1. DESCRIPTION OF WATER SYSTEM

1.1 Ownership and Management

This chapter describes the existing City of Yelm water system (water system) including current records, identification numbers, and contact information pertinent to the ownership and management of the water system. This section also defines the various service areas and city policies related to providing service.

1.1.1 System Name

The subject water system is listed in the DOH records as the City of Yelm Water System with the identification number of 99350J.

1.1.2 Type of Ownership

The Yelm water system is a Group A Community public water system, which is owned and operated by the City. The owner number is 6806.

The mailing address and contact information for the City Public Works Department is:

105 Yelm Avenue West
Yelm, Washington 98597
Phone: (360) 458-8410
Fax: (360) 458-8417

The emergency contact for the City is Tim Peterson, Public Works Director (360) 458-8499.

1.1.3 Management Structure

The Public Works Director, the Public Works Field Supervisor, and the Lead Water System Operator manage the water system's day-to-day operations. The Public Works Director, the Finance Director, the City Administrator, the Program/Project Manager, and the City Council work together to set water system policies and manage the water system's finances. Current water system staff and titles are listed below.

System managers:

- Tim Peterson, Public Works Director
- Kevin Ray, Public Works Field Supervisor

System-certified operators:

- Tim Peterson, Public Works Director
- Edward B. "Smitty" Smith, Lead Water System Operator
- Kevin Ray, Public Works Field Supervisor/Cross-Connection Control Specialist (CCCS)
- John Ivey, Water System Operator
- Tim Rarick, Water System Operator

1.1.4 Water Facilities Inventory Reporting Form

General water system facility data are summarized on the DOH Water Facilities Inventory (WFI) form. A copy of the current WFI form (prepared in May 2010) is provided in Appendix 1A.

1.2 System Background

The City is located in the Nisqually River Valley in southeastern Thurston County, Washington, approximately 17 miles southeast of Olympia. The planning area for the water system covers approximately 9.8 square miles, and includes the existing retail and future service areas described in Section 1.7. The City is located within a critical water supply service area. As defined in Washington Administrative Code (WAC) Chapter 246-290, a critical water service supply area is "a geographical area which is characterized by a proliferation of small, inadequate water systems, or by water supply problems which threaten the present or future water quality or reliability of service in such a manner that efficient and orderly development may best be achieved through coordinated planning by the water utilities in the area."

The retail service area includes the Tahoma Terra and Thurston Highlands master planned communities (MPCs). Both developments are located inside city limits. Phases of Tahoma Terra have been constructed. At buildout, Tahoma Terra is expected to represent 1,200 dwelling units and Thurston Highlands is projected to represent an additional 5,000 dwelling units. Buildout of Thurston Highlands is expected to take as long as 30 years.

This WSP includes water demand projections for these developments and identifies major infrastructure that would be required to serve them as described in the environmental review documents that have been prepared.

Because planning and permitting for the MPC are not finalized and also because of the economic slowdown that began in 2008, the City has elected to prepare a detailed CIP that recognizes the plan for the development of the MPC but does not include specific capital projects to serve that development at this time. At such time that it becomes clear that the initial development of the Thurston Highlands MPC is likely to begin, the City will develop a new CIP. Development of this new CIP will also entail evaluation of the monthly water rates and water system connection charges to ensure that costs for serving that development are shared equitably by all of the water utility customers.

The water system is supplied primarily by two wells: Well 1A and Well 2. A third well, Well 1, is only used as a monitoring well in the same wellfield as Wells 1A and 2. During normal operation, water is drawn from the two wells, disinfected, treated for low pH, and pumped through a dedicated line into the Baker Hill reservoir. The two production wells each have a capacity of 1,200 gallons per minute (gpm), but only one well can operate at any given time.

The City currently holds water rights totaling 796.66 acre-feet. Water rights held by the City will increase in the future pending the following:

1. The outcome of applications for new water rights made to Ecology in 1994. Chapter 4 describes the City's existing water rights and the status of current applications.
2. Negotiations with Ecology regarding pending water rights transfers.
3. Additional water rights the City may acquire in the future.
4. Resolution of a disputed water right of 112 acre-feet that was removed from the City's portfolio after Ecology recalculated the City's historic water rights in 2007. The status of the 112 acre-feet claimed

by the City is disputed by Ecology. While the City is not waiving or relinquishing its claim to the identified 112 aft, this Plan does not presently rely on that quantity for its current planning efforts.

Until additional water rights are secured, the City's ability to serve the identified service area will be limited.

The City completed construction of a water reclamation facility and distribution system in 1999. This facility treats the City's wastewater and produces Class A reclaimed water. This reclaimed water is used for irrigation and other uses that traditionally use potable water. A reclaimed water distribution system was constructed as part of the reclamation project, and the reclaimed water produced at the reclamation facility reduces the amount of potable water used for irrigation. The City will update its Sewer Comprehensive Plan, including a Reclaimed Water Plan, in 2010. A draft of the Reclaimed Water Plan has already been completed. Existing reclaimed water usage is described in Section 4.1.1.

This WSP reviews the need for new water infrastructure (including sources, storage, treatment, and transmission facilities), and identifies the system improvements necessary to allow the City to continue to provide a safe and reliable water supply while meeting the demands of the existing service area as well as the demands imposed by growth projected to occur over the 6- and 20-year planning horizons. A water system financial analysis is included in this WSP to determine changes to the existing rate structure and System Development Charges (SDCs) that are necessary to maintain and operate the system, fund the necessary capital improvements required to expand the water system, rehabilitate aging facilities, and ensure that the water system can continue to reliably distribute safe drinking water to the public.

1.3 Water System History

Note: The following description of the City's water system history is taken from the 2002 Water System Plan.

On December 8, 1924, the community of Yelm was incorporated as a City of the fourth class with a population of approximately 300 people. Incorporation allowed the City to issue bonds to construct a water system. Three disastrous fires had occurred in 1908, 1913, and 1924, and a new water system was needed for fire protection. Five-percent General Obligation Bonds, in the amount of $6,500, were issued for that purpose on September 1, 1927. During the same period, additional construction amounting to more than $10,000 was paid for in warrants.

In 1945, the City Council's Water Committee operated the Water Department. Operation and Maintenance (O&M) work was done by the members of the Water Committee due to a labor shortage caused by World War II. Water was obtained from two wells. The original well was dug to a depth of 35 feet and the second, developed by the Army in preparation for summer maneuvers, was drilled to a depth of 90 feet; however, as no water was found at that depth, the casing was installed at the 35-foot level.

In 1945, the distribution system was primarily comprised of 2-inch galvanized iron mains. Some 4-inch-diameter pipe had been laid at the north end of the City and a 4-inch galvanized iron main led from the well to the business district. However, the balance of the system consisted of 2-inch and smaller galvanized iron pipe. Standpipes with 2½-inch hose thread connections and underground stop and waste valves were provided for fire hydrants. Two 1,000-gallon pressure tanks constituted the only reserve supply. There was no fire reserve.

The City Fire Department was established in 1926, and in 1946 the City was included in the newly formed Thurston County Fire District No. 2. A 50,000-gallon water tower, 125 feet high, was erected in 1948 under an ordinance creating $20,000 of water revenue bonds. Also included were improvements to the distribution system, including the installation of 4- and 6-inch water mains in an 11-block area downtown and the addition of nine fire hydrants.

In 1949, the well site location for Well 1 was approved, and in 1950 the well was completed. With the installation of Well 1, the irrigation district of Yelm Prairie was discontinued when the more efficient source of groundwater for irrigation purposes became widely used. Well 2 was installed in the system in 1958. In added to the well site location. A total of $40,000 in improvements was made under this revenue bond.

Over the last several decades the Yelm water system has expanded to meet the City's population and industrial growth. In 1976, plans were approved for the 500,000-gallon Baker Hill reservoir, which is located in the southern area of the City.

A fire in Yelm's City Hall in 1986 destroyed many of the records on file, including the water system information. Documentation is lacking for the approvals of Well 2 and the 50,000-gallon water tower. DOH records were reviewed and copied to help replace the destroyed records. The City also maintains on file the approvals and as-built plans for numerous water main extensions that have been completed since the fire.

A third well, known as the Casavante Well, was added to the system in 1990. The well was dedicated to the City for use as a public water supply. A pump house was constructed and the well was connected to the distribution system via 10-inch-diameter water main. Telemetry system upgrades were also completed in 1990, connecting the third well to the well operations communication network. Using grant money from a Community Development Block Grant, Well 3A was drilled in 1999 to replace the Casavante Well. In April 2000 Well 3A was determined to be a groundwater source under the influence of surface water. At that time the water rights of Well 3A were transferred to Wells 1A and 2 and Well 3A was physically disconnected from the distribution system.

