




## *Water Management and Conservation Plan*

Prepared for:  
City of Silverton  
306 S. Water St.  
Silverton, OR. 97381

Approved by City Council  
February 1, 2016

Prepared by:  
Oregon Association of Water Utilities

**SILVERTON CITY COUNCIL STAFF REPORT  
TO THE HONORABLE MAYOR AND CITY COUNCILORS**

	<b>Agenda Item No.:</b> 7.2	<b>Topic:</b> Approval Of The City Of Silverton Water Management And Conservation Plan
	<b>Report No.:</b> 16-12	
	<b>Agenda Type:</b> <b>CONSENT AGENDA</b>	
	<b>Meeting Date:</b> February 1, 2016	
<b>Prepared By: P Eckley</b>	<b>Reviewed By: Paul Eckley</b>	<b>Approved By: Bob Willoughby</b>

**RECOMMENDED MOTION:**

Motion to approve City of Silverton Water Management and Conservation Plan dated January 2016, which is available on the City's website.

**BACKGROUND:**

The City of Silverton has very valuable water rights on both Abiqua (1916) and Silver (1911) Creeks. Undeveloped water rights must file time extensions to remain valid. The most recent extension for the Abiqua Creek right included a requirement from the Oregon Water Resources Department (OWRD) for the City to complete a Water Management and Conservation Plan (Plan) which will serve as a roadmap for the City to follow to properly manage its water resources. The Plan must address the water supply needs over the next 20 years; must demonstrate how the City is currently managing water resources; and propose how the City will efficiently manage these resources in the future. The City hired the Oregon Association of Water Utilities to prepare the Plan.

The Plan demonstrates the City has adequate water rights for the next 20 years and beyond, and provides the City the flexibility to utilize water from Abiqua Creek, Silver Creek and Silverton Reservoir. Over the next 20 years, the City's population is expected to grow from approximately 9,500 to 11,900 and the City's water supply demand should grow from 1.8 to 2.25 million gallons per day (average for the max month).

The Plan shows the water distribution system leakage loss is 17.4%. The City's goal is to reduce this below 15% over time by replacing older water pipe prone to leakage. These pipes are typically made of steel or other obsolete materials. The City is committed to conserving water by continuing to fully meter our customers; to properly maintain the meters; to consider a rate structure which encourages conservation; and to provide public educational information and tools for our customers. The Plan has the City moving from the current three stage water curtailment to five levels of alert. These additional levels will provide more flexibility for the City to deal with the multitude of conditions which require water curtailment. Finally, the City will be filing claims of beneficial use for the water right on Abiqua Creek and the water right which allowed the City to build Silverton Reservoir.

A draft Plan was submitted to OWRD in June and review comments were received in September. This final draft Plan has been submitted to OWRD and received tentative approval. The final Plan approved by Council will be submitted to OWRD and they will prepare an Order approving it.

**BUDGET IMPACT:** FY(s): N/A    **Funding Source:** N/A

**Attachments:**

1. The 2016 City of Silverton Water Management and Conservation Plan is too large to include in the packet, but is available for viewing on the City website at [www.silverton.or.us](http://www.silverton.or.us).

# Table of Contents

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Section	Page
<b>Section One: Water Supplier Description 690-086-0140</b>	
Introduction .....	1
Scope .....	2
Purpose .....	2
1.1.1 Sources of Water.....	3
1.1.2 Water Diversions .....	4
1.1.3 Storage Capacities.....	4
1.1.4 Interconnections / Intergovernmental Agreements .....	4
1.2 Current Service Area 690-086-0140(2) .....	4
1.3 Adequacy / Reliability of Existing Source 690-086-0140(3) .....	5
1.4 Quantification of Present and Historical Use 690-086-0140(4) .....	6
1.5 Water Rights 690-086-0140(5) .....	7
1.6 Water Use Characteristics 690-086-0140(6) .....	15
1.7 Interconnections 690-086-0140(7) .....	16
1.8 Water System Schematic 690-086-0140(8) .....	16
1.9 Quantification of Water Leakage 690-086-0140 (9) .....	16
Map – Distribution System Pipe Material .....	17
Map – Figure 4 Priority 1 & 2 Distribution System Improvements .....	18
Map – City of Silverton Comprehension Plan .....	20
Map – City of Silverton Water System.....	21
Map – City of Silverton Water System schematic Transmission Lines .....	22
<b>Section Two: Water Conservation Element 690-086-0150</b>	
2.1 Progress Report Past WMCP 690-086-0150(1) .....	23
2.2 Water Use Measurements and Reporting 690-086-0150(2) .....	23
2.3 Measurements Already Implemented 690-086-0150 (3) .....	24

Contents Continued: \_\_\_\_\_

2.4	Annual Water Audit 690-086-0150(4) (a) .....	24
2.5	Full Metering System 690-086-0150(4) (b) .....	25
2.6	Meter Testing and Maintenance 690-086-0150(4) (c) .....	25
2.7	Rate Structure 690-086-0150(4) (d) .....	25
2.8	Leak Detection Program 690-086-0150(4) (e) .....	25
2.9	Public Education Program 690-086-0150(4) (f) .....	26
2.10	Expansion / Diversion 690-086-0150 (5) .....	27
2.11	Population Criteria 690-086-0150 (6) .....	27
2.12	System Leakage 690-086-0150 (6) (a) .....	28
2.13	Technical /Financial Assistance 690-086-0150 (6) (b) .....	29
2.14	Financial Retrofitting 690-086-0150 (6) (c) .....	29
2.15	Rate Structures 690-086-0150 (6) (d) .....	29
2.16	Recycle / Reuse 690-086-0150 (6) (e) .....	29
2.17	Other Conservation Measures 690-086-0150 (6) (f) .....	30
	City of Silverton Water Rate Structure .....	31

**Section Three: Water Curtailment Elements 690-086-160**

3.1	Assessing Water Supply 690-086-0160(1) .....	32
3.2	Stages of Alerts 690-086-0160(2) .....	35
3.3	Alert Triggers 690-086-0160(3) .....	36
3.4	Curtailment Actions 690-086-0160(4) .....	37

**Section Four: Water Supply Element 690-086-170**

4.1	Delineation – Current and Future Service Area 690-086-0170(1) .....	40
4.2	Population Projections 690-086-0170(1) .....	40
4.3	Schedule of Permit Usage 690-086-0170(2) .....	41
4.4	Demand Forecast 690-086-0170(3) .....	43
4.5	Comparison – Future Needs and Sources 690-086-0170(4) .....	43
4.6	Expansion / Diversion 690-086-0170 (5) (a) .....	44

Contents Continued: \_\_\_\_\_

4.7	Interconnections 690-086-0170 (5) (b) .....	44
4.8	Cost Savings Measures 690-086-0170 (5) (c) .....	45
4.9	Permit Diversion 690-086-0170 (6) .....	45
4.10	Mitigation Actions 690-086-0170 (7) .....	45
4.11	New Water Rights 690-086-0170 (8) .....	46
4.12	Green Light Water Request .....	46
4.12.1	OAR 690-086-0130 (7)(a) .....	47
4.12.2	OAR 690-086-0130 (7)(b) .....	47
4.12.3	OAR 690-086-0130 (7)(c) .....	47
4.13	Identified Conservation Measures 690-086-0170 (8) (a) .....	48
4.14	Regional Management 690-086-0170 (8) (b) .....	48
4.15	Cost Appropriations 690-086-0170 (8) (c) .....	48

**Section Five: Other Items 690-086-0125**

5.1	List of Affected Governments 690-086-0125(5) .....	50
5.2	Updated Plan Submittal 690-086-0125 (6) .....	50
5.3	Additional Time 690-086-0125 (7) .....	50

**Tables, Maps and Charts:**

Western Regional Climate – 30 year average temperature .....	1
Table 1-1: Water Rights Correlation Permits / Certificates .....	3
Table 1-2: Water Production Rights Relationship .....	5
Table 1-3: Water Volume Delivery .....	6
Table 1-4: Water Usage Variation .....	7
Table 1-5: Water Source Permit .....	8
Table 1-6: Water Usage / Permit .....	8
Table 1-7: Water Right Development / Completion .....	9
Table 1-8: Endangered Species .....	9
Map – Molalla Pudding River Watershed .....	11

Contents Continued: \_\_\_\_\_

Map - Fish Distribution and Habitat Area – Pudding River Watershed	12
Map - Spring Chinook Spawning Rearing Migration Areas in Molalla Pudding Sub-basin	13
Map - Winter Steelhead Spawning Rearing Migration Areas in Molalla Pudding Sub-basin	14
Table 1-9: Water Use Characteristics .....	16
Table 1-10: Water / Production Loss Quantification.....	19
Table 2-1: Conservation Education Goals .....	27
Table 2-2: Water Conservation Activities .....	28
Table 3-1: Trigger Levels .....	36
Table 3-2: Action Levels of Curtailment .....	38
Table 3-3: Curtailment Goals .....	39
Table 4-1: Population Projections .....	40
Table 4-2: Permit Usage Forecast .....	42
Table 4-3: Water Demand Projections .....	43
Chart 4-1: Future Water Requirements .....	44
Table 4-4: Permit Usage Rates .....	45
Map – Marion County Rural Zoning .....	49

<b>Appendices</b>	<b>Page</b>
Abiqua Creek Watershed Information (Abiqua Creek Watershed)	A
Silver Creek Watershed Information (Silver Creek Watershed)	B
Chinook / Steelhead Critical Habitat Information (Chinook Critical Habitat)	C
Final Order Extension of Time for Permit # S-3226	D-I
Certificate of Water Right 2400	J
Water Right Permit # S-3226	K-N
Final Order Extension of Time for Permit # S-36714	O-P
Water Right Permit # S-36717	Q-T
Water Right Permit # R-5948 (Reservoir)	U-Y
Upper Willamette Chinook ESU Map	Z

Upper Willamette Steelhead DPS Map	AA
Public Information Flyer – Water Curtailment Alert - Stage 1	BB
Public Information Flyer – Water Curtailment Alert - Stage 2	CC

# City of Silverton

## WATER MANAGEMENT CONSERVATION PLAN

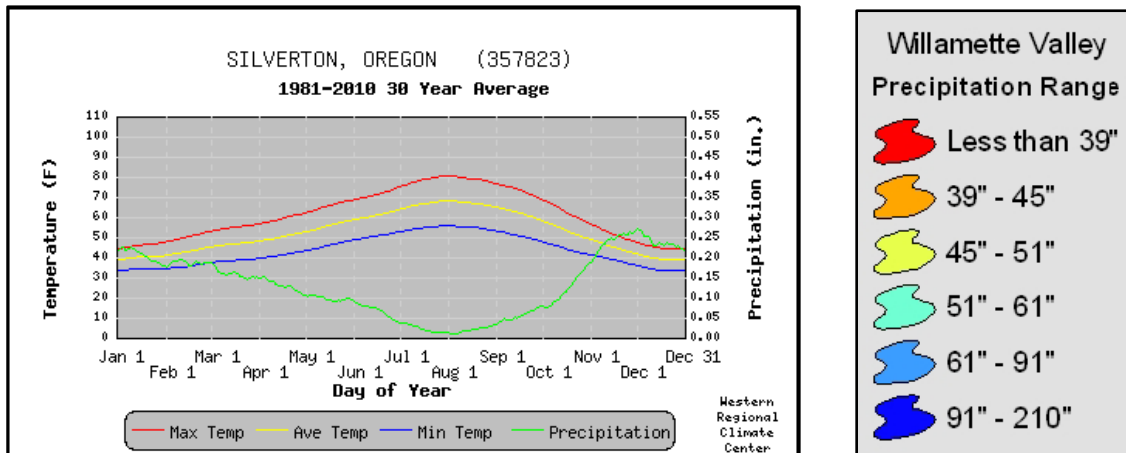
### INTRODUCTION:

