows.

- Group A Water Systems
    - Brown Road Water Users Association
    - Lake Wenatchee Water Users Association
    - Whispering Pines Water Users Association
- Group B Water Systems
    - Mountain Park/Zufall
    - Lester Addition Water Company

There are also a number of existing residences within the District's boundary that have their own water source. The sources of water supply for these individual systems are either individual wells or surface or spring supplies. Some of these individual systems reportedly have either inadequate water quantity or quality or both.

The United States Forest Service's (USFS) Lake Wenatchee Ranger Station is located within the District's retail water service area. At the present time, the USFS has no plans to participate in the District's planning process or become part of the District.

With the formation of the District, the Washington State Department of Health (DOH) entered into an Interagency Agreement with the District to develop a water system plan for the consolidation of the five core water systems (**Appendix I**) for the purpose of meeting the planning requirements under Washington Administrative code (WAC) 246-290.

The goal of this Water System Plan (WSP) is to meet the planning requirements contained within Chapter 246-290 WAC and to provide a plan for meeting the water system needs of the five water systems through an integrated regional water supply and distribution system. This WSP summarizes the conditions of the existing water systems, evaluates the existing and proposed water demands, considers alternatives to providing water service, proposes a recommended capital improvement plan, operations and maintenance plan and water use efficiency plan, and proposes methods to finance improvements.

The greatest benefit of a single utility would be gained by property owners within the water service area. Advantages include fire protection, increased property value and the ability to secure a mortgage. Also, building permits may become contingent upon water service being available.

Inspections of the five existing water systems were conducted within the District's retail water service area to evaluate their condition and determine the feasibility of incorporating components, portions or entire water systems into the District's water system.

The condition and age of the existing source of supply and storage facilities of the private associations and informal user groups varies. While all five systems are meeting minimum DOH standards for either Group A or Group B systems, individual components within each of the water systems are reaching the end of their useful life and will need to be replaced in the near future. Compliance with the minimum system standards of DOH, including requirements for operation, maintenance, testing and reporting, represents significant investments in capital facilities, maintenance and operations – a substantial burden for the individual systems. The goal of an integrated water system is to use the best components from each water system to ensure that the minimum standards are met with respect to reliability, quality and quantity of water supply at the least overall cost to the benefitting properties.

DISTRICT MEETINGS

The District has regularly scheduled public meetings on the second Wednesday of each month at the Two Rivers Sand and Gravel Office located at 22750 Lake Wenatchee Highway.

DISTRICT LOCATION

The District is located along the north shore of Lake Wenatchee in west central Chelan County. Lake Wenatchee is located on State Highway 207 approximately 4 miles north of State Highway 2 from Coles Corner. The Stevens Pass Summit on Highway 2 is located approximately 16 miles to the west, and the City of Wenatchee, adjacent to the Columbia River, is located 33 miles southeast on State Highway 2.

PHYSICAL FEATURES

The water service area occupies a broad glacier-carved valley at the headwaters of the main stem of the Wenatchee River. Immediately south and to the north of Lake Wenatchee, the topography is mountainous and steep. Lake Wenatchee is approximately 5 miles in length and a little less than 1 mile wide, covering approximately 2,500 acres.

Much of the developable land within the water service area is owned by the federal government and managed by the USFS. The mountainous slopes close to the north shore of Lake Wenatchee will limit development of privately-held lands in these areas. Wetlands will also constrain development within the water service area, which have been identified north of Lake Wenatchee using US Geological Survey (USGS) database maps. **Figure 1-1** identifies the locations of wetlands and topographic features.

TOPOGRAPHY AND SYSTEM PRESSURE

The topography of the areas where water service is provided by the District varies greatly in elevation as shown in **Figure 1-4**. The lowest elevation within existing service area is along the Lake Wenatchee waterfront which has an elevation of approximate1y 1880 feet. The highest elevation currently served within the existing service area is located in the vicinity of the Whispering Pines Upper Reservoirs Nos. 1 and 2 which has an elevation of approximately 2,335 feet.

The District is currently composed of five separate water systems, as shown in **Figure 1-1**. **Figure 1-5** shows the hydraulic profile of the water systems. A description of each system is provided below.

The Whispering Pines Water Users Association is served by three pressure zones: the 2085, 2272 and 2335 Zones. The pressures in these zones are controlled by reservoir levels. The 2085 Zone is located along Fir Drive and Brown Road. The surface water level in the Whispering Pines Lower Reservoir No. 2 establishes the pressures in this zone. The maximum hydraulic elevation of this zone is 2,085 feet and serves customers with an elevation range of approximately 1,930 to 2,080 feet. Booster pump stations supply water to the 2272 and 2335 Zones from the 2085 Zone. The 2272 Zone is located along Lakeview Drive. The surface water level in the Whispering Pines Mid Reservoirs establishes the pressures in this zone, which is supplied by the Mid Zone Booster Pump Station. The maximum hydraulic elevation of this zone is 2,272 feet, and the zone serves customers with an elevation range of approximately 2,040 to 2,180 feet. The 2335 Zone is located on the northeast side of Lakeview Drive. The surface water level in the Whispering Pines Upper Reservoirs establishes the pressures in this zone, which is supplied by the Upper Zone Booster Pump Station. The maximum hydraulic elevation of this zone is 2,335 feet, and the zone serves customers with an elevation range of approximately 2,200 to 2,280 feet.