1.3.1 Comprehensive Water Plans

A Comprehensive Water Plan for the City was prepared in 1974. The City never adopted this Plan, nor did the State of Washington approve it. The Plan, which addressed water system needs through 2000, was prepared to meet criteria for receiving construction grant assistance from the State.

A second Comprehensive Water Plan was prepared in 1989, and was approved by DOH in 1990. In 1992, the Comprehensive Water Plan was updated to include the area beyond the City's water service limits and within a proposed urban growth boundary. The proposed urban growth boundary was adopted by the City and Thurston County Commissioners in 1995. With the planning area defined, the City continued with comprehensive planning requirements, which included refining the population projections, defining utility service areas, and determining allowable zoning designations.

The Comprehensive Water Plan was again updated in 1995, and was approved in 1996 by DOH. The Plan revised the population projections and hydraulically modeled the distribution system to determine system efficiencies. A list was produced of recommended improvements that would enhance fire flow and water quality. The Plan also identified the need to increase water rights, construct a corrosion control system, install a new storage reservoir, construct chlorine contact facilities, and make distribution system improvements.

The City received a $750,000 Community Development Block Grant from the Washington State Department of Community Trade and Economic Development (CTED) in 1998. This grant money was used to complete three major system upgrades identified in the 1995 Plan:

1. Construction of a new well house, chlorine contact facility, and replacement well (Well 3A) for the Casavante Well.
2. Installation of a new sodium hydroxide corrosion control system and dedicated chlorine contact line for the supply water from Wells 1 and 2.
3. Installation of water distribution line improvements to increase capacity and fire flows throughout the City system.

The most recent Comprehensive Water Plan was prepared and approved in 2002. The Plan identified the need for a new storage tank, which was later built near the Public Works building. After construction of this tank the downtown tank was taken offline. Other recommended improvements included providing reclaimed water service to the park on Canal Road, implementing a leak detection program, and installing hydrant locks to help prevent theft. Other capital projects identified in the 2002 Plan included replacement of the Well 2 pump with a 1,200 gpm pump, rehabilitation of Well 1 (now Well 1A) and installation of a 1,200 gpm pump in that well, and installation of a standby generator at the wellfield. All of the major capital projects identified in the 2002 Plan have been completed. These projects were primarily funded through $2,595,000 in revenue bonds that were issued on April 23, 2003.

This WSP has been prepared to document the condition of the Yelm water system as of the end of 2008. Where appropriate and feasible, water production and consumption records for 2009 have been provided for reference and used to evaluate system capacity.

1.3.2 Geography

The community of Yelm lies in an area known as the Yelm Prairie. This area was occupied by glacial meltwaters during the receding stages of the Vashon Glacier and generally has little change in elevation. Topography is depicted on the area's topographic map (created from Light Detection and Ranging [LiDAR] data obtained from the Puget Sound LiDAR Consortium) shown in Figure 1-1.

The central portion of the study area, or the existing city limits, lies approximately 340 feet above mean sea level (msl). The land slopes upward to the south and west with the highest portion of the study area located at an elevation of 512 feet above msl.

The average annual precipitation is reported to be about 40 inches. Runoff normally occurs from south to north toward the Nisqually River, with the surface drainage picked up by Thompson Creek, Yelm Creek, and the intermittent Yelm ditch system.

1.4 Neighboring Purveyors

A number of existing Class A and Class B water systems that are not connected to the Yelm water system are located adjacent to and inside the Yelm water service area. The neighboring Class A water systems are described in Table 1-1. Data presented in Table 1-1 were collected during a review of WFI forms on file at DOH. A list of the adjacent Class B systems is presented in Table 1-2. The location of the neighboring Class A and Class B systems is identified in Figure 1-2.

1.5 Ordinances/Bylaws

Chapter 13.04 of the Yelm Municipal Code (YMC) regulates the water system. A copy of the current Chapter 13.04 is provided in Appendix 1B. Sections of the City's development guidelines (Appendix 1C), this WSP, and the Fire Marshal's requirements for fire flow rates (Chapter 3) outline the minimum system requirements and system operations.

1.6 Inventory of Existing Facilities

The following is an inventory of the existing water system. A more comprehensive assessment of the system's capabilities and deficiencies is provided in Chapter 3. This Chapter includes:

- A general description of existing system facilities and major components
- A description of the current number of connections served by the water system.

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Figure 1-1
City of Yelm
Service Area Topography

Legend

- City of Yelm
- Urban Growth Area
- Existing Active Tanks
- Existing Active Wells
- Roads
- 10- ft Contours

Topographical Information obtained from Puget Sound Light Detection and Ranging Data (LiDAR) Consortium

0 Feet 2,000

N

Table 1-1. Adjacent Class A Water Systems

System		Nisqually Pines Community Club: 59591					Kings Meadow Mobile Home Park: 69168	Western Airpark: 95057			Andrew's First: 17241		Zebras Aqueous Substance: 61131	Prairie Elementary: 24413		Crystal Springs: 30049	
Storage capacity (gal)		184,000					0	1,000			40,285		0	129,000		0	
Active connections		763					30	35			113		2	1		14	
Approved connections		Unspecified					30	49			120		2	2		18	
Permit category color		Green					Green	Green			Green		Green	Green		Green	
Water right (acre-feet)		62	180	180		180	20	81			Unknown		26.02	23.9		7.2	
Source category	Well	X	X				X	X	X	X	X	X	X	X	X	X	X
	Well field				X												
	Well in a well field			X		X											
Use	Permanent		X	X	X	X	X	X	X	X	X	X	X		X	X	X
	Seasonal													X			
	Emergency	X															
Source metered		N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y
Treatment	None	X					X	X	X	X			X	X	X	X	x
	Chlorination		X	X	X	X											
	Filtration																
	Fluoridation																
	Irradiation (UV)																
	Other			X	X	X					X	X					
Depth to first open interval		175	198	403	403	428	133	76	139	133	164	92	180	90	175	119	63
Capacity (gpm)		110	210	485	860	375	200	50	38	105	60	86	70	25	150	48	45
Source location	¼, ¼ Section	SE NW	SE NW	SE NW	SE NW	SE NW	NE NE	SW SE	SW SE	SW SE	NW NE	NW NE	NE NE	SW SW	SW SW	NW SE	NW SE
	Section number	17	17	17	17	17	18	28	28	28	18	18	14	29	30	18	18
	Township	17N	17N	17N	17N	17N	17N	17N	17N	17N	17N	17N	17N	17N	17N	17N	17N
	Range	02E	02E	02E	02E	02E	02E	02E	02E	02E	02E	02E	01E	02E	02E	02E	02E
Water quality violation		Fecal coliform bacteria (June 2000)					-	-			*E-coli* (Sep. 2003) Copper (Aug. 2005)		-	*E-coli* (Nov. 2005)		-	

Table 1-2. Adjacent Class B Systems		
Within Yelm UGA	Outside Yelm UGA	Yelm Area Water System Name (from 2002 Comprehensive Water Plan)
☑		Bridge Court Water System
☑		Bull Run Water System
☑		Dad's Water System
☑		Edith's Water System
☑		Ernheart Water System
☑		Gordon Estates Water System
☑		Greenfields Mobile Home Park
☑		Hull, Linda A Water System
☑		McCarney
☑		Meadowlark Trailer Park (currently inactive)
☑		North Yelm Water Company
☑		Oakridge Water System
☑		Plaza Timber Estates Water System
☑		Ranger
	☑	Witt Water System LL-0249
	☑	Clary Water Association
	☑	Orndorf Water System

1.6.1 Treatment Facilities

A caustic soda treatment system was installed in May 2000 to increase the pH level in the potable water supply from 6.5 to a pH level between 7.1 and 7.25 in order to reduce the corrosiveness of the water supply and copper and lead levels in the distribution system. The system is located in the east end of the well house of Well 1. The treatment system includes a 2,000-gallon, 8-foot-diameter polyethylene caustic soda storage tank, pH sampling and recording equipment, a mechanical diaphragm metering pump, a spare metering pump, and the necessary controls and alarms to monitor and record the systems operation.

The existing system facilities include the following key components: water supply sources, treatment facilities, distribution systems, storage reservoirs, and service connections. The Yelm water system has no interties with any other water system. The locations of these components are presented in Figure 1-3.

1.6.2 Water Supply Sources

The City currently owns two groundwater sources that are used to supply the City with potable water. Wells 1A and 2 are located on Second Avenue between Washington and McKenzie Streets. The wells are approximately 30 feet apart and are 63 feet deep. Each well has a 12-inch-diameter well casing and each is protected in an individual well house. Each well has a capacity of 1,200 gpm. Hydraulic limitations limit pumping from the wells so that only one well can operate at any one time. The well pumps discharge directly to the Baker Hill tank through a dedicated 8-inch line. The system pressure is dependent on the water level within this tank. (In 2010 the City plans to complete improvements to the downtown wells to increase source capacity. This project is included in the CIP described in Chapter 8.)