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Situated in the northern east area of the Willamette Valley, the City of Silverton was incorporated in 1885 after approximately 40 years of settlers processing timber and producing power in an upstream area called Milford. By 1894, the population was nearly 900. The young town was a trading and banking center of prominence and ranked among the most progressive towns of western Oregon.<sup>1</sup>

One hundred years later, the City of Silverton serves a population of approximately 9,540, and has seen a growth of 26% since 2000. Situated in Marion County the county is home to a population of 315,400 as of 2012. The United States Census Bureau indicates an increase of 2.6% annually growth from 2000- 2010. Median household incomes during 2006-2011 was \$46,654.00<sup>3</sup>

Annual rainfall is almost 47 inches, with 50% occurring between October and January. Like many areas of Oregon, the hottest month occurs in August while the coldest month is usually December. The average mean minimum temperature is 43<sup>0</sup> F as the average mean maximum temperature is 61.8<sup>0</sup> F.<sup>4</sup>



Source: 1- OHA-DWP data online 2-2008-2012 American Community Survey, 3- U.S. Census Bureau, 4 -Western Regional Climate Center / Oregon Climate Services / Oregon State University, Map provided by Western Regional Climate Center. Precipitation legend taken from Natural Resource Conservation Service Report profiling hydrologic unit 170090009



**SCOPE:**

The scope of this water management and conservation plan is to consider the workings of the water system from various points as it is operated by the City of Silverton. The primary concern is the management of existing water sources; and the sustainability of said sources as they relate to the understanding of the growth in and around the area. Equally important is continuing to supply water to both existing and future customers as well as keep them informed about conservation ideals and methods. Management of the water under continual satisfactory conditions will be an effort for both water system personnel and the community.

**PURPOSE:**

The purpose of this water management and conservation plan is to gain a better understanding of the balance of water from the source, through the water system and how it is expended by the customers, meeting OAR requirements and guidelines towards water management and conservation. The City of Silverton does meet the criteria established under OAR 690-086-0150(6), serving a population of 9,540 through 3,000 connections. [Source Drinking Water Services, Drinking Water Data Online](#)

This water management and conservation plan is an initial report submitted to Water Resources Department and is written as a guideline for the City of Silverton's continued efforts towards water conservation. The next update for a water management and conservation plan is in the form of a progress report due in 2020.

Every five years, the City of Silverton will update Water Resources Department with a progress report on how the benchmarks are being implemented as well as any changes in the efforts of water management and conservation.

Following the administrative rules, the city proposes to submit a progress report as key benchmarks are completed and water use progress is established. Progress reports will be written and sent to the Water Resources Department as addendums to this water management and conservation plan.

The organization of this document is compiled by Oregon Association of Water Utilities with authorization from the City of Silverton. This water management and conservation plan complies with the Oregon Administrative Rules (OAR) Chapter 690, Division 86.

**SECTION ONE  
MUNICIPAL WATER SUPPLIER**

**1.1 Municipal Water Supplier Description:** OAR 690-086-0140 (1) A description of the supplier's source(s) of water; including diversion, storage and regulation facilities; exchange agreements; intergovernmental cooperation agreements; and water supply or delivery contracts;

**1.1.1 Sources of water: (Water Permits)**

The water rights summary is placed in the table below:

Table 1-1: Water Right Permit / Certificates									
Application Number	Permit Number	Certificate Number	Source	Beneficial Use	Priority Date	Permitted		Gallons Per Minute	
						CFS	MGD		
S-4924	S-3226	NA	Abiqua Creek	Municipal	5/24/1916	10.0 <sup>A</sup>	6.5	4,488.00	
S-1297	S-622	2400	Silver Creek	Municipal, Domestic	3/16/1911	5.0	3.2	2,244.00	
S-50185	S-36714	NA	Silver Creek Reservoir	Municipal	3/20/1973	1300 af annually	0.178	N/A*	
R-50184	R-5948	NA	Silver Creek Reservoir	Municipal	3/20/1973	1300 af	NA	NA	
GR-367	G-353	NA	Well <sup>1</sup>	Municipal	2/10/1935	1.11	0.72	498	
A – Water right has “Development Limitation at 7.0 cfs * - Limitation of use is set at 200 acre-feet per year 1,300 acre feet (af) annually, calculated at 1.79 CFS 1 – Well in database for OWRD. City informed OWRD well has been abandoned per water analysis performed in May 2001, Tetra-Tech/KCM 2 – Well production volumes not included in total figures Permits S-3226, S-36714 extended completion date of 10/1/2038 Permit R-5948 extended completion date of 10/1/1975						Total (does not include well)	15 <sup>2</sup>	9.7	6,732 <sup>2</sup>

**Water Source:**

The City of Silverton; incorporated in 1885, gathers water from both Abiqua and Silver Creeks. This primary source is runoff from the Pudding Watershed, which consist of five large streams flow west out of the Cascade Mountains to join the Pudding River as it meanders north across the broad Willamette Valley and to its confluence with the Molalla River near Canby. The watershed encompasses 528 square miles, much of which is used for farming, timber harvest, manufacturing, and recreation.

Winter precipitation usually falls as rain in the lower elevations of the watershed while a transient snow pack can develop at higher elevations.

1 – <http://oregonexplorer.info/willamette/MolallaPuddingWatershed>

### 1.1.2. Diversions

**Abiqua Creek** delivers water by gravity to the Water Treatment Plant (WTP), with an intake screen installed in 2001. Using Oregon standard slotted openings, the intake screen allows a maximum velocity of 0.4 ft./sec and in theory a flow rate of 6.5 MGD.<sup>1</sup> Passing through the intake, water travels 7 miles of transmission line, varying in size from 20” to 24”, with the latest improvements completed in 1994. Transmission line capacity is 4.8 mgd. 1- [Water Master Plan – Keller Associates](#)

**Silver Creek** intake has a capacity of 2.3 MGD with two pumps running and 1.7 MGD with a one single pump operating. Water travels through a 12 inch pipeline, approximately 2,200 feet long to the WTP. The water right associated with this intake is 3.2 MGD, not including the 1,200 acre feet of reservoir storage.

### 1.1.3. Storage Capacities

The City of Silverton utilizes three reservoirs totaling 4.5 MG, with the largest reservoir located in the southeast quadrant of Silverton with a capacity of 2 million gallons, using electronics to control and measure water levels. Two smaller 1.0 MG and 1.5 MG reservoirs located just east of city center on Ames Street.

### 1.1.4. Inter-ties and Inter-Governmental Agreements:

The City of Silverton has no interconnections or governmental agreements with any other public and private water systems. In subsection 3.5 of Keller Associates Water Master Plan 2011 for the City of Silverton, a mention of possible future water service to the City of Mt. Angel, but no formal discussions have taken place as of the writing of this management and conservation plan. The City of Silverton is a partner of the Pudding River Watershed Place-based Planning Group, which submitted a grant application to the Oregon Water Resources Department for funding under SB 266.

**1.2 Current Service area:** [690-086-0140\(2\); a delineation of the current service areas and an estimate of the population served and a description of the methodology \(ies\) used to make the estimate;](#)

The City of Silverton’s water system serves an area approximately 3.50 square miles which includes approximately 3,000 connections and a population of 9,540 .<sup>1</sup> Residential usage accounts for 67 percent, while commercial consumption equals 31 percent.<sup>2</sup>

1 – [Oregon Health Authority Drinking Water Program Data Online Webpage](#), 2 – [Taken from Water Master Plan – Keller Associates](#)

**1.3 Adequacy and Reliability of Existing Water:** OAR 690-086-0140 (3) An assessment of the adequacy and reliability of the existing water supply considering potential limitations on continued or expanded use under existing water rights resulting from existing and potential future restrictions on the community's water supply.

Current water allowances total 15 cubic feet per second or 6,732 gallons per minute. Based on historical water usage records, the water service area's highest peak daily demand has been approximately 3.02 million gallons per day (mgd).<sup>1</sup> Currently the city is using approximately 22.1 percent of their combined total water rights averaged over the year.<sup>2</sup> Water permit #G-353 and associated well was abandoned by the City of Silverton, due to water quality concerns.

1, 2, - Figures established from July 2009 through June 2014.

<b>Table 1-2: Water Production / Rights Relationship:</b>								
Intake Name	Water Right Permit	Certified	Water Allowance (cfs)	Water Allowance (gpm)	Actual Usage MG per month <sup>1</sup>	Average Usage (cfs) per month	% of Total Water Right	% of Total Based on Supply Capacity
Abiqua Creek	S-3226	NA	10.0 <sup>A</sup>	4,488	36.57	1.89	18.9	74%
Silver Creek	S-622	2400	5.0	2,244	3.15	0.16	3.2	72%
<b>Well</b>	<b>G-353</b>	<b>NA</b>	<b>1.11</b>	<b>498</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	
Silver Creek Reservoir	S-36714	NA	1,300 af <sup>*</sup>	806	NA	NA	NA	
Silver Creek Usage	R-5948	NA	0	0	NA	NA	NA	
<b>Total <sup>2</sup></b>			15.0	6,732				
<p>Figures calculated using Silverton annual OWRD reports from October 2009 through September 2014.                      A – Water right has “Development Limitation at 7.0 cfs, * af – “development limitation at 200 acre-feet per year. – not included with water allowances, 1 – averaged monthly total usage, 2- does not include permitted water on well or reservoir.</p>								

The only wording on potential limitations or potential future restrictions found on City of Silverton's certificates and permits stating; *“The amount of water appropriated shall be limited to the amount which can be applied to beneficial use and not exceed ‘x’ cubic feet per second, or its equivalent in case of rotation”*. This statement is written on both permits S-3226 and S-622 and correlates with the amount of water allowance stated in Table 1-2. In-stream requirements in the Molalla-Pudding sub-basin for supporting aquatic life, minimizing pollution and providing spawning abilities and resident fish surroundings. These minimum flow rates vary from season to season for both Abiqua and Silver Creeks and will be noted in later sections of this water management and conservation plan.