The Lake Wenatchee Water Users Association is served by one pressure zone, the 2128 Zone. The 2128 Zone is located along North Shore Drive. The surface water level in the Lake Wenatchee Water Users Reservoir establishes the pressures in this zone. The maximum hydraulic elevation of this zone is 2,128 feet, and the zone serves customers with an elevation range of approximately 1,880 to 1,960 feet.

The Brown Road Water Users Association is served by, the 2052 Zone. The 2052 Zone is located along the eastern portion of Brown Road and is supplied by the Brown Road Well. The surface water level in the Brown Road Reservoir establishes the pressures in this zone. The maximum hydraulic elevation of this zone is 2,052 feet, and the zone serves customers with an elevation range of approximately 1,900 to 2,040 feet.

The Lester Addition Water Company is served by the 2080 Zone. The 2080 Zone is located southwest of the intersection of Fir Drive and Lake Wenatchee Highway. The 2080 Zone

has a maximum hydraulic elevation of 2,080 feet, and the zone is served by the Lester Intake, which is located on Barnard Creek near the Whispering Pines Lower Reservoirs. Pressures in the zone are also established by the Lester Intake, and the zone serves customers with an elevation range of approximately 1,920 to 1,960 feet.

The Mountain Park/Zuffal water system, which is located on the northwest side of Lake Wenatchee, is served by one pressure zone. The system is supplied by well pumps located near 17679 North Shore Drive. Pressures in this zone are established by the well pumps, and the zone serves customers with an elevation range of approximately 1,880 to 2,030 feet.

The Whispering Pines Water Users Association, Lake Wenatchee Water Users Association and Brown Water Users Association systems mostly consist of seasonal use residences. According to the 2010 water facilities inventory reports submitted to DOH, 76 of the 129 residential connections are considered part-time recreational houses.

A summary of the physical conditions for the five water systems is summarized below.

RELATED PLANS

The following document provides additional information on the District's domestic water system and was consulted in the preparation of this WSP.

- *Chelan County Comprehensive Plan*, 2000 and annual updates.

This document provides planning and land use information for Chelan County (County). Additionally, land use and population projection information from the County's draft *2010 Comprehensive Plan* were incorporated into this WSP.

WATER SERVICE AREA

The location of the five existing water systems and their water service areas are shown in **Figure 1-1**. While it is important to note the District has not entered into an assumption agreement with any of these systems, for the purposes of this WSP, the water service areas of the five systems as shown in **Figure 1-1** are considered to be within the District's existing retail water service area. The District's retail water service area covers approximately 4 square miles and encompasses private and USFS lands. These properties are located on or adjacent to Lake Wenatchee along the Lake Wenatchee Highway.

The existing and future water service areas are also represented by the retail water service area boundary. The existing retail water service area is not in a critical water supply service area. There are no other overlapping private or public purveyors within the retail water service area with the exception of the USFS's Lake Wenatchee Ranger Station complex.

EXISTING WATER SYSTEM DESCRIPTION

The existing distribution systems and facilities for the five existing water systems under consideration for assumption are shown in **Figure 1-2** and **Figure 1-3.** The five separate systems currently serve a combined total of 129 residences within the individual water service areas as detailed in **Table 1-1**. The number of existing water system connections are estimates using the best available information and are based on the water facility inventories for the water systems and the number of parcels served based on data received from the

water system operators. The number of connections served by the District should be verified.

Table 1-1
Existing Water Service Connections

	Water System ID	Existing Connections
Brown Road Water Users Association	08850 U	16
Lake Wenatchee Water Users Association	45073 T	40
Lester Addition Water Company		12
Mountain Park/Zufall	47059 H	9
Whispering Pines Water Users Association	96093 J	52
Total		**129**

A detailed description of the existing facilities, distribution and service area of each of the systems is presented below.

Brown Road Water Users Association

Description

The Brown Road Water Users Association (Brown Road) is classified as a Group A water system and provides water service to 16 residences located on or adjacent to Brown Road. Seven of the property owners are full-time residents and nine use their property seasonally.

Water Supply

Water supply for the system is from a well that was constructed in 1993 and equipped in 2002. The well is approximately 255 feet deep with a static water surface elevation of 66 feet below the top of the casing. The well is cased to 23 feet and sealed with bentonite but it is unknown if it is equipped with a well screen. The shallow casing was keyed into bedrock and should preclude any of the shallow water from directly entering the well. A source meter is installed on the discharge piping and is read weekly. The Brown Road system has a water right for 90 gpm (0.2 cubic feet per second (cfs)) from the Barnard Creek and Well (certificate number 8453).