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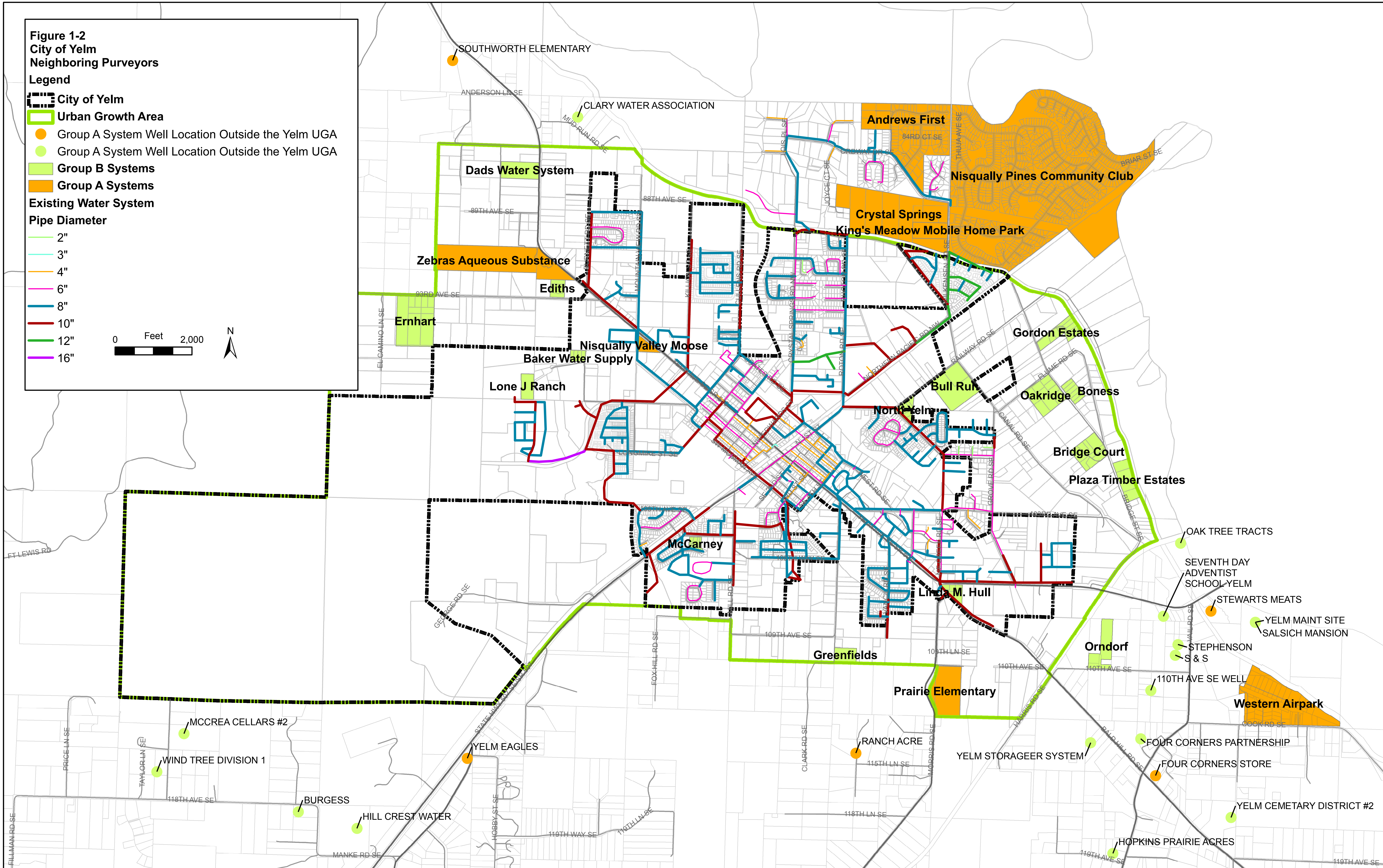

Figure 1-2
City of Yelm
Neighboring Purveyors

Figure 1-3
City of Yelm
Existing Service Area

Legend

- City of Yelm
- Urban Growth Area
- Existing Service Area
- Existing Active Tanks
- Existing Active Wells

Existing Water System

Pipe Diameter

- 2"
- 3"
- 4"
- 6"
- 8"
- 10"
- 12"
- 16"

0 Feet 2,000

N

ANDERSON LN SE
MUD RUN RD SE
86TH LN SE
UNNAMED PVT DRWY
YELM HWY SE/SR 510
RATHBUN RD SE
WALTON LN SE
88TH AVE SE
89TH AVE SE
83RD WAY SE
84RD CT SE
THUJA AVE SE
BRIAR ST SE
HEATHER LN SE
PORT ORFORD BLVD SE
LOIS PL SE
JOYCE CT SE
CRYSTAL SPRINGS RD SE
WILKENSON RD SE
BRIDGE ST SE
94TH LN SE
RAILWAY RD SE
FLUME RD SE
BRIDGE RD SE
CANAL RD SE
GROVE RD SE
WEST RD SE
92ND AVE SE
EL CAMINO LN SE
MOUNTAIN VIEW RD SE
KILLION RD SE
GUILDNER RD SE
97 ST WAY SE
92ND WAY SE
94TH AVE SE
BUTTON RD SE
NORTHERN PACIFIC RD NW
Public Works Tank
YELM AVE E
VAN TRUMP ST SE
PORTER RD SE
BERRY VALLEY RD SE
SW BERRY VALLEY
SW WASHINGTON AVE
SW OSMAN AVE
LONGMIRE ST SE
N 1ST ST
SE 2ND ST
SE 2ND ST
PRAIRIE PARK LN NE
104TH AVE SE
HILL RD SE
VAN NORHOP ST SE
Baker Hill Tank
VAN HILL RD SE
T LEWIS RD
GEORGE RD SE
109TH AVE SE
109TH LN SE
110TH AVE SE
110TH AVE SE
FOX HILL RD SE
SHAW RD SE
STATE HWY 507 SE/SR 507
CHARBONNEAU LN SE
WEISENBERGER RD SE
HOBBY ST SE
CLARK RD SE
LAUKERS LN SE
MORRIS RD SE
115TH LN SE
HARRIS RD SE
BALD HILL RD SE

Chlorine gas disinfection is provided for both wells. A dedicated 8-inch-diameter polyvinyl chloride (PVC) line between the well house on Second Street and the Baker Hill reservoir provides contact time to ensure that adequate disinfection is received. Additional contact time is provided in the Baker Hill reservoir prior to distribution throughout the City.

1.6.3 Distribution System

Table 1-3 shows the pipe types, sizes, and lengths of the City's distribution system. A map of the existing water distribution system is presented in Figure 1-3.

Table 1-3. Inventory of Water Pipes (Current)

Diameter (inches)	PVC	AC	Ductile Iron	Total System (feet)	Total System (miles)	Percent of Total Pipe
2	1,178			1,178	0.2	0.4%
3		226		226	0.0	0.1%
4	3,825	10,196		14,021	2.7	5.0%
6	30,727	17,348	30	48,105	9.1	17.2%
8	134,734	7,001	638	142,373	27.0	51.0%
10	61,414	3,086		64,500	12.2	23.1%
12	7,408			7,408	1.4	2.7%
16	1,571			1,571	0.3	0.6%
Total feet	240,857	37,857	668	279,382		
Total miles	45.62	7.17	0.13	52.91		
% of total pipe	86.2%	13.6%	0.2%			

1.6.4 Storage Reservoirs

The water system currently has two storage reservoirs. The steel 500,000-gallon reservoir, known as the Baker Hill reservoir, is located in the southeast region of the City. The newer 500,000-gallon reservoir is located near the Public Works shop in the northern part of the City. There is a pressure transducer at each reservoir that controls the well pump operation. During normal operation, the water level of the Public Works reservoir "floats" off the level of the Baker Hill reservoir.

The two reservoirs are configured so that either can be taken down for maintenance. The Public Works reservoir uses a separate pressure transducer to operate the well pumps when the Baker Hill reservoir is offline.

1.6.5 Number of Service Connections (Existing and Approved)

In 2007, the water system had 2,214 service connections. This number of connections is documented in the WFI form included in Appendix 1A. In the 2002 Plan, the number of connections was identified to be 1,612, on average.

The number of connections can be broken down as shown in Table 1-4.