**1.4 Quantification of Present and Historical Use: 690-086-0140 (4)** A quantification of the water delivered by the water supplier that identifies current and available historic average annual water use, peak seasonal use, and average and peak day use;

Month	2010	2011	2012	2013	2014
January	3,160,909	3,099,163	3,596,318	3,064,854	3,064,911
February	2,740,887	2,746,128	2,447,222	2,828,683	3,097,277
March	3,240,920	2,836,804	2,667,584	2,565,308	2,841,593
April	2,930,039	2,640,415	2,997,347	<b>11,316,276</b>	3,266,156
May	3,068,363	3,179,782	2,965,838	4,581,408	3,238,812
June	3,983,004	3,603,438	4,156,409	4,708,200	4,886,158
July	<b>9,520,707</b>	5,830,425	5,825,343	<b>6,926,396</b>	6,891,120
August	<b>10,559,716</b>	7,249,627	6,077,424	<b>9,151,517</b>	6,337,500
September	<b>10,014,464</b>	6,465,858	7,038,574	5,240,810	<b>8,674,855</b>
October	3,625,254	4,336,644	5,092,633	3,385,005	<b>4,957,851</b>
November	2,996,933	2,690,312	3,221,162	3,450,138	2,943,594
December	2,906,793	2,568,075	2,812,959	3,262,152	3,320,376
Peak Day Use	7/26 = 3.06 MGD	8/4 = 2.43 MGD	8/15 = 2.78 MGD	8/10 = 3.00 MGD	8/9 = 2.50 MGD
Mo. Average	4,895,666	3,937,223	4,074,901	5,780,211	4,460,017
Population	9,222	9,344	9,356	9,369	9,369
Gallons Per Capita Daily	132	105	108	153	118
Annual Totals	58,747,989	47,246,671	48,898,813	60,480,747	53,520,203
Figures taken from Water Use Summary 2010-2014			Average gpcd	Totals	Monthly Ave
5 year Average <sup>1</sup>	1 – Average figured based on 2010-2014 totals		123.2 gpcd	53,778,885	4.48 MCF
Pool Leak	No Wastewater being delivered to Oregon Gardens, potable water used during highlighted months				

The average daily water delivered for the past five years is 147,339 cubic feet (1.10 MGD), equates approximately 123 gallons per capita daily. The table above illustrates both normal usage and peak seasonal use occurring in the highlighted months, typical for an Oregon water utility. Shown in “blue” indicates a leak found at the public swimming pool. Green shaded cells signify the times the wastewater treatment plant would not be supplying the Oregon Gardens with irrigation water, yet instead using potable water.

The gallon per capita per day figure is slightly skewed as the averages include increased water to the Oregon Gardens those seven months during the five year term of review. Extrapolating the same months (July through October) from those years where wastewater was substituted for potable water, averaging the figures among the number of months, indicates a substantial reduction in over-all averages. Table 1-4 compares those months when potable water was sold when reclaimed water could not be substituted. It is a goal of the City of Silverton to continue to find ways to use water from another means other than water from the drinking water treatment plant for irrigation purposes at the Oregon Gardens.

<b>Table 1-4: Variation in Water Usage</b>				
Month	Years	5 Yr. Mo. Average	Adjusted Averages <sup>1</sup>	Difference
July	11, 12, 14	6.9 MCF	6.16 MCF	11%
August	11, 12, 14	7.84 MCF	6.51 MCF	17%
September	11 – 13	7.44 MCF	6.23 MCF	17%
October	10 – 13	4.22 MCF	4.07 MCF	4%

<sup>1</sup> – Adjusted figures when the anomaly month is not factored into the average.

**1.5 Water Rights: OAR 690-086-0140 (5)** a tabular list of water rights held by the municipal water supplier that includes the following information:

- (a) Application, permit, transfer, and certificate numbers (as applicable);
- (b) Priority date(s);
- (c) Source(s) of water;
- (d) Type(s) of beneficial uses specified in the right;
- (e) Maximum instantaneous and annual quantity of water allowed under each right;
- (f) Maximum instantaneous and annual quantity of water diverted under each right to date;
- (g) Average monthly and daily diversions under each right for the previous year, and if available for the previous five years;
- (h) Currently authorized date for completion of development under each right; and
- (i) Identification of any stream flow-dependent species listed by a state or federal agency as sensitive, threatened or endangered that are present in the source<sup>1</sup>, any listing of the source as water quality limited and the water quality parameters for which the source was listed<sup>2</sup>, and any designation of the source as being in a critical ground water area.<sup>3</sup>

Application #	Permit #	Source	Beneficial Use	Priority Date	Authorized Amount cfs (mgd)	Development Limitation
S – 4924	S – 3226	Abiqua Creek	Municipal	05/24/1916	10.0 cfs <sup>A</sup> (6.5 mgd)	7.0 cfs
S – 1297	S – 622	Silver Creek	Municipal	03/16/1911	5.00 cfs (3.2 mgd)	5.0 cfs
S – 50185	S -36714	Silver Creek Reservoir	Municipal	03/20/1973	1,300 acre feet <sup>B</sup>	200 acre feet
R - 50184	R – 5948	Silver Creek Reservoir	Municipal (Storage for)	03/20/1973	NA	NA
GR-367	NA	Well	Municipal	02/10/1935	500 gpm (0.72 mgd)	NA
<b>Totals</b>					<b>15 cfs <sup>A</sup> (9.7 mgd)</b>	<b>12 cfs (7.7)</b>
Permit S – 622 = Certified -2400 – 04/14/1911						
A – Water right has “Development Limitation at 7.0 cfs, B – stored water only, * Associated with Reservoir =						

Permit #	Maximum Instantaneous Allowed	Daily Maximum Allowed	Annual Quantity Allowed	Average Monthly / Daily Diversions <sup>1</sup>		Ave Annual Water Diverted <sup>*</sup>	Max. Month Instantaneous Diverted
S – 3226	10.0 cfs	6.5 mgd	2.36 BG	4.89 MCF	0.163 MCF	58.66 MCF	9.93 MCF 74.29 MG <sup>2</sup>
S – 622	5.00 cfs	3.2 mgd	1.18 BG	0.421 MCF	0.014 MCF	5.05 MCF	2.80 MCF 20.98 MG <sup>3</sup>
S – 36714 R – 50184	N/A		G	NA	NA	NA	0.00 MCF
<b>Totals</b>				5.311 MCF	0.177 MCF	63.71 MCF	9.93 MCF 74.29 MG <sup>4</sup>
1 - Calculated based on figures from Water Use Recording Form, 2 – highest single month in timeframe, July 2010, 3 – April 2014, 4 – S-3226 Permit only, * - Averaged annual water diverted October 2009 through September 2014, MCF = million cubic feet							

An authorized date for completion for development of each water right, based on population growth, industry changes and efficiency of the water system can be difficult to ascertain. Reviewing past conservation documents and the City of Silverton’s current Water Master Plan, the basis for establishing any guidelines is focused on population growth and the gallons per capita per day. Three figures representing annual growth for the Silverton area are 1.3%, 1.5% and 1.92%, procured from 2003 Water Management Conservation Plan, 2011 Water Master Plan (section 2.2) and Portland State University -Population Research Center, respectively.

Using a median range, 1.57% annual growth rate was applied to the projected growth and potential completion of each water right, displayed in Table 1-7. Using 123 gallons per capita per day, applying prospective 1.57% annual growth, will assist in determining total demand of necessary water to meet the City of Silverton’s requirements for the upcoming 20 years. Averaged over the past 5 years, 92% of water is diverted from Abiqua Creek and the remaining from Silver Creek. These figures will be applied to the beneficial use of each water right. The decisive factors do not take in account a surge in building or development in the City of Silverton’s service area. Nor does it take into account any future change in land use zoning or a decline in population.

<b>Table 1-7: Water Right Development / Completion</b>							
Permit #	Date	Amount	2010-15	2020	2025	2030	2035
<b>Population Speculation</b>			<b>9,369</b>	<b>10,104</b>	<b>10,263</b>	<b>11,068</b>	<b>11,948</b>
S – 3226	03/16/1911	10.0 cfs <sup>A</sup> 6.5 mgd	1.69 cfs 1.095 mgd <b>16.9 %</b>	1.92 cfs 1.24 mgd <b>19.2 %</b>	1.95 cfs 1.26 mgd <b>19.5 %</b>	2.10 cfs 1.245 mgd <b>2.10 %</b>	2.27 cfs 1.47 mgd <b>22.7 %</b>
S – 622 <b>Cert # 2400</b>	03/16/1911	5.00 cfs 3.2 mgd	0.14 cfs 0.090 mgd <b>2.8 %</b>	0.15 cfs 0.097 mgd <b>3.0%</b>	0.16 cfs 0.103 mgd <b>3.2%</b>	0.17 cfs 0.108 mgd <b>3.4%</b>	0.18 cfs 0.115 mgd <b>3.6%</b>
<b>Totals</b>		<b>15.0 cfs 9.79 mgd</b>	1.83 cfs 1.182 mgd	2.07 cfs 1.33 mgd	2.11 cfs 1.36 mgd	2.27 cfs 1.46 mgd	2.45 cfs 1.58 mgd
S – 36714 R – 50184	03/20/1973	14.00 cfs 905 mgd	0.00 cfs 0.00 mgd 0%	NA 0%	NA 0%	NA 0%	NA 0%
S – 3226		Peak Day Water Use	4.3 cfs	4.5 cfs	4.7 cfs	5.1 cfs	5.5 cfs
Peak Day Use as % of Water Right			43%	45%	47%	51%	55%
<small>All calculations are determined by maximum gallons consumed for a single month from October 2009 through September 2014, figured at 123 gallons per capita daily. As system improvements continue to be applied, actual water consumption will likely be reduced,  A – Water right has “Development Limitation at 7.0 cfs</small>							

The water sources for the City of Silverton are both the Abiqua Creek and Silverton Creek, which are situated in the upper Willamette River Watershed basin, 4<sup>th</sup> field hydrologic unit code (HUC) 17090009, sub-basin 17090009-01. The sub-basin areas are shown in maps depicting the Molalla-Pudding River Watershed, Fish Distribution and Habitat areas, both the Chinook and Steelhead Distribution maps on pages 10-13.