The well is equipped with a Grundfos 7.5 horsepower (hp) pump with a design capacity of 66 gpm. The well is located inside a 6-foot diameter manhole. The well supply is chlorinated using liquid chlorine located in a below-grade 6-foot by 8-foot vault with an above ground building. This is accomplished using a Stenner 45MHP2 injection pump and a 15 gallon storage reservoir with a 3 percent solution of sodium hypochlorite.

Water Storage

The well is controlled by float switches located in a 13,000 gallon concrete reservoir. The reservoir is a 12-foot buried concrete cube that was constructed in 1976. It is estimated that the overflow elevation of the storage facility is 2,052 feet with an operational storage of

approximately 11,800 gallons. A 2-inch diameter overflow pipe is located 6 inches below the top of the reservoir. The overflow pipe daylights to the south and has a screened end cap.

Distribution System

Customers located downhill of the storage reservoir are served by a 2-inch steel main in Brown Road. The 2-inch diameter steel distribution line was installed in the late 1960s and early 1970s. It is reported to be in poor condition, as are all of the older lines which are reportedly leaking. Service pressure in the distribution system is estimated to be between 30 and 70 pounds per square inch (psi) under static conditions.

The distribution system is not metered: therefore, actual domestic consumption is not known. However, it is expected to be higher than other users since the homes are mostly permanent residences on larger lots and water is used for irrigation.

Lake Wenatchee Water Users Association

Description

Located on the north shore of Lake Wenatchee near the intersection of Brown Road and North Shore Drive, the Lake Wenatchee Water Users Association (Lake Wenatchee Users) is classified as a Group A water system. The water system provides water service to 6 permanent and 34 seasonal services.

Water Supply

Water supply for this system is provided by a well, constructed in 1993 and equipped by the Lake Wenatchee Users in 2001. The 8-inch diameter well is approximately 137 feet deep with a casing length of 81 feet and 56 feet of open boring situated in bedrock. The well casing is perforated from 72 to 76 feet with 1/8-inch by 1-inch slots, and the static water surface elevation is at 34 feet below the surface. The top of the casing is at elevation 2,009.6 feet. The Lake Wenatchee Users have a water right for 359 gpm (0.8 cfs) from the Dickenson Well (claim number 8453).

The well is equipped with a 3 hp Berkley submersible well pump with a design capacity of 30 gpm. The well pump operates with a discharge capacity ranging between 17 to 27 gpm depending on the drawdown elevation of the water in the well. The pump controls and reservoir telemetry system are located in an above-grade well house.

The well discharge is equipped with a Sensus source meter located in the pump house and is unchlorinated.

Water Storage

Storage is provided by an 80,000 gallon ground level concrete reservoir constructed in October 2002. The reservoir is a Mt. Baker Concrete Reservoir with a 26-foot interior diameter and is nominally 20 feet in height. The reservoir's overflow elevation is located at 2,128.6 feet with a floor elevation at 2,109 feet. The operational storage for the well is 1-foot in elevation. There is a combination 4-inch diameter overflow and drain line that daylights into a large sump located adjacent to the reservoir.

The well pump is controlled by a float system in the reservoir and pumps into the reservoir through a dedicated 4-inch diameter ductile iron supply line. Under normal operation, the well pump is started and stopped by float switches located in the reservoir. However, it is possible to isolate the reservoir from the water system and operate the well using a separate pressure switch system that is connected to dual 120-gallon hydropnuematic pressure reservoirs.

An 8-inch diameter PVC pipe connects the reservoir to the distribution system located north of the Lake Wenatchee Highway in the vicinity of Crescent Beach.

Distribution System

The distribution system consists of steel and PVC pipe ranging in size from 2 to 4 inches in diameter. Approximately 1,500 lineal feet of old steel main was replaced with 4-inch diameter PVC pipe in 2004. There are some additional short sections of newer 4-inch diameter mains, but for the most part the majority of the distribution mains are between 20 and 60 years in age. There are no fire hydrants in the distribution system; however, there are a few blow offs and zone valves.

The system is not metered, does not have any treatment provisions and line sizes do not provide adequate fire flows. Most of the distribution system pipes are too small to incorporate in a regional system.

This system does not currently have a telemetry system.

Whispering Pines Water Users Association

Description

The Whispering Pines Water Users Association (Whispering Pines) is classified as a Group A water system. The Whispering Pines subdivision consists of 52 lots. The system serves 19 permanent residences and 33 additional peak seasonal residences. Whispering Pines was formed as part of the original plat that was recorded in 1970. The original water system consisted of Reservoir Nos. 1 and 2 and the Mid-Zone Pump Station. Whispering Pines rebuilt the Mid-Zone Reservoirs in 1994 and added the Upper Zone Booster Pump Station and reservoirs in 2005.