Table 1-4. Number of Existing Service Connections (2007)[1]		
Customer Type	No. of Accounts	Percent of Total Water Usage
Residential	1,994	71.3%
Commercial (businesses)	158	14.5%
Schools/daycare facilities	11	2.6%
Governmental	6	0.3%
Hotel	1	0.3%
Irrigation[2]	44	11.1%
Total	2,214	

1. These numbers represent the number of active connections per month averaged for 2007. The City completed a revised WFI in May, 2010 which listed 3,188 active connections (including each multi-family unit and transient accommodation as a separate connection).

2. The number of active irrigation accounts fluctuates throughout the year; the peak month has 80 active accounts, while a low month has only 9. The average number of active accounts for 2007 was 44.

DOH guidelines require that the number of service connections that have been approved by the water system but are not yet physically connected be identified. In Yelm a water meter is set at the time that the building permit is issued (rather than at a later date, such as at issuance of a certificate of occupancy) so there are typically no approved connections that are not connected.

Of the 2,214 average service connections in 2007, 1,994 were residential, 176 were non-residential, and 44 were irrigation connections. Additionally, the City had an average of eight reclaimed water connections. Table 1-5 presents the number of connections by billing class for the peak month in 2007 and averaged for the year. (The City submitted a revised WFI in May, 2010. This WFI listed 3,188 active connections and is included in Appendix 1A with the 2007 WFI, including each multi-family unit and transient accommodation as a separate connection).

1.6.6 Interties

The Yelm water system has no interties with any neighboring water system. As discussed in Section 5.4, the City's updated Contingency Plan included an evaluation of potential interties.

1.6.7 Pressure Zones

The City currently has only one pressure zone. The existing tanks operate at an elevation of 477 feet. This 477 pressure zone can service the existing service area. A new pressure zone at an elevation of 630 feet will be created as part of the construction of the improvements described in this WSP. Additional localized pressure zones may also be developed in the future to serve outlying portions of the service area.

1.6.8 List of Related Plans

The following plans and documents are related to and have direct impact on this WSP and the water system operation. A brief description of each document's relevance to the water plan is included.

- Thurston Highlands Master Planned Community Final EIS Technical Reports. December 2008. City of Yelm Community Development Department. Identifies planned development, projected population growth, and water usage within the Thurston Highlands MPC. Water usage projections for the MPC have been prepared for this WSP and are more conservative than those presented in the Environmental Impact Statement.

Table 1-5. Number of Connections by Billing Class (2007)			
Class	Description	Peak Month	Average
1	Residential inside ⅝"	1,746	1,682
2	Commercial inside ⅝"	116	114
3	Residential outside	263	262
4	Commercial outside	2	2
5	Commercial inside 1"	12	12
6	Commercial inside 1½"	18	18
7	Commercial inside 2"	14	14
8	Commercial inside 3"	3	3
9	Commercial inside 6"	1	1
11	Commercial outside 2"	1	1
12	Residential inside 1"	3	3
13	Residential inside 1½"	1	1
14	Residential inside 2"	1	1
15	Senior citizen: no minimum	34	32
19	Residential inside 3"	1	1
27	Irrigation	80	44
30	Commercial inside 1" master	4	4
31	Commercial inside 1½" master	5	5
32	Commercial inside 2" master	2	2
37	Residential inside 1" master	2	2
38	Residential inside 1½" master	6	6
39	Residential inside 2" master	3	3
42	Residential inside 4" comp. master	1	1
	Total	2,319	2,214
20	Reclaimed water	11	8

- TRPC. October 2007. Buildable Lands Report for Thurston County. Provides population forecasts for the City and the Yelm Urban Growth Area (UGA). These projections are used in the water demand forecasts presented in Chapter 2.
- City of Yelm Development Guidelines. April 2007. Prepared as a supplement to the Washington State Department of Transportation/American Public Works Association standard specifications for road, bridge, and municipal construction, plus appropriate City policies, codes, and ordinances. See Appendix 1C for guidelines related to the water system.
- City of Yelm Sewer Comprehensive Plan. 2011. A draft of this plan will be prepared in 2010/2011. This will include a Reclaimed Water Plan, which has already been drafted.
- City of Yelm Comprehensive Plan and Joint Plan with Thurston County. 2009. Provides information regarding zoning requirements and service areas. This document sets the short-term and urban growth boundary limits and provides population projections. See Appendix 1D for Chapter V of the Comprehensive Plan - Public Facilities and Utilities.
- City of Yelm Comprehensive Water Plan Update. 2002. Provides existing information about the water system, including policies, water quality, infrastructure, and capital improvement needs.

- City of Yelm Wellhead Protection Plan. 2002. Identifies capture zones for the City's potable water supply. This document also provides recommendations for zoning in the capture zone. As plans for SW Yelm No. 1A Well are finalized, this WSP will need to be updated (see Appendix 5A).
- City of Yelm Cross-Connection Control Plan. 2002. This document provides recommendations on procedures and policies to protect the City's potable water quality from contamination from cross-connections and prevents cross-connection and backflow from other utilities (see Appendix 6H).
- South Thurston County Urban Growth Areas Abbreviated Coordinated Water System Plan, Thurston County Water and Waste Management. June 2000. Provides a coordinated approach to water use in the south Thurston County area.
- Nisqually Watershed Management Plan. October 2003. Documents goals, policies, programs, and planning statements prepared by the Water Resource Inventory Area (WRIA) 11 planning unit.

1.7 Service Areas

Yelm is located about 17 miles southeast of Olympia. The water system currently serves the area within Yelm city limits, areas of the Yelm UGA, and one area north of the city limits outside of the Yelm UGA.

WAC 246-290 defines a water service area as the specific area or areas where a water system currently provides, or plans to provide, water service. This area may consist of (a) the existing service area, (b) the retail service area, (c) the future service area, and (d) areas where water is provided to other public systems. The following sections describe each of these components of the Yelm water service area.

1.7.1 Existing Service Area

A water system's existing service area is the area where there are "pipes in the ground." Figures 1-3 and 1-7 show the existing water system service area for Yelm.

1.7.1.1 Existing Zoning and Land Use

Yelm's Comprehensive Plan and Joint Plan with Thurston County addresses future land use, development, and population trends within the Yelm UGA. Appendix 1D presents the chapter of the Comprehensive Plan that describes public facilities and utilities, including the water system.

The City's current zoning and land use designations are shown in Figures 1-5 and 1-6 with an overlay of the water system map.

Based on an analysis of the City zoning designations within the current City limits, there are approximately 693 acres of commercially zoned land, 1,161 acres of residential land, and 190 acres of industrial land. The Buildable Lands Report developed by the TRPC in 2007 estimates that there are 217 acres of land available for commercial development within the City and 6 acres available for commercial development within the UGA. The TRPC also states that the land supply for industrial purposes within the City and the UGA is 108 acres and 80 acres, respectively. These numbers include vacant or partially used lots as well as redevelopable land.

As of the end of 2008, commercial building square footage was approximately 556,000 square feet (per City of Yelm Community Development). In 2005, a retail market study estimated 51 percent of total commercial acreage (234 acres) was vacant or redevelopable.

In order to estimate the available residential land supply, TRPC determines the average number of dwellings per acre based on existing data and then determines the number of dwellings the land can support in the future; this number has been determined to be 9,130 for the City and the rural UGA.

Figure 1-5
City of Yelm
Current Zoning

Legend

- City of Yelm
- Urban Growth Area
- Low Density Residential
- Moderate Density Residential
- High Density Residential
- Commercial
- Heavy Commercial
- Large Lot Commercial
- Central Business District
- Industrial
- Institutional
- Master Planned Community
- Parks and Open Space

Existing Water System

Pipe Diameter

- 2"
- 3"
- 4"
- 6"
- 8"
- 10"
- 12"
- 16"