Table 1-8 designates the two species of fish, the area of the water source, their listing as sensitive, threatened or endangered. The Pudding River Watershed is considered an Evolutionary Significant Unit “ESU” for both **Chinook and Steelhead Trout**, which contains



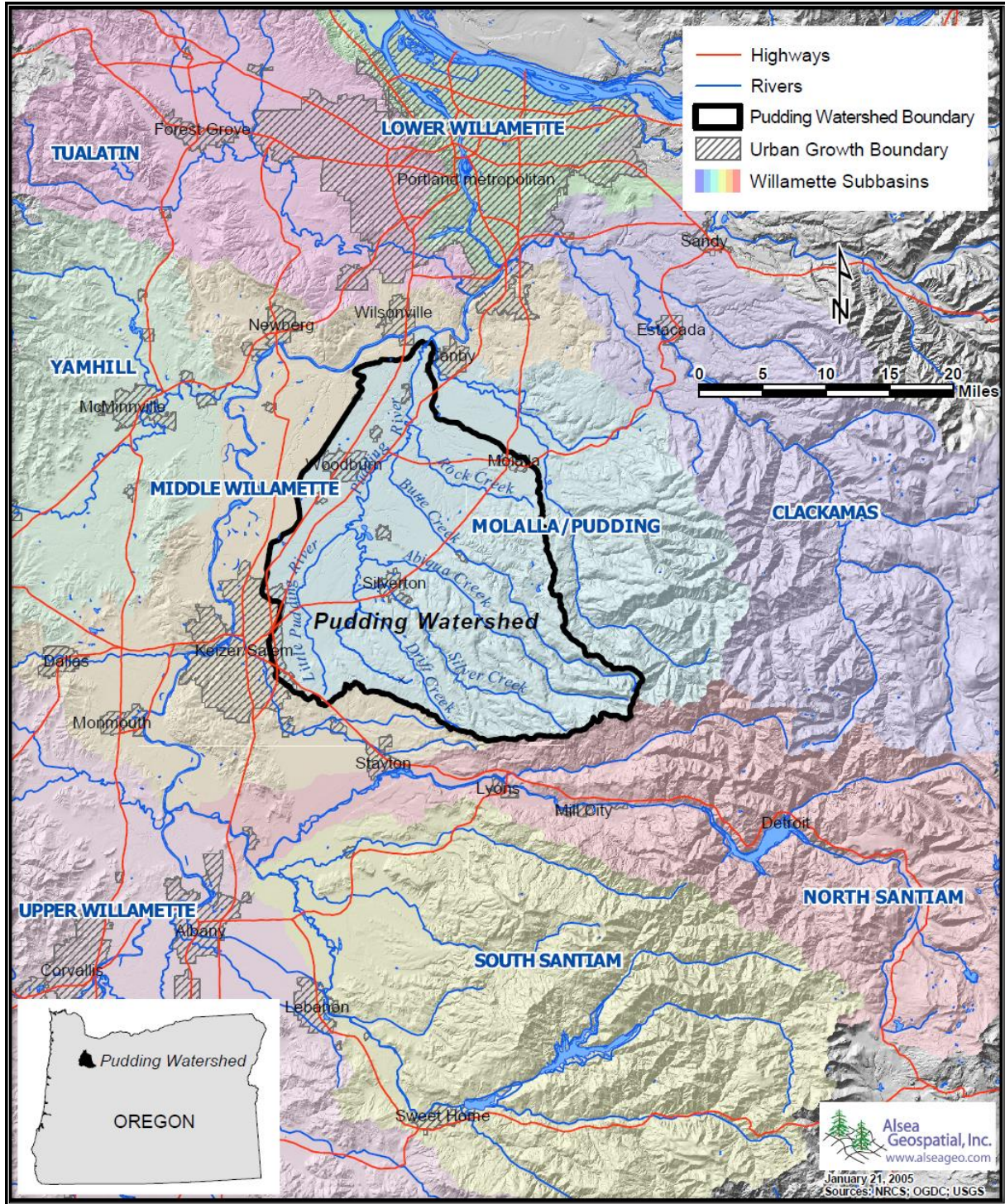
spawning, rearing, or migration of these primary constituent elements “PCE”, as well as management activities that may affect the PCEs in the watersheds.

<b>Table 1-8: Endangered Species</b>				
<b>Species</b>	<b>ESU Area</b>	<b>ESA Listing</b>	<b>Area Designation</b>	<b>ESA Critical Habitat</b>
<b>Upper Willamette Basin Water Shed - Hydrologic Unit Code 17090009</b>				
<b>National Oceanic Atmospheric Association</b>				
Chinook	Upper Willamette*	Threatened	ESU	Yes (9-2-05)
Spring Chinook	Upper Willamette	Threatened	SMU	Yes (9-2-05)
Steelhead	Upper Willamette*	Threatened	ESU	Yes (9-2-05)
<b>Molalla – Pudding Sub Basin - Hydrologic Unit Code 17090009-01</b>				
<b>Oregon Department Fish and Wildlife</b>				
Chinook	Upper Willamette*	Critical	ESU	SMU
Spring Chinook	Upper Willamette*	Critical	ESU	SMU
Steelhead	Upper Willamette*	Vulnerable	ESU	SMU - winter
* - ESU, “evolutionary significant unit” is a Federal listing as threatened or endangered by either NOAA National Marine Fisheries Service (6/28/2005) or the U.S. Fish and Wildlife Service. 1 – Distinct Population Segment =NOAA National Marine Fisheries = ESU, SMU – significant management unit. Water quality concern is dissolved oxygen				

The Critical Habitat Analytical Review Team “CHART” elevated the Abiqua Creek/Pudding River HUC5 from a low to medium conservation value, noting that recent data from a watershed assessment indicate that this HUC5 has some of the highest-quality habitat in the Pudding River sub-basin, (M. Simmons, NOAA Fisheries, pers. com), noting that this particular sub-basin has relatively low abundance and distribution objectives identified by ODFW for spring Chinook. Due to higher quality water in Abiqua Creek, the CHART noted that Abiqua Creek/ Pudding River has higher order of densities and more fish.<sup>1</sup> An additional concern for water quality is the level of dissolved oxygen, as a parameter that will be continually monitored in the future.

1 — NOAA Fisheries, Upper Willamette River Chinook/Steelhead ESU Final Assessment Report