Water Supply

Water supply for Whispering Pines is provided by an unnamed spring located west of Barnard Creek at approximately 2,900 feet in elevation. The spring's 2-inch PVC piping was installed in 1993 and flows by gravity to a 4,000 gallon reservoir. Whispering Pines has a water right for 318.7 gpm (0.71 cfs) from the Barnard Creek and a tributary spring (certificate numbers S3-00959C and S4-26470C).

Chlorination is provided at the pump house next to Lower Reservoir No. 2. A 3 percent solution of sodium hypochlorite is used to provide disinfection of the supply water using a Pulsatron chlorine pump. Chlorine is injected into the supply line from Reservoir No. 1 to Reservoir No. 2 when the float switch opens the control valve allowing water to flow between the reservoirs. A chlorine residual analyzer measures residual chlorine in Reservoir No. 2. Typically, the chlorine residual in this reservoir averages 0.33 parts per million.

Water Storage

The distribution system is divided into three pressure zones. The lower zone is supplied from Lower Reservoir No. 2 and located near the intersection of Lakeview Drive and Fir Drive. This reservoir is a rectangular concrete structure that is approximately 12 feet in height and has an estimated capacity of 11,000 gallons. Lower Reservoir No. 1, which is a rectangular concrete vault, is 5.5 feet deep with capacity of 4,000 gallons. Reservoir No. 1 acts as an equalizing basin from the springs supply. Water from the springs is routed through this reservoir and overflows into the adjacent creek. Water from Reservoir No. 1 is transferred into Reservoir No. 2 using a control valve and float switch. Both reservoirs have an overflow elevation of approximately 2,085 feet.

Storage for the two other pressure zones is provided by a series of HDPE reservoirs. The Mid-Pressure Zone is supplied by two 11,000 gallon reservoirs (22,000 gallons total capacity) thar are 13 feet high and connected to the Mid-Pressure Zone by a 4-inch diameter PVC pipeline. The overflow elevation for these reservoirs is approximately 2,273 feet. The Upper Zone is supplied by two 5,000 gallon reservoirs (10,000 gallons total capacity) that are 10 feet high and connected to the Upper Pressure Zone by separate 4-inch diameter PVC fill and 2-inch diameter PVC draw pipelines. The overflow elevation for these two reservoirs is approximately 2,335 feet.

Booster Pump Stations

Booster pump stations are used to supply water to the two upper pressure zones. The Mid Pressure Zone is supplied by a single booster pump located in a pump house adjacent to Reservoir No. 2. A high speed (3,500 rpm) Berkley 10 hp centrifugal pump with a discharge capacity of 70 gpm supplies water to the Mid Zone Reservoirs. The operation of the booster pump is controlled based on a pressure transducer located in the pump station. When the pressure drops below the pressure setpoint, the pump is energized to operate for a set period of time and then turned off. Once the pump turns off, a time delay occurs to allow the system pressure to stabilize before the pump is allowed to turn on. If the system pressure is still below the setpoint, the pump is energized again for a set period of time and then turned off. This process continues until the system pressure reaches the setpoint.

The booster pump supplying the upper zone consists of a 3 hp Goulds horizontal multi-stage (15 stages) booster pump with a design capacity of 26 gpm. The pump station was constructed as part of the upper pressure zone improvements in 2005 and is located in a pump house adjacent to 16490 Lakeview Drive. The booster pump is controlled using a pressure switch located in the pump station.

Distribution System

The distribution system piping consists of 2-inch and 4-inch diameter PVC mains. It is reported that the distribution system is in generally good condition. There are several single-port pipe hydrants on the system that could be used for firefighting purposes. The installation of customer meters for the entire system was completed in the fall of 2009.

The Whispering Pines telemetry system was installed in 2002 and monitors chlorine level, mid system pressure, air temperature, humidity, total water meter and the upper systems water meter.

Mountain Park/Zuffal

Description

The Mountain Park/Zuffal (Mountain Park) water system is classified as a Group B system. The water system provides water service to one permanent and eight seasonal services. The water is chlorinated.

Water Supply

Water supply for the system is provided by a well located at the end of an unopened County right-of-way approximately 75 to 100 feet from the Lake Wenatchee shoreline near 17679 North Shore Drive. The well is located in a 4-foot diameter concrete manhole and is reportedly a hand dug well that is approximately 20 feet deep. The well is equipped with a pump capacity of 50 gpm. Adjacent to the well is a pump building housing four hydropneumatic reservoirs (two 50 gallon and two 80 gallon), a control system and the electrical service for the well pump and pump building. The water is chlorinated.

Water Storage

There are no facilities for the system other than what is provided by the hydropneumatic reservoirs, which appear to have a combined useable capacity of 200 gallons.

Distribution System

The distribution system is reportedly comprised of 1 to 2-inch diameter pipe to each of the residences. The exact location of the pipeline is unknown, with the exception that the pipeline is located in the unopened right-of-way, crosses North Shore Drive in a carrier pipe and continues to the south side of the Lake Wenatchee Highway. From this point, the pipeline continues along the south side of the highway to a point where it crosses the highway in the vicinity of the common access driveway to the lots served on the north side of the highway.