0 Feet 2,000

N

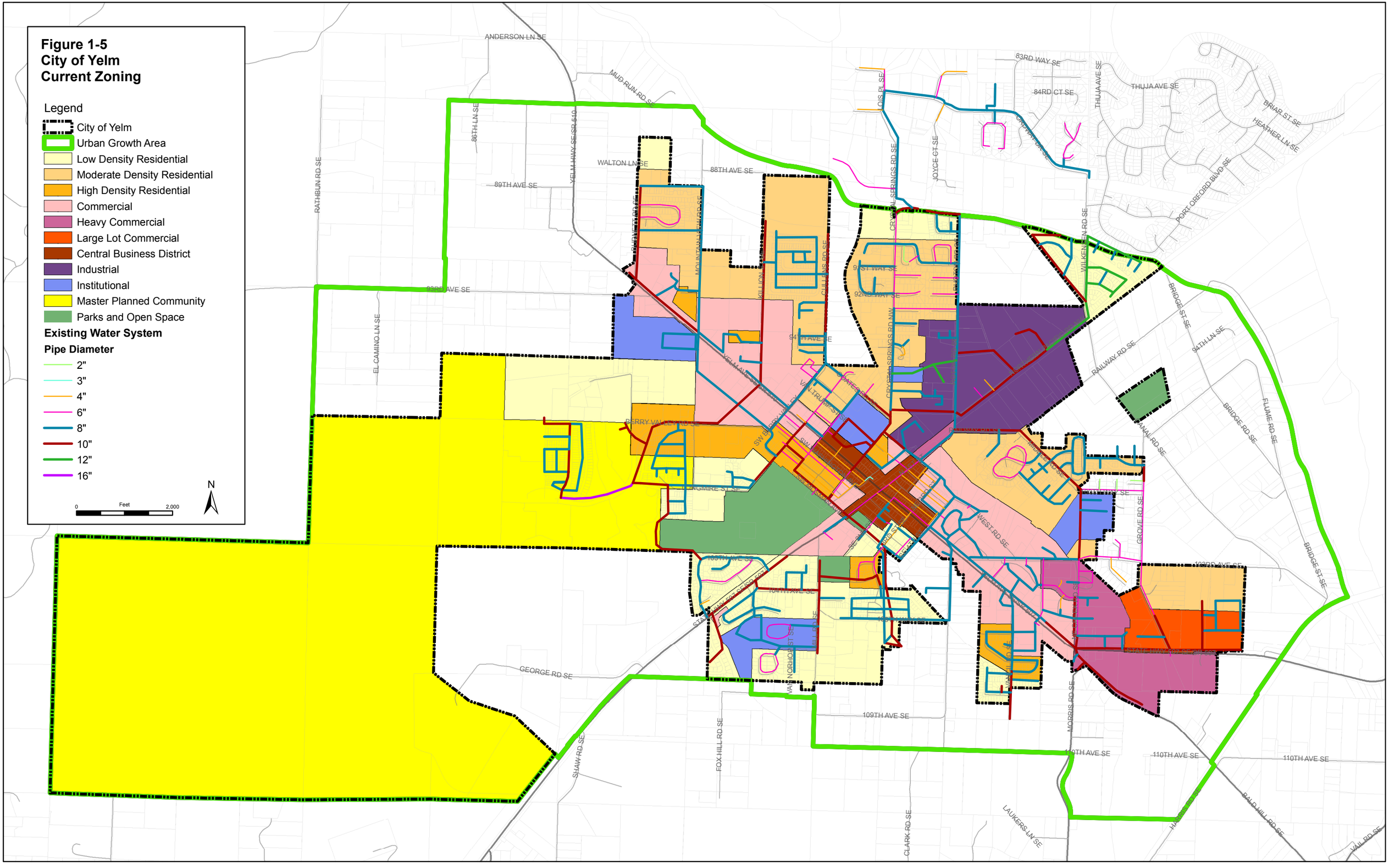

Figure 1-6
City of Yelm
Current Land Use

Legend

- City of Yelm
- Urban Growth Area

Existing Water System

Pipe Diameter

- 2"
- 3"
- 4"
- 6"
- 8"
- 10"
- 12"
- 16"

- 11 - SINGLE-UNIT
- 12 - 2-4-UNITS
- 13 - 5+-UNITS
- 15 - MOBILE-HOME-PARK
- 16 - HOTEL-MOTEL
- 17 - INST-LODGING
- 18 - OTHER-RESID
- 39 - MANF-OTHER
- 41 - TRAN-RAILROD
- 45 - TRAN-HIGHWAY
- 48 - UTILITIES
- 52 - RETL-HARDWAR
- 53 - RETL-GEN-MER
- 54 - RETL-FOOD
- 55 - RETL-AUTO
- 57 - RETL-FURNITR
- 61 - SRV-FINANCE
- 62 - SRV-PERSONAL
- 63 - SRV-BUSINESS
- 64 - SRV-REPAIR
- 65 - SRV-PROFSNAL
- 67 - SRV-GOVRNMTL
- 68 - SRV-EDUCATNL
- 69 - SRV-MISCELNS
- 71 - CULTRL-ACTIV
- 72 - PUBLIC-ASSMB
- 73 - AMUSEMENTS
- 74 - RECREATIONAL
- 76 - PARKS
- 79 - OTHER-CULTRL
- 81 - AG-NOT-CU
- 83 - CUR-USE-AG
- 88 - DESIGNATED-FOREST
- 91 - UNDEVELOPED-LAND
- 94 - CUR-USE-OPEN
- 95 - CUR-USE-TIMBER
- 96 - COMMRCL/INDUST-LAND
- 99 - OTHER-UNDEVL

N

0 Feet 2,000

MUD RUN RD SE
RATHBUN RD SE
86TH LN SE
UNNAMED PVT DRWY
YELM HWY SE/SR 510
88TH AVE SE
BURNETT RD SE
MOUNTAIN VIEW RD SE
KILLION CT SE
CULLENS RD SE
LOIS PL SE
CRYSTAL SPRINGS RD SE
JOYCE CT SE
BERNICE CT SE
ORDWAY DR SE
83RD WAY SE
THUJA AVE SE
SUMAC CT SE
WILKERSON RD SE
93RD AVE SE
EL CAMINO LN SE
YELM AVE SE/SR 510
BERRY VALLEY RD SE
NW CULLENS RD
ROTON RD SE
NORTHERN PACIFIC RD NW
RAILWAY RD SE
SW BERRY VALLEY
DURANT ST SE
N 1ST ST
BRIDGE RD SE
FLUME RD SE
CANAL RD SE
WEST RD SE
GROVE RD SE
BRIDGE ST SE
150TH AVE SE
MILL RD SE
104TH AVE SE
103RD AVE SE
105TH WAY SE
107TH LP SE
STATE HWY 507 SE/SR 507
GEORGE RD SE
109TH AVE SE
MORRIS RD SE
110TH AVE SE
110TH AVE SE
HARRIS RD SE
BALD HILL RD SE
SHAW RD SE
FOX HILL RD SE
CLARK RD SE
DEVLIN LN SE

1.7.2 Retail Service Area

According to RCW 43.20.260, municipal water suppliers have a duty to provide service to new connections within their retail service area if the following four threshold factors are met:

1. The municipal water supplier has sufficient capacity to serve water in a safe and reliable manner.
2. The service request is consistent with adopted local plans and development regulations.
3. The municipal water supplier has sufficient water rights to provide service.
4. Service can be provided in a timely and reasonable manner.

The retail service area for the Yelm water system is identified in Figure 1-7. An evaluation of these four threshold criteria is presented below:

1.7.2.1 Capacity

The capacity of the water system in terms of physical infrastructure capacity and water rights is presented in Chapters 3 and 4. This WSP presents a plan for increasing the physical capacity of the system to accommodate projected growth and the increased water demand that will result from that growth.

1.7.2.2 Consistency

As part of the review and approval process for this WSP, the City prepared a Local Government Consistency Review Checklist and submitted that checklist to Thurston County and the City of Yelm Community Development Department as the local governments with jurisdiction to certify that this WSP and related population projections are consistent with local adopted comprehensive plans and development regulations. A copy of this checklist is presented in Appendix 1E.

1.7.2.3 Water Rights

Ecology has regulatory authority and oversight for water right sufficiency determinations. Water rights self-assessment forms have been prepared as part of this WSP (Chapter 4). DOH will forward this WSP and the incorporated water rights self-assessment to Ecology for its review. DOH will take water rights into account as part of its determination of the capacity of the Yelm water system.