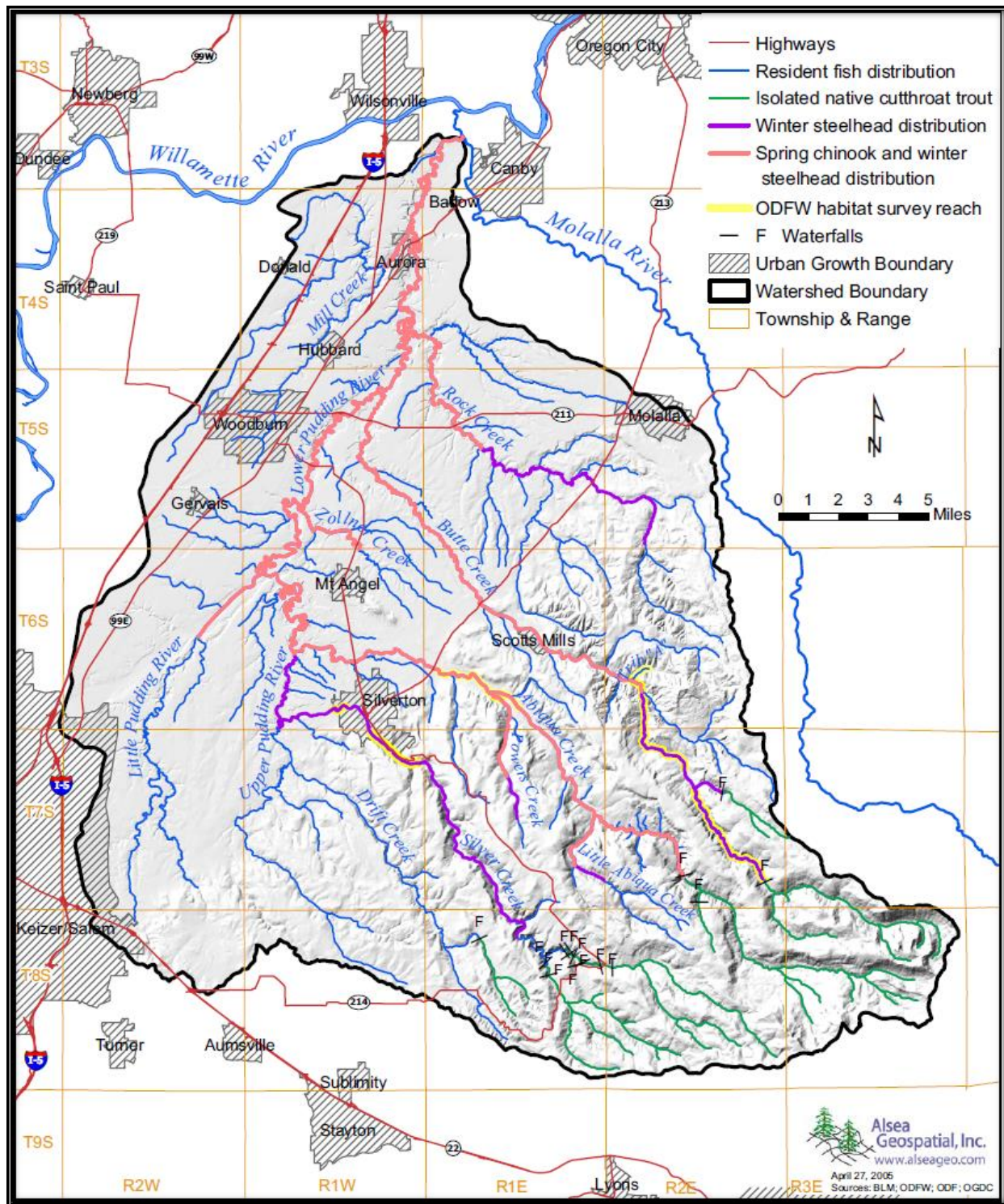
## **Molalla Pudding River Watershed**



Map – ODFW – Pudding Watershed clearing house data – 2006

### Fish Distribution and Habitat Area – Pudding River Watershed

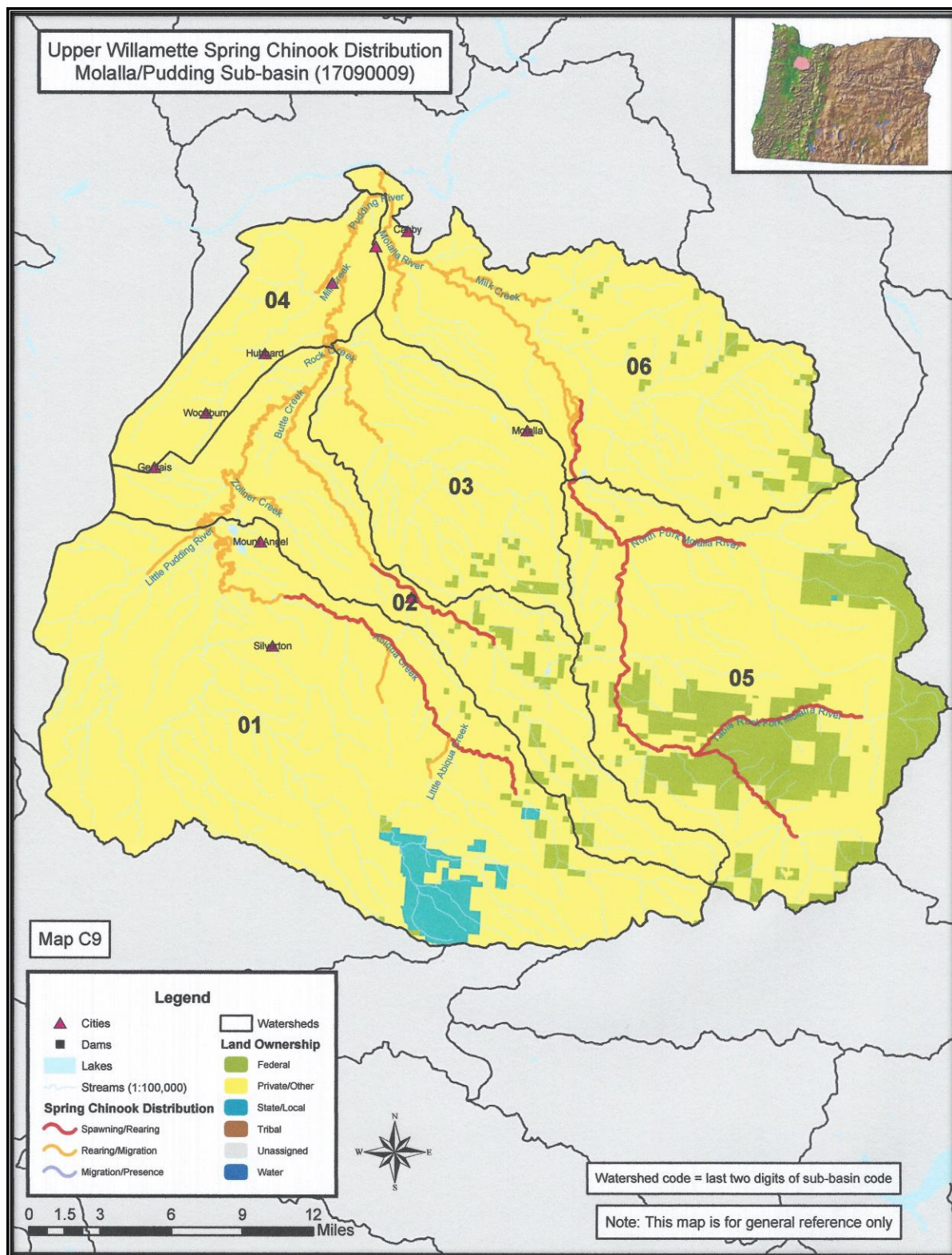




Map – ODFW – Pudding Watershed clearing house data – 2006

### Spring Chinook Spawning Rearing Migration Areas in Molalla Pudding Sub-basin



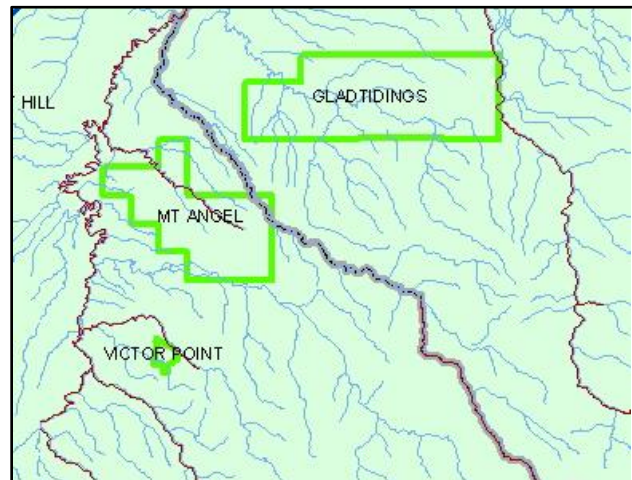


Map – National Oceanic Atmospheric Administration – National Marine Fisheries Service

### Winter Steelhead Spawning Rearing Migration Areas in Molalla Pudding Sub-basin

In 2008, the Water Quality Management Plan (WQMP) by the Department of Environmental Quality was to establish the Total Maximum Daily Load (TMDL) parameters for a series of pollutants. A TMDL is a regulatory term describing a value of the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards. Alternatively, TMDL is an allocation of that water pollutant deemed acceptable to the subject receiving waters. In a 2004-2006 study, 28 stream segments within the Molalla-Pudding Watershed were listed in 303(d) section of the Clean Water Act as water quality limited or needing TMDLs. According to the DEQ 2010 Integrated Report for assessed water quality the database for water quality limited and the water quality parameters for which the Abiqua and Silver Creeks were listed was a single pollutant of “dissolved oxygen”.<sup>1</sup> This report is currently effective until the 2012 Integrated Report is finalized by the Environmental Protection Agency. See Appendix “A” for Abiqua and Spring Creek information taken from the 2010 Integrated Water Quality Assessment Report.

Regarding any designation of the source as being in a critical ground water area, the map depicts those areas (Mt. Angel) that have been studied and showing some decline in the groundwater table. This 22 square mile area just north of the City of Silverton has shown water levels in wells has declined in the Mt Angel area 3.3 to 8.2 feet per year (early 1970s to 1992).<sup>1</sup> 1 –(Runyon, et al.,2006) DEQ TMDL WQMP December 2008, Map – ODFW – Pudding Watershed clearing house data – 2006



#### **1.6 Water use characteristics: OAR 690-086-**

**0140 (6)** A description of customers served including other water suppliers and the estimated numbers; general water use characteristics of residences, commercial and industrial facilities, and any other uses; and a comparison of the quantities of water used in each sector with the quantities reported in the water supplier's previously submitted water management and conservation plan and progress reports;

The City of Silverton serves approximately 9,500 people using 3,000 connections; with water served mainly to rural residential users (68%) and approximately 26% commercial/industrial consumers. The remaining 6-7% of consumed water is provided to governmental, school and churches. Typical water usage ranges from 105 to 123 gallons per capita per day. Average daily metered water for the past five years is 154,320 cubic feet (1.15 MGD), gallons.

Since this water management and conservation plan is the initial plan to the Water Resources Department, the characteristics of water use amounts are taken from 2009 through 2014.

Table 1-9: Water Use Characteristics		
Classification	Consumption	
	Gallons per day	% of total gallons
Residential		68.0
Commercial / Industrial		26.0
Governmental, Schools etc.		6.0
<b>Totals</b>		
		100

Gallons per day capita = approximately 123 gallons, which includes all classifications of users. Water usage report 2009-2014

**1.7 Interconnections with other systems: OAR 690-086-0140 (7)** Identification and description of interconnections with other municipal supply systems;

Presently, the City of Silverton has no inter-ties with any entity, either public or private, primarily due to the rural setting in which the city is located. Mt. Angel, approximately 3 miles north of the City of Silverton, consumes nearly 0.50 MG per day (2010), with a peak demand at 0.84 MG. The City of Silverton should anticipate being approached by Mt. Angel in the future as they look for a more long-term regional solution to their water supply. <sup>1</sup>

<sup>1</sup> – Taken from Silverton Water Master Plan 2011 – Keller Associates

**1.8 System Schematic OAR 690-086-0140 (8)** A schematic of the system that shows the sources of water, storage facilities, treatment facilities, major transmission and distribution lines, pump stations, interconnections with other municipal supply systems, and the existing and planned future service area; and

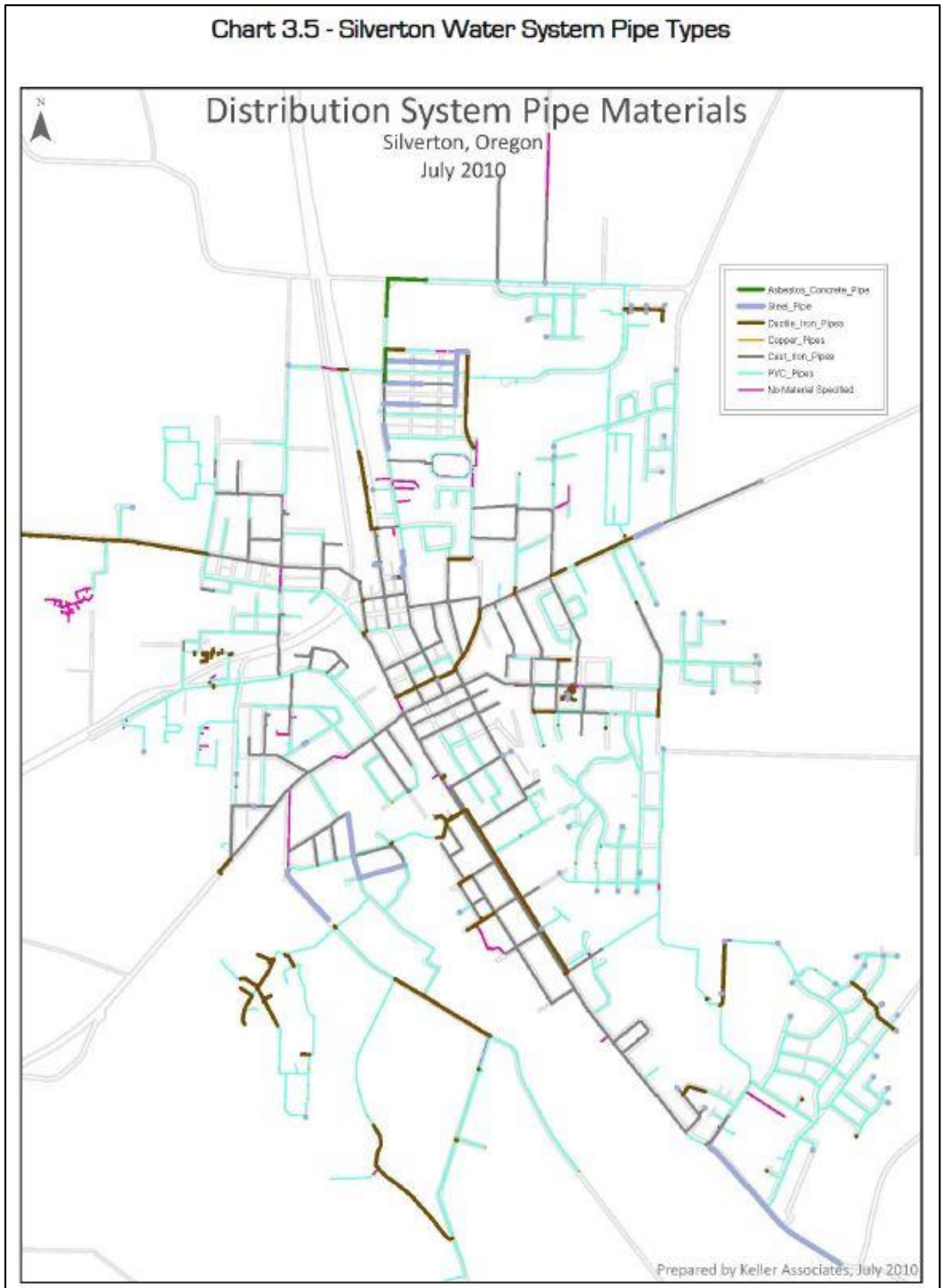
The City of Silverton’s water system schematic was provide by the city. The map depicts aerial views using a drawn map outlining the city’s storage and treatment facilities, major transmission and distribution lines, service boundary limits, urban growth locations of distribution system components, and planned future service in the form of “urban growth boundary”. See “Silverton Water System” at the end of this section.