Lester Addition Water Company

Description

The Lester Addition Water Company (Lester) is classified as a Group B system. The Lester water system provides water service to 12 residences (1 full-time) located along Fir Drive in the plat of Lester Addition.

Water Supply

Water supply for the water system is from a surface diversion of Barnard Creek located upstream of the Whispering Pines Lower Zone Reservoir. The diversion consists of a settling pond in the creek from which the water is diverted into a screened 4-inch diameter intake pipe.

Water Storage

The water system does not have any storage facilities other than the settling pond at the intake pond.

Distribution System

The existing distribution system is reportedly comprised of 4-inch diameter and smaller pipe. The exact age of the pipe is unknown. It is assumed that the water system was installed around the time the plat was recorded in April 1964. It is assumed that the distribution system is comprised of steel pipe that is in poor condition.

System Evaluation

In general, the water distribution lines for the five systems will need to be replaced. The water mains are aged, leaky or undersized for the fire flow requirements. In addition, individual service line water meters are required to be installed for the systems that do not have these components.

WATER SERVICE AREA POLICIES

The water system does not wholesale water. Water service will not be permitted outside of the approved water service area boundary. Extension of the system within the water service area will be allowed. Extensions must meet the design and performance standards within this WSP and be approved by the District.

Currently, water from the domestic water system is used for irrigation purposes.

SATELLITE MANAGEMENT AGENCIES

The District is not planning to manage any satellite systems at this time.

DEFINITIONS

A. **District** shall mean the Lake Wenatchee Water District.

B. **Local Facilities** shall mean the water distribution facilities located adjacent to and providing water service to a specific parcel of property.

C. **Equivalent Residential Unit (ERU)** shall mean a unit of measure of daily water consumption used to equate non-residential or multi-family residential water usage to a specific number of single family residences. Monthly water service and connection charges are based on the number of ERUs each water service is assigned. An ERU will be defined as the estimated quantity of water used by a single family residence within a medium density (1/2 to 1/6-acre per lot) development or 250 gallons per day. Determination of the number of ERUs for each connection shall be assigned by the following minimum requirements.

- Water services with multiple residences shall be assigned 1 ERU per residence, except for those residences with occupancy of 6 months or less.
- Services providing water to multiple businesses will be assigned 1 ERU per business or higher as appropriate for the anticipated water use.
- Assignment of the number of ERUs may be adjusted based on actual water use records compared to District averages for single family residential water use.
- Multiple ERU water services shall be rounded to the nearest whole number.

- New water services will be assigned ERUs based on estimated water demand using the DOH *Design Manual*.

D. **District's Cost** shall mean all costs incurred by the District including, but not limited to, labor costs, material costs, consulting fees, equipment charges and administrative costs.

E. **Developer Extension** means an extension of the District's water supply system constructed by a person or party other than the District, pursuant to an approved Developer Extension Application.

F. **Developer Extension Application** means a document that sets forth the agreement between the Developer and the District pertaining to application for permission to build water facilities that will be connected to the District's water supply system. It should address the District's fees, which include connection (GFC) charges, time and material charges, performance and maintenance bonds, design, format and District standards, general conditions, warranties, check lists, prints and other fees as appropriate.

G. **Water System General Facilities** shall mean those facilities that are necessary to provide for water supply, transmission and storage to the local distribution systems serving the District's customers. Water system facilities include, but are not limited to, water storage reservoirs and standpipes, water supply sources, water supply pumping stations, water booster stations, water transmission mains, telemetry and control equipment, water system pressure regulation, operation and administrative buildings, and equipment and emergency operation facilities.

H. **District's Water Service Line** shall mean that portion of a water line in a street, right-of-way easement running from a water main or corresponding stub line to the property line of the customer. It shall include saddle, corporation stop, water service line, meter setter, meter, meter box or any combination thereof that may be required to furnish the requested water service.

I. **Water Meter,** located in the public right-of-way or easement, shall mean the device that measures the volume of water consumed by a District customer.

J. **Owner Water Service Line,** which runs from the water meter to the point of use, shall mean that portion of a water line lying on privately owned property.

K. **Temporary Water Service** means water service intended to terminate prior to the end of the useful lives of the facilities used to provide the water service.

L. **Connection Charge** means cash payment by the customer to offset a portion of the total facilities costs necessary to provide water service.

CONDITIONS OF WATER SERVICE

A. The District will provide the meter and District's water service line to serve the customer as part of the hook-up fee. For new developer extensions, the District's water service line is installed at the Developer's cost as part of the initial extension. The size of the meter has been determined based on estimated peak flow rates for the water service.