In 1994, the City applied to Ecology for additional water rights to supplement the water rights it currently holds. The City has also secured additional water rights from local property owners. Chapter 4 describes the City's current water rights and the status of current applications. **Until additional water rights are secured, the City's ability to serve the identified service area will be limited. The City continues to plan for and intends to develop and/or acquire other water rights as may be necessary to carry out this plan.**

1.7.2.4 Timely and Reasonable Service

If service cannot be provided in a timely and reasonable manner, the City does not have a legal duty to provide service. It is the responsibility of the City to establish service policies that establish how new water service will be provided and what constitutes providing "timely and reasonable" water service. The City's policies with regard to when and how water service will be provided are presented in Section 1.9. Figure 7-1 (Chapter 7) presents the sequence of steps by which a prospective new water customer can obtain water service. This process is provided to prospective customers in the City's development and construction standards. Provision of timely and reasonable service does not mean that it is the City's responsibility to construct the infrastructure (transmission and distribution mains, wells, reservoirs, etc.) that would deliver the

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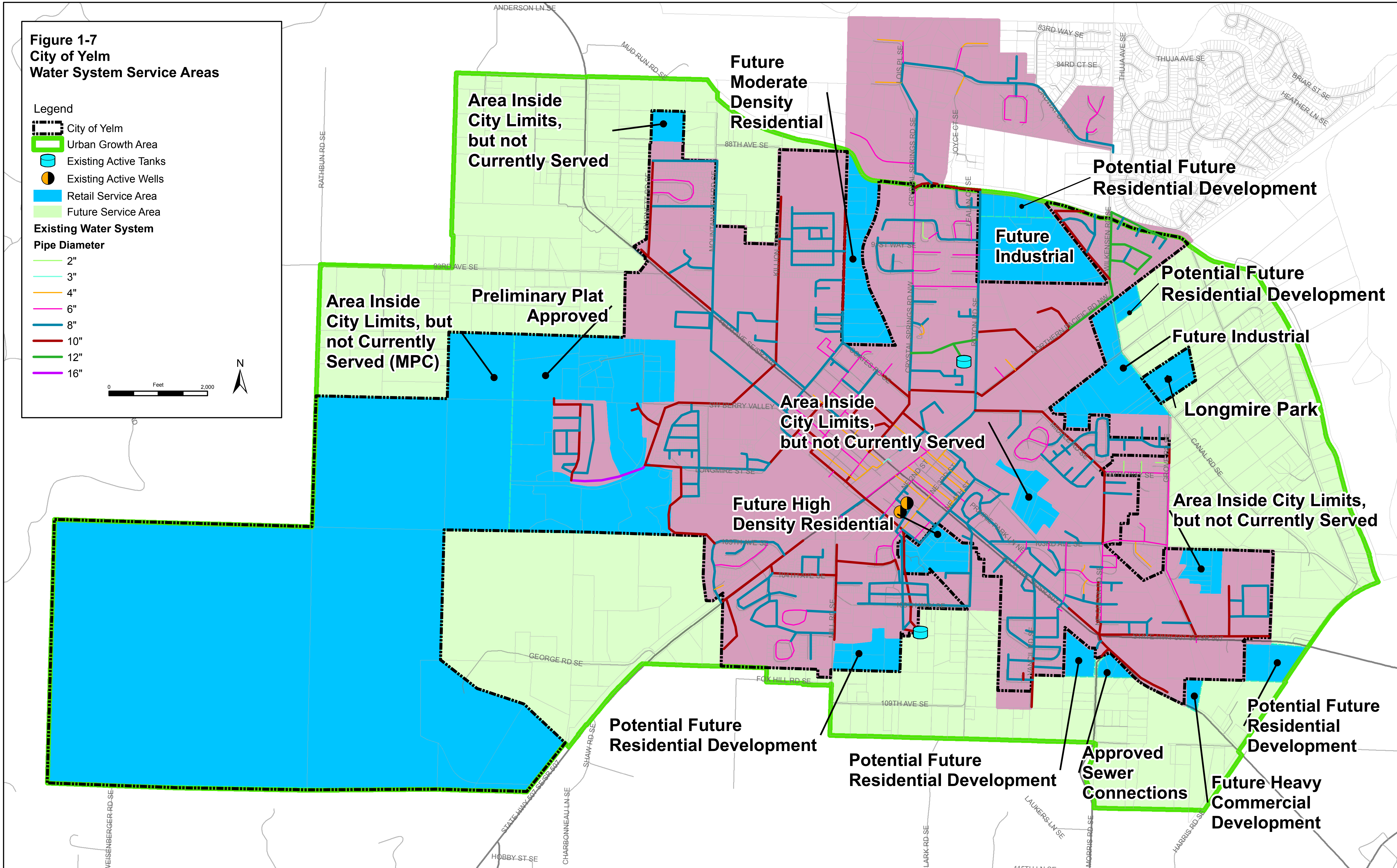
Figure 1-7
City of Yelm
Water System Service Areas
Legend
City of Yelm
Urban Growth Area
Existing Active Tanks
Existing Active Wells
Retail Service Area
Future Service Area
Existing Water System
Pipe Diameter
2"
3"
4"
6"
8"
10"
12"
16"
N
0
Feet
2,000
Area Inside City Limits, but not Currently Served
Future Moderate Density Residential
Potential Future Residential Development
Future Industrial
Potential Future Residential Development
Future Industrial
Longmire Park
Area Inside City Limits, but not Currently Served (MPC)
Preliminary Plat Approved
Area Inside City Limits, but not Currently Served
Future High Density Residential
Area Inside City Limits, but not Currently Served
Potential Future Residential Development
Potential Future Residential Development
Approved Sewer Connections
Future Heavy Commercial Development
Potential Future Residential Development
ANDERSON LN SE
MUD RUN RD SE
83RD WAY SE
84RD CT SE
THUJA AVE SE
BRIAR ST SE
HEATHER LN SE
88TH AVE SE
RATHBUN RD SE
93RD AVE SE
SW BERRY VALLEY
LONGMIRE ST SE
CANAL RD SE
103RD AVE SE
GEORGE RD SE
FOX HILL RD SE
109TH AVE SE
SHAW RD SE
STATE HWY 507 SE/SR 507
CHARBONNEAU LN SE
HOBBY ST SE
WEISENBERGER RD SE
CLARK RD SE
115TH LN SE
MORRIS RD SE
LAUKERS LN SE
HARRIS RD SE

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water to the customer. Typically, the extension of utilities to provide water to a customer is the responsibility of the developer.

1.7.3 Future Service Area

A water system's future service area is the specific area where it plans to provide water service (WAC 246-290). The future service area is identified in Figure 1-7. Parts of the future service area are outside the current retail service area. These areas are all portions of the UGA that are outside existing city limits.

As part of the water system planning process, the City is required to evaluate the water utility's capability and desire to serve the future service area. This WSP represents the required evaluation. As part of this evaluation, the City is required to evaluate the availability of sources, storage, system hydraulics, limitations on service imposed by local land use plans, water rights, and the service areas of neighboring systems, as summarized below.

1.7.3.1 Sources

This WSP describes new sources that will need to be developed to serve growth within the future service area (Chapter 3). These new sources will be located in southwest Yelm, inside city limits, and will require the construction of new infrastructure to connect these sources to the existing water system.

1.7.3.2 Storage

The current storage capacity of the water system is approximately 90 percent utilized. This WSP describes the need for additional storage facilities to accommodate forecasted growth and how those needs will be addressed.

1.7.3.3 System Hydraulics

A preliminary hydraulic model of the existing water system has been developed and calibrated (Section 3.3.4). Deficiencies in the existing system have been identified and the projects to be implemented to address those deficiencies are described. The model extends to the future service area to identify improvements and new infrastructure that will be required to serve these areas.

1.7.3.4 Limitations on Service

Local land use plans do not limit the City's ability to serve the future service area. The future service area is limited to the Yelm UGA, other than an area outside of the UGA that is already being served.

1.7.3.5 Water Rights

Chapter 4 describes the City's current water rights and the status of current applications to secure additional water rights.

1.7.3.6 Neighboring Systems

Section 1.4, above, describes neighboring and adjacent Class A and Class B water systems. None of these systems are expected to expand their service areas outside of their current boundaries in the future.

1.7.4 Future Zoning and Land Use

The City's future zoning and land use designations are shown in Figure 1-8. The Yelm Comprehensive Plan discusses proposed land use designations in more detail.

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Figure 1-8
City of Yelm
Future Zoning

Legend

- City of Yelm
- Urban Growth Area

Yelm Future Zoning

- Enviromentally Sensitive Area
- Heavy Commercial
- High Density Residential
- Moderate Density Residential
- Low Density Residential
- Industrial
- Institutional

Existing Water System

Pipe Diameter

- 2"
- 3"
- 4"
- 6"
- 8"
- 10"
- 12"
- 16"

0 Feet 2,000

N

ANDERSON LN SE
MUD RUN RD SE
86TH LN SE
RATHBUN RD SE
YELM HWY SE (SR 510)
WALTON LN SE
88TH AVE SE
89TH AVE SE
83RD WAY SE
84RD CT SE
THUJA AVE SE
LOIS PL SE
CRYSTAL SPRINGS RD SE
JOYCE CT SE
BRIAR ST SE
HEATHER LN SE
PORT ORFORD BLVD SE
WILKENSEN RD SE
91ST WAY SE
92ND WAY SE
93RD AVE SE
EL CAMINO LN SE
94TH AVE SE
BRIDGE ST SE
94TH LN SE
RAILWAY RD SE
FLUME RD SE
BRIDGE RD SE
BERRY VALLEY RD SE
LONGMIRE ST SE
SW WASHINGTON AVE
WEST RD SE
GROVE RD SE
109TH AVE SE
STATE HWY 507 (SR 507)
GEORGE RD SE
FOX HILL RD SE
SHAW RD SE
MORRIS RD SE
110TH AVE SE
CLARK RD SE
LAUKKERS LN SE
BALD HILL RD SE

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The total land area within the city limits is approximately 50 percent developed. The remaining land available for development consists of land that is zoned Commercial, Industrial, Residential, and MPC. The majority of the area outside city limits but within the UGA that is not developed consists of land that is zoned as Rural Residential (one unit per 5 acres).