**1.9 Quantification of System Leakage: OAR 690-086-0140 (9)** a quantification and description of system leakage that includes any available information regarding the locations of significant losses.

Taken from the water production and usage reports; dated from July 2009 through June 2014, and placed in the Table 1-9, the City of Silverton has an approximate water loss of 17.4 percent, *not including figures for major breaks that are expeditiously repaired, and un-metered authorized or un-authorized uses*, The typical method for estimating system leakage is to take the difference between the metered diversions at the source and metered customer use, corrected for any un-metered use such as, main flushing, street cleaning and all other known uses.



Chart 3.5 - Silverton Water System Pipe Types





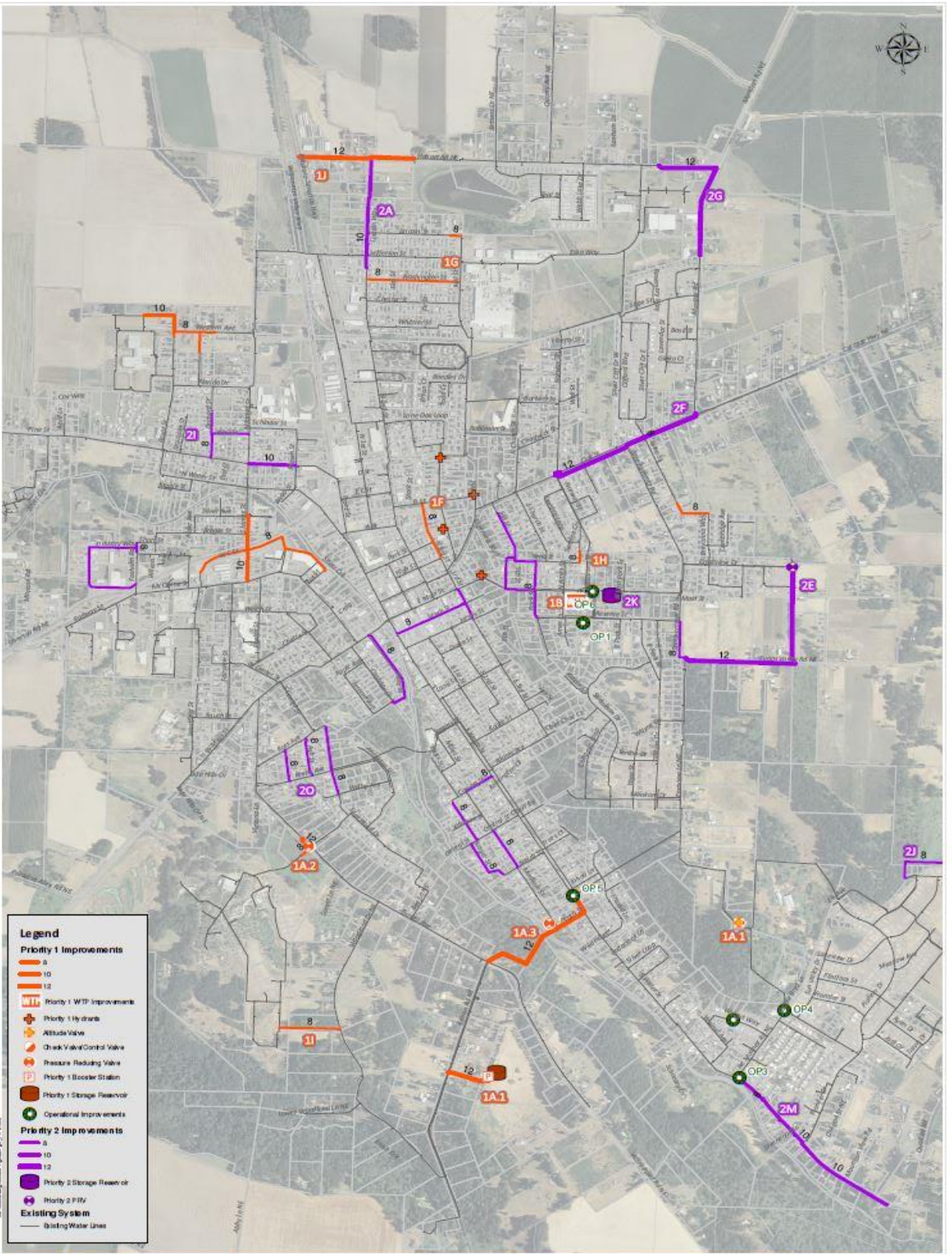


Figure:

4

Title:

Priority 1&2 Improvements

**WATER FACILITIES  
MASTER PLAN  
2010**

Prepared for:

**CITY OF  
SILVERTON,  
OREGON**



Inserted on pages 17 and 18, are two maps taken from the 2011 Water Master Plan depicting both the water distribution system by the type of pipe currently in use and the replacement timeline for older, leaking pipe as part of the Capital Improvement Plan. The city is completing Project ID number 1G on the Water Facilities Master Plan to improve fire flow and remove problematic lines. Striving to complete the entire list, variable circumstances enter the equation as to the decisions made to complete any identified task. The City of Silverton will continue an effort to complete projects based on the most appropriate task, cost to complete and resources available.

<b>Table 1-10: Water Production / Water Loss (million cubic feet)</b>				
Year	Raw Water	Customer Usage	System Ops	Water Loss % <sup>1</sup>
2010	65.37	58.74	0.06	9.06%
2011	72.86	47.24	0.06	35.2%
2012	63.23	48.89	0.06	21.9%
2013	60.82	60.48	0.06	0.006%
2014	68.18	53.52	0.06	20.8%
Annual Ave:	66.09	53.77		17.4%
<b>1 – Water loss is a percentage of raw water figures</b>				

The other uses, such as treatment plant back pulse, sedimentation basin cleaning, line- flushing and hydrant maintenance are figured and accounted for, yet not used in determining water loss. Even though these maintenance procedures are necessary in maintaining valuable water quality, the quantities of water used during these procedures are not calculated in the above figures.

As routine repair and distribution system upgrades are scheduled in the future, City of Silverton will likely reduce the percentage of unaccounted water and remain under the 15% threshold.

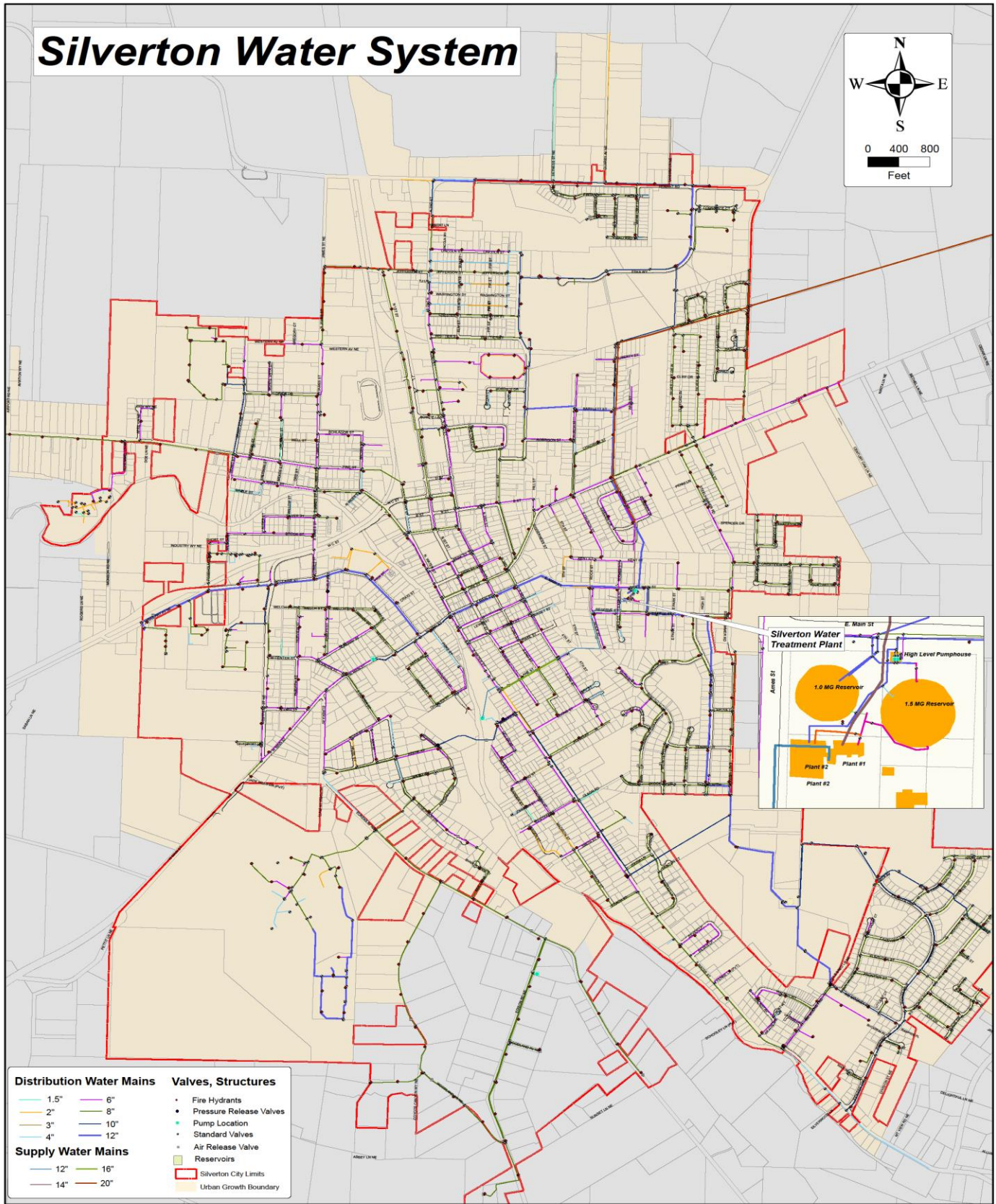
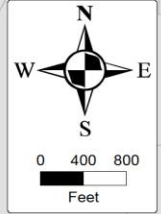
One single aspect with the most impact (pertaining to water usage) is the use of effluent from the wastewater treatment plant for irrigation of the Oregon Gardens. When the effluent is not available, the city supplies potable water from the water production plant as a substitute. From May 2014 through October 2014, an average 0.366 MGD was supplied to the Oregon Gardens. Best management practices are continually being reviewed to keep this process in place, using wastewater effluent as a primary source for irrigation water at the Oregon Gardens.