B. If excessive water pressure exists at the customer's service connection, the customer shall furnish and install at his own expense, a water pressure reducing valve. Property owners assume all responsibility for damage to property and/or persons resulting from excessive water pressure. The District will notify all customers in which static pressures at the meter exceed 80 psi.

C. The customer shall hook-up to the District-provided water meter service within 60 days of request by the District.

D. Prior to installation of meters by the District, inspection of the customer's plumbing is required to ensure cross connections to the irrigation system do not exist.

E. The water service line from the meter to the customer's point of use will be installed and maintained by and at the customer's expense.

F. If public water mains are extended adjacent to the customer's property after the District's request for customer hookup, it is the practice of the District to relocate the customer's water service meter to a location abutting the customer's property. The entity or person responsible for the extension shall pay all costs and expenses in relocating the water service. The customer shall perform all work and pay all costs in relocating the customer's water service line from the point of use to the relocated water service.

G. The customer shall indemnify and hold the District harmless from any and all claims, actions or causes of action of every kind and nature that may be asserted against the District as a result of the customer's ownership, installation, maintenance, use or service of the water service line commencing at the District's water meter and extending to the customer's point of use. The customer shall pay all costs and or attorney's fees incurred by the District in defending such action or actions.

DISTRICT AUTHORITY

The District shall have the power at any time, without notice, to amend, change or modify any rule, rate or charge, and make rates or contracts. All water service is subject to such power.

WATER SERVICES

Where Water Service is Provided and Service Limitations

The District will provide water service to all of the area within the approved water service area boundary where facilities are available and to other areas within the water service area boundary that may be in the best interest of the District. Water services are limited to existing customers and an established number of additional connections. Water usage and water rights will be monitored annually to determine adequacy of water rights and system performance. Water rights may limit water usage and number of connections.

Water Service Application Required

Applications for the use of water shall be made on printed forms to be furnished by the District. The applicant shall fully and truly state all purposes for which the water may be

required and also agree to conform to the rules and regulations as a condition for the use of the water. In case the premises of the applicant are connected for water service as a result of his application being accepted, the application shall be considered as a contract. The applicant, by his signature thereon, shall agree to abide by such rates; rules and regulations in effect at the time of signing the application or that may be adopted by the District and shall pay all bills promptly. An application form is provided in **Appendix E**.

Water Service Responsibility of District

The District will exercise reasonable diligence and care to furnish and deliver a continuous and sufficient supply of water meeting or exceeding regulatory requirements to the customer and avoid any shortage or interruption of delivery of the same. The District will not be liable for high or low pressure conditions, interruption, storage or insufficiency of supply, or loss or damage occasioned thereby. The use of water upon the premises of the customer is at the risk of the customer, and the responsibility of the District shall cease at the point of delivery of the water, except as required by state guidelines for water quality. The point of delivery shall be the point where the water service line connects to the customer's line. Water will be furnished for ordinary domestic, business and community purposes only.

Water Service Interruption

The District will exercise reasonable care to provide adequate and continuous water service but does not guarantee the same and shall not be liable for injury, loss or damage resulting from any failure or curtailment of water service, nor shall such failure or curtailment constitute a breach of contract. The District shall have the right to temporarily suspend water service for the purpose of making repairs or improvements to its facilities. In such case, when practicable, advance public notice shall be given and every effort will be made to make interruptions as short as possible and at such times as will cause the least inconvenience to the customer.

Installation of Water Service Line

When a permit for a water service has been granted, the service pipe and connections from the main to the meter will be installed and maintained by the District and kept within its exclusive control. Water service lines and meters will be installed within 30 days of receipt of a completed water service application.

Water Service – Size and Location

The District will furnish and install a water service of such size and at such locations as the applicant requests, provided the requests are reasonable. It is preferable that water services not be over 300 feet from the meter to the point of use to maintain adequate pressure. Water service over 300 feet in length is permitted; however, the District will not guarantee adequate pressure for these water services.

The customer's water service pipe should be at a depth of 48 inches. The water service pipe shall be installed at a location mutually agreeable to the District and the customer. The District will install the meter, meter box and a short piece of pipe beyond the meter box, to which the customer will connect his water service.

Multiple Water Services

A single ownership parcel may serve up to three structures or dwelling units from a single meter. The property owner shall apply for and obtain permission from the District prior to connecting multiple buildings and/or dwelling units. The District shall evaluate each application on a case by case basis.

Customer Line Repair Responsibility

The customer line on the private property side of the meter must be kept in repair by the owner or occupant of the premises. The owner will be responsible for all damages resulting from breaks in said pipe or water service along with water loss resulting from said break or leak.

If the customer's water service fails, he shall endeavor to determine if he has a broken water service line or a broken pipe inside or under the house. If a water serviceman is sent to the customer's premises at the customer's request after regular working hours, and it is determined that the problem is caused by failure of the customer's line or equipment, a charge may be made. A main shut-off valve is recommended to be installed by the customer for his use and convenience.