1.8 Service Area Agreements

The City has no service area agreements in place with Thurston County or neighboring water systems. Yelm has the only Group A public water system in the area that is known to be expanding, and service area conflicts are not anticipated.

1.9 Service Area Policies

Service area policies are an important planning element in a utility's endeavor to develop and provide water service within a defined service area. These policies ultimately guide the development and financing of the infrastructure required to provide water service throughout the service area.

1.9.1 General Policies

The City, in its commitment to provide dependable, comprehensive water service in accordance with all applicable regulatory rules and regulations, observes the following general policies.

- The City has a duty to provide water service within the retail service area identified in this WSP in a timely and reasonable manner, consistent with state and local regulations and City policies. The definition of a timely and reasonable manner shall be defined on a case-by-case basis as deemed appropriate by the City. Considerations in determining whether or not service can be provided in a timely and reasonable manner include:
    - Public health – can service be provided without risk to the health and safety of existing water customers?
    - Financial – can the cost of providing service be borne by existing water system customers in a fair and equitable manner?
    - Administrative – does the City government and its departments have the capacity to provide service to the proposed new connections?
- Emergency events: For parcels located outside of the city limits, if a parcel's existing private well should become unusable and Thurston County will not permit the development of a replacement well, the City will permit one equivalent residential connection per tax parcel, consistent with City policies for conditions of service. Costs for the extension of water lines, if necessary, and connection to the City system, in this circumstance, will be paid by the owner of the parcel to be connected.
- The property served must be within the UGA. The only circumstance in which property outside the UGA will be serviced by City water is when it is necessary to relieve an imminent health hazard or is currently connected to the City's water system. In the case of an imminent health hazard, service will only be provided until the health hazard is resolved.
- City policies and development regulations shall provide for adequate financing tools, including local improvement districts (LIDs), latecomer agreements, SDCs, and other devices to ensure that the cost of growth is fairly apportioned between existing and new development. To the maximum extent possible, growth and expansion of the water system will be paid for by the parties who benefit from that growth.
- Until adequate water rights are secured, annexation of properties in the retail service area will not be allowed with the exception of parcels within an existing (as of the adoption date of this WSP) sewer LID

area; or unless the owner/developer of those properties and the City complete a water rights agreement that outlines the terms of a water rights transfer to the City that provides at least enough water rights to the City to allow service of the property seeking annexation. Once the water rights are developed and approved by the appropriate state and local authorities, including the City, the water rights shall be conveyed to the City.

- The City reserves the right to pursue water systems, water rights, through the exercise of eminent domain.
- Unless otherwise agreed to in a developer's agreement or other formal agreement, the City will be responsible for the planning, design, and construction of all major water infrastructure within the existing service area, including sources, treatment and storage facilities, and transmission lines 16 inches in diameter and larger.
- Planning, design, and construction of new infrastructure necessary to support development will be completed at the expense of the owner/developer and will require an agreement with the City.
- Design and construction of water main extensions and all other potable water facilities shall be consistent with City and DOH design standards.
- Existing wells serving developments within the City system are required to be abandoned in compliance with state and local government standards and any applicable water rights associated with the well(s) or property will be transferred to the City as a condition of development approval.
- The SDC and meter charge shall be paid prior to the City providing water service.
- Cross-connection control (CCC) devices shall be installed and tested prior to water service being turned on, consistent with the requirements of the City's CCC program.
- The City may choose to alter its conditions of service if necessary to regulate the water system growth.

1.9.2 Wholesaling Water

Wholesaling water is the practice of a water system or purveyor selling water to another utility, which then sells that water to its own retail customers. The City does not have a defined policy regarding the wholesaling of water to other utilities.

The City does allow for master meters to be connected to the water system. The Yelm Water System Code, at Section 13.01.140, allows the City Council to "…authorize water service to a community or group of individual consumers to be furnished through a common master meter upon finding that service through individual meters is not practicable." It is the City's policy that monthly water rates and monthly meter charges for master meters will be the same as for individual meters of the same size.

1.9.3 Wheeling Water

It is the City's policy to not "wheel" or otherwise transfer water to another water system except on a temporary emergency basis. Establishment of an agreement to wheel water to another water system on a non-emergency basis would require an amendment to this WSP.

1.9.4 Annexation

The City has adopted the following policies regarding annexation and City water service.

- The City is the sewer and water provider within the UGA. It is the policy of the City to extend sewer and water facilities only within city limits and to require annexation of unincorporated areas to receive public facilities. Exemptions will be made on a case-by-case basis, but only when it is (1) necessary to solve an existing environmental problem, (2) approved by Thurston County, and (3) adequately funded to avoid any costs to the City, taxpayers, and ratepayers.

- Until adequate water rights are secured, annexation of properties in the retail service area will not be allowed with the exception of parcels within an existing (as of the adoption date of this WSP) sewer LID area; or unless the owner/developer of those properties and the City complete a water rights agreement that outlines the terms of a water rights transfer to the City that provides at least enough water rights to the City to allow service of the property seeking annexation. Once the water rights are developed and approved by the appropriate state and local authorities, including the City, the water rights shall be conveyed to the City.

1.9.5 Direct Connection and Satellite/Remote System

- If the thresholds listed in Section 1.7.2 are not met, the City has no duty to provide water service.
- The City's policy is that all new development within the retail service area will be served by direct connection to the City's existing water system.
- If it is determined that the City does not have a duty to provide service because any of the four thresholds are not met, the feasibility of providing service via a satellite water system will be evaluated.
- Permitting, design, and construction of the satellite system shall be performed by the party seeking water service, consistent with DOH and City development standards.
- Once the system is constructed and approved for operation by the appropriate state and local authorities, including the City, the system shall be conveyed to the City.
- Satellite systems within city limits shall be operated and maintained by the City. A separate rate structure may be established for the satellite system so that users of that system pay for O&M costs.
- Service via a satellite system will require that the WSP be amended.

1.9.6 Design and Performance Standards

The following design and performance standards apply to the water system and future construction associated with the water system.

- All new development to be connected to the water system shall be required to meet the City's design and construction standards as set forth in the City's Development Guidelines, DOH standards, and as adopted by the YMC.
- Any existing water system within the service area that wishes to connect to the City's system will be required to incorporate features that will ensure compatibility with the City's facilities. Specific elements of compatible design will be set forth in an agreement between the City and the water system purveyor.

1.9.7 Surcharge for Outside Customers

The City charges outside customers a higher monthly water rate and monthly meter charge than it charges customers inside the city limits. The rationale for this additional cost is that it costs more to supply water to customers outside the city limits.

1.9.8 Reduced Rate for Senior Citizens and Permanently Disabled

The City Council has adopted ordinances that provide for reduced utility rates (including water) for senior citizens and permanently disabled heads of household who meet specified low income criteria (see Appendix 1G).

1.9.9 Formation of Local Improvement Districts Outside Legal Boundaries

The City does not have a policy regarding the formation of LIDs that are outside city limits. However, the City is open to reviewing such situations on a case-by-case basis.

1.9.10 Urban Growth Area

- The City is in a UGA. New development is expected to pay for distribution system extensions to the new development. The cost of major component improvements to the existing system is reflected in the SDC and meter hookup charge.
- If a water main extension is required to provide service to a parcel or parcels, the extension shall be paid for by the prospective water customer and ownership of the extension shall be transferred to the City when construction is completed. Transfer of ownership shall include a Warranty Bond and Bill of Sale.

1.9.11 Latecomer Agreements

The City permits latecomer agreements, consistent with Section 13.12 YMC: Assessment Reimbursement Contracts (Latecomer Agreements).

1.9.12 Oversizing

The City does not provide funds to install larger facilities than what may be needed to provide services to a development so that future developments in that portion of the service area may be served. Costs for oversizing facilities shall be borne by the developer and/or parties that benefit from the oversizing. Costs for oversizing facilities shall not be borne by existing ratepayers. Water main sizes are prescribed in this WSP. Should the WSP not explicitly define the water main size for a proposed development, the Public Works Director will establish the minimum size, consistent with the City's Development Guidelines.

1.9.13 Cross-Connection Control

The City has a CCC program in place. Section 13.04.220 YMC specifies the need and conditions for backflow prevention. The City has the authority to administer Chapter 13 of the YMC and enforce the requirements defined in this chapter.