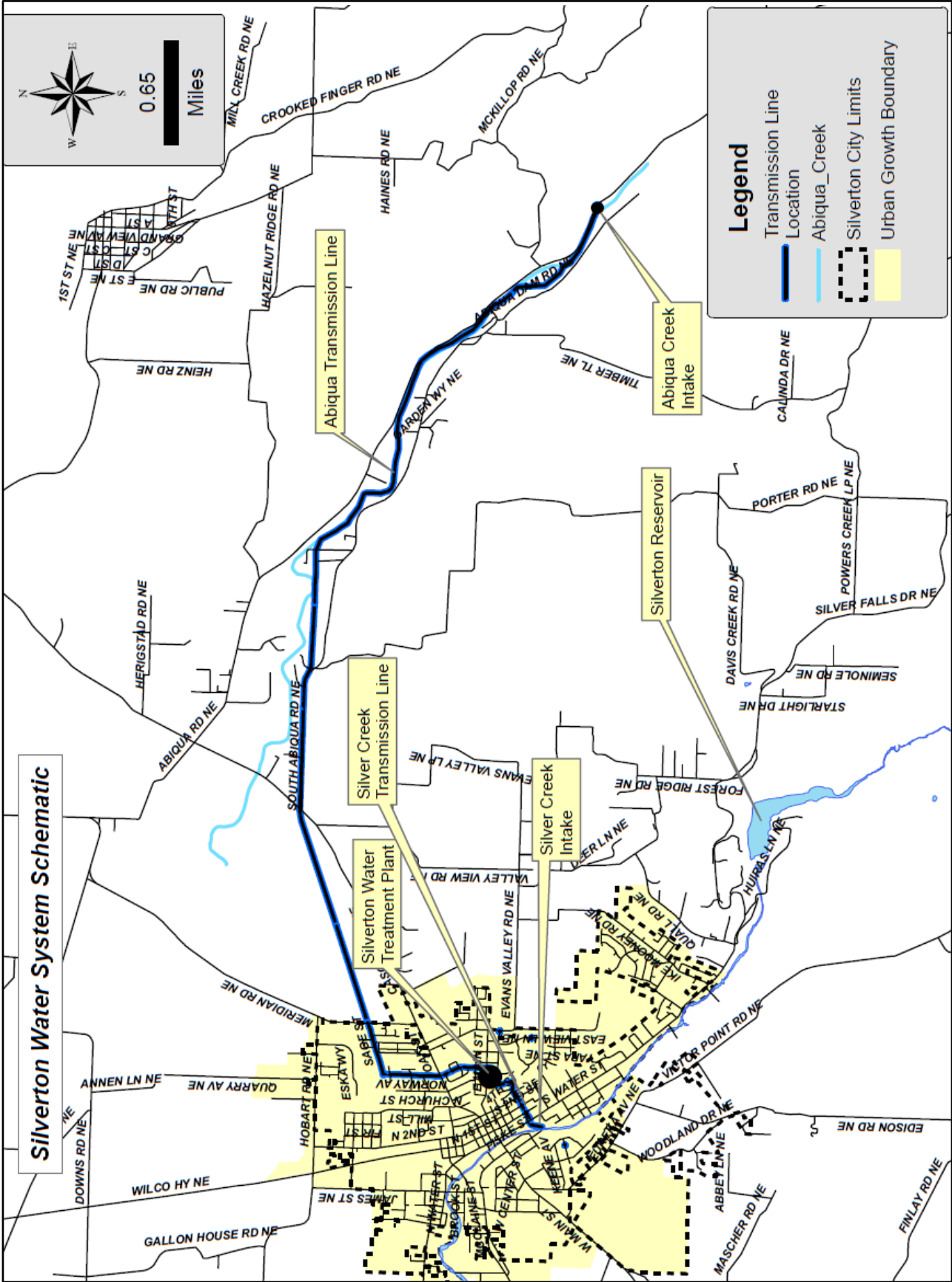




# Silverton Water System



- |                                 |                           |
|---------------------------------|---------------------------|
| <b>Distribution Water Mains</b> | <b>Valves, Structures</b> |
| 1.5" (light blue line)          | • Fire Hydrants           |
| 2" (yellow line)                | • Pressure Release Valves |
| 3" (green line)                 | • Pump Location           |
| 4" (cyan line)                  | • Standard Valves         |
| 6" (purple line)                | • Air Release Valve       |
| 8" (light green line)           | • Reservoirs              |
| 10" (blue line)                 | ■ Silverton City Limits   |
| 12" (dark blue line)            | ■ Urban Growth Boundary   |
| 14" (brown line)                |                           |
| 16" (dark green line)           |                           |
| 20" (orange line)               |                           |



**Silverton Water System Schematic**

**Legend**

- Transmission Line Location
- Abiqua\_Creek
- Silverton City Limits
- Urban Growth Boundary

## SECTION TWO

### WATER CONSERVATION ELEMENT

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Water conservation activities provide for the sustainability of water for the future. Not all conservation efforts are going to be effective. It is those that have been implemented and continued efforts behind them that will show the greatest results.

The City of Silverton will employ a number of water conservation efforts which may include water system audits, leak detection, public education, and retrofitting of inefficient water devices. Evidence may show a greater requisite of time and resources to research, implement and prove the effects of water conservation activities.

**2.1 Progress Report: 690-086-0150 (1)** [A progress report on the conservation measures scheduled for implementation in a water management and conservation plan previously approved by the Department, if any;](#)

This is the first water management conservation plan for City of Silverton. It is the intent of both city administration and the City Council to continue to enhance the ideals of conservation through system repair, customer's knowledge, and implementation of conservation measures. The city will review efforts made in meeting the benchmarks established and provide a progress report approximately five years from 2015.

**2.2 Measurements and Reporting: 690-086-0150 (2)** [A description of the water supplier's water use measurement and reporting program and a statement that the program complies with the measurement standards in OAR Chapter 690, Division 85, that a time extension or waiver has been granted, or that the standards are not applicable;](#)

The measurement and reporting information is taken from the annual report, due December 31 of each year, to the Water Resources Department. This report includes the amount of water that is diverted during the previous year, October 1 through September 30. The City of Silverton adheres to the measurement and reporting requirements established in the Oregon Administrative Rules. Flow meters are placed throughout water treatment process units that report to the programmable logic controller. For finished water on the potable side of the water treatment plant, a meter is used to identify how much water is produced and pumped to the customers. Production meter readings are documented on a daily basis.

The City of Silverton complies with the measurement standards in Chapter 690, Division 85 of the Oregon Administrative Rules. These standards require the submittal of annual water use, and the methods for measuring and computing water use. The City of Silverton applies the "flow meter method" to determine the quantities of water diverted at their intakes, and put to beneficial use. Neither time extensions nor waivers are necessary to meet this standard.



**2.3 Implemented Measures: 690-086-0150 (3)** A description of other conservation measures, if any, currently implemented by the water supplier, including any measures required under water supply contracts;

At the time of this writing, the City of Silverton has taken steps in implementing conservation efforts other than a review of water rates and how those rates can reduce the consumption. As the progress in water conservation expands, the focus will be assisting both residential and commercial customers with continued educational guidelines regarding water saving devices.

Information in this water management conservation plan including public education; the addition of sending wastewater effluent to the Oregon Gardens; the meter replacement program; and quantity based billing software, has been and will continue to be implemented.

**2.4 Annual Water Audit: OAR 690-086-0150 (4)** A description of the specific activities, along with a schedule that establishes five-year benchmarks, for implementation of each of the following conservation measures that are required of all municipal water suppliers:

**(4)(a)** An annual water audit that includes a systematic and documented methodology for estimating any un-metered authorized and unauthorized uses;

The City of Silverton regularly performs an annual water audit by means of reviewing both amount of water produced in comparison to the amount of water sold to customer's . This includes reviewing water usage characteristics per customer; water used for line flushing and backwash water; and finally comparing those measurements against the measurements at the intakes on Abiqua and Silver Creeks.

Table 1-10 on page 17, outlines the City of Silverton's production, sold, and loss reports that indicate an average of 17.4 percent loss or unaccounted water.

The 17.4 percent water loss is a realistically acceptable number in regard to water loss percentages. With new infrastructure projects to the distribution system during the upcoming years, the probability of a reduction loss below 15 percent is obtainable.

The City of Silverton will make every effort to continue to reduce the percentages of water loss (unaccounted water), looking at a goal of possibly single digit percentages of unaccounted for water. At the time of writing this document, there is no significant findings to explain the discrepancy of the large leak estimates from 2011 through 2014.

**2.5 Full Metering of System: OAR 690-086-0150 (4) (b)** if the system is not fully metered, a program to install meters on all un-metered water service connections. The program shall start immediately after the plan is approved and shall identify the number of meters to be installed each year with full metering completed within five years of approval of the water management and conservation plan;

The City of Silverton is a fully metered water system which includes meters on both the raw water sources and consumer connections. Production meters are read daily and customer meters are read monthly.

**2.6 Meter Testing and Maintenance: OAR 690-086-0150 (4) (c)** A meter testing and maintenance program;

The City of Silverton approaches meter testing and maintenance (replacement) using a program with the following these steps:

1. Usage - any discrepancy that is found in consumption being either below or above normal average of any single user, during any specific time of year.
2. At the time of writing this water management and conservation plan, maintenance crews have replaced sixty percent of all customer's meters with remote read meters. Plans are to replace 250 meters annually for the next five years. This action will provide the city with all meters less than ten years of age. The city has enhanced their efforts of meter replacements from a fifteen year timeline to ten years.
3. The city continues to test larger (3"+) meters annually.

**2.7 Rate Structure: OAR 690-086-0150 (4) (d)** A rate structure under which customers' bills are based, at least in part, on the quantity of water metered at the service connections;

The City of Silverton utilizes a monthly rate, incorporating a flat cost charge based on meter size and a consumption charge for all water consumed. Customers outside city limits are charged at 1.5 times the residential rate for both water. The City's base rate, effective July 1<sup>st</sup>, 2015, is currently \$15.87 per month for residential users having a 5/8" meters, 3/4" meters and one inch meters required by fire codes having sprinklers. An additional cost of \$2.27 for every unit (100 cubic feet or 748 gallons) consumed.

[Copy of rates included at the end of the section.](#)

**2.8 Excessive Leakage: OAR 690-086-0150 (4) (e)** If the annual water audit indicates that system leakage exceeds 10 percent, a regularly scheduled and systematic program to detect leaks in the transmission and distribution system using methods and technology appropriate to the size and capabilities of the municipal water supplier; and

Currently, the City of Silverton estimates that an annual 17.4 percent system leakage has been properly calculated. Leaks are categorized into two priorities, a) leaks report by City staff and, b) leaks reported by customer complaint. Both situations are assessed and prioritized. Large water leaks are repaired immediately. Smaller leaks are listed in software database called



iWorQ that assists in managing schedules for work permits that the crews are then assigned to repair.

Bi-annual valve and hydrant exercising is part of the routine flushing program, with broken items placed on a list for replacement. With the many tasks water crews perform, repairs to the distribution system are performed throughout the year.

The Water Master Plan “Capital Improvement Projects” for upgrading the water system includes detailed information regarding (Priority 2) steps taken to improve fire flows, pressure circulation, hydrant coverage, pipeline replacement, operational improvements and improved maintenance. These aspects will contribute to a reduction in water loss to a goal of ten percent and possibly single digit percentage water loss.