The District does not recommend resistance thawing (utilizing electrical energy to thaw pipes) and disavows all liability associated with its use. Damage to the customer's electrical system due to resistance thawing is the responsibility of the customer.

Water Service Line Leaks

A leak in the water service line from the meter to a point of use is the responsibility of the property owner. The District may reduce a property owner's metered water bill when a leak has occurred in the property owner's water service line or plumbing without the knowledge of or negligence of the property owner. An adjustment in the property owner's bill will be made for excess water registered by the customer's meter. The adjustment shall be based on a reduction in the metered consumption to an amount equal to 150 percent of the average of the previous 2 years metered water consumption for the same billing period. In the event the leak occurs on the water service of a new customer with no previous water consumption history, the District shall base the determination of excess consumption on the metered water consumption of adjacent properties of similar character for the same billing period of the two previous years, or if no such homes exists, postpone adjustment until a history has been established.

Water Service Meters

The District will install all the necessary meters for measuring the water service used by the customer. The meter, even though the meter charge has been paid by the customer, will remain the property of the District.

The District reserves the right to determine the size and type of meter to be installed for each specific location. The size and type of meter will depend on the rate of flow of water through the meter and the total water consumption.

All meters will be sealed by the District at the time of installation, and no seal shall be altered or broken, except by a District authorized employee.

Permanent changes in the size of the meters and/or water service connections shall be made on request of the customer. The customer will be charged for all conversions on the basis of the actual cost to the District. If a customer increases the total water consumption on the premises served to a point where the meter is operating beyond its rated capacity or decreases the total water use to a point where the meter is too large to accurately indicate the water used, the District may, upon notification to the customer, change the size of the meter and bill the actual cost to the customer.

The meters will be maintained by the District and will be inspected from time to time and tested for accuracy.

No meter will be placed in water service or allowed to remain in service that is known to have an error in registration in excess of 2 percent under conditions of normal operation.

The District, its duly authorized agents or employees shall have the right to install meters on the customer's premises and shall at all reasonable times have the right to enter or leave the customer's premises for the purpose of installing, reading, repairing, testing, maintaining or reinstalling the meter and its related appurtenances.

Customers shall take every reasonable precaution to protect meters from damage by frost or otherwise and shall be liable for injury to meters resulting from their neglect. It is unlawful for any person to disconnect or remove any meter when installed as provided in this WSP. In the case it becomes necessary to move a meter; a permit to do so must be obtained from the District.

Customers shall keep their premises adjacent to the meter free from all rubbish or material of any kind that will prevent employees of the District from having access to the meter.

Water Service Discontinuance

Water service may be temporarily discontinued because of unforeseen emergencies or other reasons beyond the control of District, or for necessary maintenance and repair of the water system. In case the supply of water shall be interrupted or fail by any such reason, accident or any other cause, the District shall not be liable for damages for such interruption or failure, nor shall such failure or interruption for any reasonable period of time be held to constitute a breach of contract on the part of the District or in any way relieve the customer from performing its obligations to the District.

Where water is wastefully or negligently used on a customer's premises that seriously affects the general water service, the District may discontinue water service if such conditions are not corrected after due notice by the District.

Water services may be discontinued to customers having delinquent bills if action is necessary to enforce collection.

PLUMBING FACILITIES REQUIREMENTS

Customers shall install, maintain and operate their plumbing systems using the District water supply in accordance with Washington State plumbing codes.

Swimming pools, wading pools, decorative pools or other such devices shall be constructed so the conduit or pipes supplying water from the District system shall be at least 1 foot above the top of the overflow gutter or maximum possible surface.

In the event a customer is served by more than one water service from the District on the same premises and the plumbing is interconnected within the premises, a check valve suitable to the District shall be installed on the customer side of each meter to prevent reverse flow through a meter.

The District will not be liable for any damage to the customer's electrical system as a result of resistance thawing of frozen pipelines.

PRESSURE AND SUPPLY

Pressure and supply will be maintained within the State requirements and guidelines, as indicated in the Distribution System Analysis section in **Chapter 3** of this WSP.

DISCONTINUANCE AUTHORIZED WHEN DISTRICT NOT LIABLE FOR CUSTOMER EQUIPMENT

The District shall not be liable for any loss or damage of any nature whatsoever caused by any defect in the customer's line, plumbing or equipment. The District may, without further notice, discontinue water service to any customer when a defective condition of plumbing or equipment upon the premises of the customer results or is likely to result in interference with proper water service or contamination of water.

DAMAGE TO DISTRICT PROPERTY

Any person damaging District-owned property or facilities shall pay a tampering charge to the District as provided herein. The term damaging shall have its ordinary dictionary meaning and shall include without limitation, vandalizing, destroying, applying graffiti, or other unauthorized painting or coloring, or affecting the facilities in such a manner that operating efficiency or appearance is negatively impacted.

The person and/or persons causing and/or substantially contributing to tampering, as provided herein, shall pay an amount equal to the aggregate of the following.