1.9.14 Extensions

Service extensions are permitted, as described in the City's Development Guidelines. The developer or group requesting the extension is responsible for the extension costs. Design standards shall meet the requirements of the Development Guidelines, the Water System Plans, DOH requirements, City codes, and other regulatory requirements.

1.10 Condition of Service

Conditions of service are specific requirements that facilitate the implementation of the utility's service area policies. These requirements are communicated to prospective developers in the YMC (Appendix 1B) and Development Guidelines (Appendix 1C). Conditions that shall be met prior to providing water service include the following. The City may choose to alter its conditions of service if necessary to regulate water system growth.

- Annexation or waiver of protest for annexation by the developer or group shall be executed.
- The SDC hookup and meter shall be paid prior to the City providing water service.

- CCC devices shall be installed and tested prior to water service being turned on.

1.11 Complaints

The City maintains a list of complaints and identifies what was done to respond to any complaints where public health was at risk. Most complaints are filed at City Hall and then City Hall sends any applicable work orders to Public Works.

1.12 Consistency with Local Planning Agency

Population forecasts for this WSP were gathered from the Yelm Comprehensive Plan and TRPC projections. Thurston County has reviewed the population projections and service area maps presented in this WSP for consistency with its own projections and maps. Appendix 1E presents the documentation related to the local government consistency review.

1.13 Consistency with Ecology on Watershed Planning

The Phase IV Nisqually Implementation Plan for Watershed Management in WRIA 11 provides a vision and framework for water resource management in the Nisqually Watershed. The Implementation Plan provides details of implementation obligations set forth in the Watershed Management Plan for WRIA 11. Yelm and Ecology were part of 11 state and local governments and agencies that participated in the local Planning Unit that developed the Management and Implementation Plans.

As described in the Implementation Plan, the Watershed Management Plan contains recommended actions for short- and long-term water resource management in WRIA 11 at both the watershed-wide scale and the sub-basin scale. The actions are in the form of policy statements, management strategies, and projects. Critical actions include:

- Identify aquifers for potential supply
- Recommend to Ecology to batch-process water right applications by sub-watershed
- Monitor the quantity and quality of stream flows and groundwater supplies
- Understand the interconnection between groundwater and surface water, including the impact of exempt wells on groundwater
- Strengthen the Coordinated Water System Planning policies to provide a more direct link between land use planning and water supply availability.

These actions are to be implemented by various participants, including Ecology and Yelm, subject to funding constraints. The Implementation Plan provides a schedule for implementing the recommended actions. This WSP and the mitigation measures proposed by Yelm related to new water rights have been prepared consistent with the recommendations and actions identified in the Management and Implementation Plans.

1.14 Water System Plan Review

The preparation of a WSP includes opportunities for the public to participate in the process and review and comment on the WSP's contents.

1.14.1 Public Input Process

The City identified public involvement as an important part of the water system planning process. In order to promote public awareness of the Water Use Efficiency (WUE) goals and water system projects identified in

this WSP, the City developed a Public Information/Public Involvement Plan. The overall goal for the Public Information/Public Involvement Plan was to provide ample opportunities for interested citizens to learn about water system projects and to provide meaningful opportunities for them to provide ideas and suggestions. The specific objectives were to:

- Create public awareness about the WUE Rule and the WSP, including their purposes, processes, and schedules, and provide accurate, timely and easily accessible information about both projects
- Inform interested citizens of their opportunities to participate and offer comments
- Offer multiple opportunities and methods for citizens to provide their suggestions throughout the planning process
- Show how citizen comments have been recognized, considered, and incorporated in these planning processes.

This section summarizes how the Public Information/Public Involvement Plan was designed and implemented. A copy of the Public Information/Public Involvement Plan is attached in Appendix 1F.

1.14.1.1 Stakeholder Interviews

At the outset of the project, the City interviewed six individuals from the local community, including two representatives of the City's Planning Commission, two representatives of local business interests, and one representative each of the Yelm School District and the Yelm Fire District. The list of those interviewed is included in the Public Information/Public Involvement Plan. The purpose of the interviews was to:

- Get suggestions and recommendations for public information and public involvement approaches that would work well in Yelm
- Identify issues or concerns about the project that should be addressed during the planning processes and in public information materials.

Two key issues emerged during the interviews. The first was growth. Concern was expressed about the pace of growth in Yelm and questions were raised about whether or not the City had adequate water rights to serve the projected growth, particularly the growth associated with proposed MPCs. The second issue related to the efficient use of water and the importance of conservation to stretch the City's water supply.

The interviews also provided valuable input into the Public Information/Public Involvement Plan and the specific approaches and mechanisms that were used for outreach.

1.14.1.2 Public Involvement Opportunities

Public Open Houses

The primary opportunities for public involvement were three public open houses that were held in the late afternoon at the Yelm Public Safety Building, located at 206 McKenzie Avenue SE. The open houses ranged from 1.5 to 2 hours in length, and are summarized below.

- On June 18, 2008, the City hosted a WUE Forum to explain the purpose of the WUE Goal-setting process and to present and receive public comment on draft WUE goals. This input was considered prior to adoption of WUE Goals by the City Council at the end of June 2008. According to records, 15 people signed in.
- On August 6, 2008, the City hosted Public Open House No. 1 for the WSP Update. The purpose of this open house was to introduce the planning process to local citizens and utility customers and to ask for issues and concerns that should be addressed in the WSP Update. According to records, 10 people signed in.

- On March 5, 2008, the City hosted Public Open House No. 2 for the WSP Update. The purpose of this open house was to present for public review and comment growth projections for the future, a draft list of construction projects to support the growth, and proposed increases to monthly water rates and connection charges for new water services. According to records, 15 people signed in.

Meeting Format. Each meeting began as an open house when City and consultant team staff were available to talk one-on-one with participants as they reviewed informational boards, maps, and graphics. Attendees were encouraged to submit written comments via comment forms handed out at the meeting or to send them by mail later. About 30 minutes into each open house, the City gave a presentation about the substance of that meeting, followed by questions and discussion. Meetings then changed to an open house format.

City of Yelm Web Site. The City created and maintained a section of its Web site for the WUE Goal-setting and the WSP Update processes. The Web site was intended to provide a convenient way for interested citizens and customers to learn about the purpose, process, and schedule for these planning processes and their opportunities to participate. Fact sheets and PowerPoint presentations given at each open house were posted at the Web site. Copies of fact sheets and PowerPoint presentations are included in Appendix 1F. Visitors to the Web site could also submit comments about WUE Goals and about aspects of the developing WSP Update directly from the Web site.

Public Comments. Written comments submitted at the open houses as well as comments that were submitted electronically were consolidated into a "comment tracking matrix" that was updated after each open house. The consolidated comments were available for public review at the City's Web site. Between June 2008 and April 2009, a total of 12 comments were submitted related to WUE Goals and the WSP Update.

Other Public Presentations

On April 14, 2009, Mayor Ron Harding met with the Yelm Area Chamber of Commerce and gave a presentation similar to the one given at the March 5, 2009, public open house.

1.14.1.3 Public Information Plan Components

To make information about the project and opportunities for involvement available to local citizens and water utility customers, the following approaches were used to advertise the open houses:

- Fliers and invitations to the public open houses were prepared and mailed to all Yelm utility customers (Copies of the fliers are included in Appendix 1F).
- A paid ad was placed in the *Nisqually Valley News* in advance of the March 5, August 6, and June 18 public open houses.
- The City Hall Reader Board announced the open houses at least 5 days in advance of each event.
- The City's Web site was updated in advance of each public open house, announcing the date, time, and purpose of the open house (presentation materials were available online to review or download).
- Fact sheets were prepared in advance of open houses that were posted at the City's Web site and handed out at public open houses.
- Local news coverage was provided on June 13, 2008. The *Nisqually Valley News* weekly newspaper ran an article announcing the June 18 WUE Goal-Setting Open House, titled "City Promoting Water Efficiency" by Megan Hansen. Another article, titled "City of Yelm Sets Open House for Water Customers" was published to advertise the same open house.

1.14.1.4 Additional Public Information/Public Involvement Plan Documents

In addition to the Public Information/Public Involvement Plan, Appendix 1F includes the following documents:

- Public Information/Public Involvement Plan
- Meeting fliers for public open houses held on August 6 and March 5 mailed to Yelm customers
- Fact sheets
- Paid ads placed in the *Nisqually Valley News*
- PowerPoint presentations from the August 6 and March 5 open houses
- Comment tracking matrix, June 2008–April 2009
- Additional news articles related to the water system planning process.

Public information materials prepared for the June 18, 2008 WUE Open House are included in Appendix 4A.