1. The District's cost of repair or replacement of the tampered with item.
2. Any other District's costs.
3. A fee for using the District's tampered with facility.

INSPECTION – ACCESS AUTHORIZATION

The District will only enter the customer's premises with their permission. The District will inform the customer that the District's survey of a customer's premises, by the District or his representative, is for the sole purpose of establishing the District's minimum requirements for the protection of the public water supply system, commensurate with the District's assessment of the degree of hazard. Should the customer fail to provide permission to access the premises for inspection purposes, action as outlined under the Cross-Connection Control Program may be taken.

CROSS CONNECTIONS

Cross connections between the District's potable water system and a non-potable system shall be protected by District-approved backflow prevention devices to avoid contamination of the District's water quality. Backflow prevention assemblies, when required, shall be installed and maintained by the customer. Backflow prevention assemblies installed shall be inspected and tested upon installation, after any repairs, annually and when considered necessary by the District. The District shall notify the customer not less than 60 days before due that an annual test is required. Tests must be performed by a person so certified by DOH and results delivered to the District. Backflow assemblies shall be repaired, overhauled or replaced whenever they are found to be defective. If a customer fails to install necessary backflow prevention devices, does not comply with testing requirements or does not repair faulty devices, the District will terminate water service.

COMPLAINTS

All complaints will be initially received by either the District's commissioners or operator and will be addressed by commissioners at their next scheduled meeting. If additional investigation is required, the work will be performed by the commissioners, district operator or consultant, as directed by the commission. Final resolution of the complaint will be addressed by the commission and a written response of the proposed resolution will be provided to the complainant.

DUTY TO SERVE

The District has the duty to serve all customers within the retail water service area if all of the following conditions can be met.

- The District has sufficient capacity to serve water in a safe and reliable manner.
- The applicant is in compliance with all applicable local plans, development regulations, and utility standards and policies.
- Sufficient water rights and supply are available.
- The District can provide such service in a timely and reasonable manner.

In areas requiring a developer's extension, timely water service does not start until all of the provisions of the developer's extension agreement are satisfied, application forms are filled out and applicable connection charges and fees are paid in full.

Additional conditions of water service regarding to the District's duty to serve will be established in policies adopted upon assumption of the first water system. Appeals to the District's policies will be addressed at regular or special meetings of the Board of Directors, and a record of the appeal shall be written in the meeting minutes.

LOCAL PLANNING CONSISTENCY

The GMA requires planning consistency from two perspectives. First, it requires consistency of plans among jurisdictions. This means that City and the County plans and policies must be consistent. Second, the GMA requires the implementation of the WSP be consistent with the comprehensive plans. The 2003 Municipal Water Law also requires that

water system plans be consistent with local plans and regulations. The signed consistency statement checklist from the County's planning department included in **Appendix O** documents the determination that this WSP is consistent with their plans and regulations.

The Chelan County Board of Commissioners adopted the *Chelan County Comprehensive Plan* in 2000. Since that time, the plan has been amended several times with the most recent amendment occurring in January 2010. The County's *Comprehensive Plan* guides development in unincorporated Chelan County and designates land use in the unincorporated Urban Growth Areas.

The District's retail water service area is in a rural setting located in unincorporated Chelan County. The basic planning data used in **Chapter 2** was based on the County's *Comprehensive Plan* and projections from the Office of Financial Management. As part of the WSP approval process, the County will be asked to determine if this WSP is consistent with the land use plan for this area.

CURRENT AND FUTURE LAND USE

The largest percentages of lands within the District's retail water service area are designated as Rural Residential and Rural Waterfront. Almost all of the existing connections in the District are located on lands designated as Rural Recreation and Rural Waterfront. **Figure 1-6** shows the land use designations within the retail water service area.

ADJACENT WATER SYSTEMS

The USFS's Lake Wenatchee Ranger Station complex is a Group A system consisting of three administration buildings, a shop, six permanent residences and five mobile homes. The complex's water system also serves five seasonally occupied summer cabins. The number of employees served varies depending on seasonal use. The water source for this Group A system is a well and pumping system capable of delivering 41 gallons per mintute (gpm). Reportedly, water rights exist for the well and water quality has not been a problem in the past. Static water level for the pump is 16 feet and the pump is set at 218 feet below grade. It is unknown if the source is equipped with a meter of the water is treated. Water from the well is pumped to a 50,000 gallon storage reservoir that provides supply to all users to maintain system pressure. The overflow elevation of this reservoir is reportedly 2,128 feet above mean sea level (MSL). The size and extent of the distribution system is unknown. However, several municipal-style hydrants (integral valve with operating nut on bonnet) have been observed around the complex.

There are two additional water system purveyors along the north shore of Lake Wenatchee. The existing retail water service area of the Alpine Water District is approximately 1.5 miles to the east and provides water service to the Lake Wenatchee YMCA camp. There is also one other Group A water system , the North Shore Park water system, which is located along the east side of the District's corporate boundary and north of Northshore Road.