A benchmark to be considered in the future will be the acquisition of in-house leak detection equipment. A cost analysis will be performed to weigh the expense of the equipment against the value and purchase price. Leak detection performed in 1994, 1996 and 1997 did not find significant leakage findings compared to the cost the city spent for an outside contractor.

**2.9 Public Education Program: 690-086-0150 (4) (f)** [A public education program to encourage efficient water use and the use of low water use landscaping that includes regular communication of the supplier's water conservation activities and schedule to customers;](#)

Future City webpage additions will include educational points that encourage the consumers in water conservation:

- Landscape suggestions with native plants and drought tolerant to reduce water requirements.
- Convert older fixtures to more water efficient devices.
- Instill the idea of sweeping patios, drives and sidewalks instead of washing them with water.
- Articles prompting consumers to fix leaks in a timely manner. Examples of dripping sinks and running toilets relating to wasting thousands of gallons of water, which increases the water bill.
- Water in early morning or late evening. Less water will be lost to evaporation, and try not to water things that don't grow, like sidewalks and fences

The City of Silverton will continue the efforts of water conservation by; 1) providing additional information to the consumers through the annual Consumer Confidence Report; 2) updating of the City webpage; 3) and distributing brochures which encourage the use of water saving devices and water friendly gardening techniques. The drought of 2015 prompted the City of Silverton to engage the community with enhanced information regarding water conservation. Methods implemented during 2015 included presentations to city council (televised), preparation and distribution of flyers, updates to the city's website, information added to the utility bill, and an e-mail alert system used to disseminate curtailment information. This

approach will be the foundation for the future when similar conditions develop. The City of Silverton has provided copies of two informational flyers that were distributed to the citizens. Copies can be found in appendices AA and BB.

	Year	2016	2017	2018	2019	2020
Measure						
Annual Audit		✓	✓	✓	✓	✓
Metered System		✓	✓	✓	✓	✓
Meter Replacement / Testing		✓	✓	✓	✓	✓
Rate Structure		Being considered		✓	✓	✓
Excessive Leakage		✓	✓	✓	✓	✓
Public Education		✓	✓	✓	✓	✓
Retrofit Fixtures		Develop for future – 3 year				

✓ - Measure continues as an on-going effort towards overall conservation.

**2.10 Expansion / Diversion OAR 690-086-0150 (5)** If the municipal water supplier proposes to expand or initiate diversion of water under an extended permit for which resource issues have been identified under OAR 690-086-0140(5)(i), a description of the specific activities, along with a schedule that establishes five-year benchmarks, for implementation of a system-wide leak repair or line replacement program to reduce system leakage to no more than 15 percent or sufficient information to demonstrate that system leakage currently is no more than 15 percent.

The City of Silverton has been and will continue to be proactive about their water source and the final destination of its produced water. The five-year average peak day demand (2.8 mgd) uses about 43% of the City’s water rights in Abiqua Creek. The dual water sources are the Abiqua and Silver Creeks, with Abiqua Creek accounting for 18.9 percent of water right S-3226, or 12.6 percent of the city’s total water rights (See Table 1-2).

Specific activities will include and follow the capital improvement plan recommended by Keller Associates in the Silverton Water Master Plan. Listed as “Priority 2 Improvements” include distribution line replacement with an estimated cost of \$3.05 million dollars. As the list is implemented, the percentage of lost water through system leakage will be reduced. Coordinating efforts with the recommendations and conservation planning will be presented as a benchmark.

**2.11 Population Criteria OAR 690-086-0150 (6)** If the municipal water supplier serves a population greater than 1,000 and proposes to expand or initiate diversion of water under an extended permit for which resource issues have been identified under OAR 690-086-0140(5)(i), identification of any stream flow-dependent species listed by a state or federal agency as sensitive, threatened or endangered that are present in the source, any listing of the source as

water quality limited and the water quality parameters for which the source was listed, and any designation of the source as being in a critical ground water area, or if the municipal water supplier serves a population greater than 7,500, a description of the specific activities, along with a schedule that establishes five-year benchmarks, for implementation of each of the following measures; or documentation showing that implementation of the measures is neither feasible nor appropriate for ensuring the efficient use of water and the prevention of waste:

The City of Silverton should not need to expand or initiate diversion of water under the extended permit on Abiqua Creek within the next 20 years. The forecasted peak day demand of 5.5 cfs should not exceed the 7 cfs limit in the extended permit. The city serving a population of 9,540, , will apply a series of activities over the next five years to both promote water efficiency and reduce waste. Using the historical data for comparison, the staff will continue to perform the operational tasks as recommended in the water master plan and based on the budget that is voted on annually.

An enhanced educational program will provide the necessary means to instruct the consumers on the importance of water waste, potential limitations of the source, low flow fixtures and landscape system efficiencies.

Conversations with city staff indicate the awareness of stream flows (minimal and reduced), minor water right holders and the potential impact water consumption will play in regard to the entire water basin. Outlined in the curtailment section are trigger points that will provide more restrictive approach during times of long term arid conditions or when stream flows fall below the instream requirements to support aquatic life and habitat.

	Year	2015	2016	2017	2018	2019
Measure						
Leak Testing		On-going				
System Repair <sup>1</sup>		✓	✓	✓	✓	✓
Low Flow Fixtures		Develop for future – 3 -4 year timeline				✓
Landscaping		Being considered		✓	✓	✓
Irrigation Schedule <sub>2</sub>		✓	✓	✓	✓	✓
Public Education		On-going				

1 – Determined based on revenues and availability of time. 2 – Put in action when low rainfall/drought conditions exist.

**2.12 System Leakage: OAR 690-086-0150 (6) (a)** A system-wide leak repair program or line replacement to reduce system leakage to 15 percent, and if the reduction of system leakage to 15 percent is found to be feasible and appropriate, to reduce system leakage to 10 percent;

As per subsection 2.8, the City of Silverton is continually looking towards the betterment of their entire water system through tasks that reduces water loss. The need to implement line replacement in various locations is taken from the most current water master plan, yet coordinating both monetary and staff resources will be the hurdle to overcome. The primary goal for the City of Silverton is to reduce system-wide leaks to under 15 percent. Speculatively it can be conceived that total water loss can be reduce to 10 percent when implementation of the recommended repairs and replacements are completed.

**2.13 Technical and Financial Assistance OAR 690-086-0150 (6) (b) Technical and financial assistance programs to encourage and aid residential, commercial, and industrial customers in implementation of conservation measures;**

The City of Silverton currently does not provide technical or financial assistance in developing water conservation ideas, such as rebates for water efficient fixtures, water audits for households, and public information. As stated in sub-section 2.9, the city will be using their webpage as its primary means to share information with its consumers. Any future ideas regarding water conservation will be decided by either city administration staff or the City Council.

**2.14 Financed Retrofitting: OAR 690-086-0150 (6) (c) Supplier financed retrofitting or replacement of existing inefficient water using fixtures, including distribution of residential conservation kits and rebates for customer investments in water conservation;**

Retrofitting is the replacement of an older water fixture with one that is more water efficient, and ultimately offers considerable water saving potential in the home and business. Since an increase in the number of connections has occurred in recent times, it is believed that water efficient fixtures were placed in a majority of the current dwellings for the City of Silverton's consumers. A review of dwellings and the time frame in which they were constructed, along with an informal survey, will assist the city in determining the need to promote a fixture replacement program.

**2.15 Rate Structures: OAR 690-086-0150 (6) (d) Adoption of rate structures, billing schedules, and other associated programs that support and encourage water conservation;**

In subsection 2.7, details to the rate structure is provided as well as a copy of the current rates found at the end of this section. A visit to City of Silverton's webpage at <http://www.silverton.or.us/documentcenter/view/1670> will provide information on the most current rates. The City of Silverton management team has recently been assessing the rates to change from a flat block rate to an increase block rate. At this time, this option will not be implemented.

**2.16 Recycle / Reuse: OAR 690-086-0150 (6) (e)** [Water reuse, recycling, and non-potable water opportunities; and](#)

Reuse, recycling and use of non-potable water by homeowners and businesses has not been considered for the City of Silverton. Cost effectiveness of implementing a recycle / reuse program of non-potable water is relatively high as compared to those techniques currently in place at other entities.

Future contemplation of non-potable water reuse will be determined if rules require such actions and the cost associated with such a task makes it feasible. The City of Silverton would be open to learning about this type of usage, but presently no conversations have been initiated, as the idea seems too far into the future.

The single most relevant step towards water reuse is the implementation of using recycled water (effluent) from the City's wastewater treatment plant to assist the Oregon Garden for irrigation purposes. Tracking the quantity of used water is increasing in its priority due to the large consumption that would otherwise be supplied by potable water. Records show that an additional 30-50% more water is produced over average monthly uses when wastewater cannot be supplied for irrigation. [See Table 1-3](#)

**2.17 Other Conservation Measures: OAR 690-086-0150 (6) (f)** [any other conservation measures identified by the water supplier that would improve water use efficiency.](#)

The City of Silverton will continue to review all possible activities that provide greater benefit of water use, and are more cost effective, feasible, and long-lasting. At this time, the City of Silverton has identified the possibility of supplying recycled wastewater at the highest levels as well as looking at other water sources that may assist in supplying non-potable water to the Oregon Gardens.

**CITY OF SILVERTON**  
**RESOLUTION**  
**15-11**

**A RESOLUTION OF THE SILVERTON CITY COUNCIL AMENDING WATER USER RATES AND CHARGES**

**WHEREAS**, Section 13.24.010 of the Silverton Municipal Code provides that water rates and charges may be changed at any time by resolution of the City Council; and

**WHEREAS**, the City Council of the City of Silverton desires to change the water rates and charges; and

**WHEREAS**, the City Council of the City of Silverton desires to establish new rates and charges in accordance with the following rate schedule and corresponding appropriate City Code provisions for the same.

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF SILVERTON AS FOLLOWS:**

**Section 1:** Resolution No. 14-08 is repealed upon the effective date of June 30, 2015.

**Section 2:** The Water Rates and Fees are established:

**Rate Schedule – Water**  
**(All Multi Family Residential, Commercial, and Industrial inside the City)**

<b>Meter Size (inches)</b>	<b>Rate</b>	<b>Use Charge (per 100 cubic feet)</b>
5/8 & 3/4	\$15.87	\$2.27
1	\$26.44	\$2.27
1-1/2	\$52.88	\$2.27
2	\$84.60	\$2.27
3	\$169.22	\$2.27
4	\$264.40	\$2.27

**Rate Schedule – Water**  
**(All Single Family Residential inside the City)**

<b>Meter Size (inches)</b>	<b>Rate</b>	<b>Use Charge (per 100 cubic feet)</b>
1 and smaller	\$15.87	\$2.27
1-1/2	\$52.88	\$2.27
2	\$84.60	\$2.27
3	\$169.22	\$2.27
4	\$264.40	\$2.27

All Fire Line Rates are set at \$0.00 per month.

**Section 3:** That this resolution is and shall be effective July 1, 2015 and all rates and charges established herein for water customers shall go into effect as of such date.

## SECTION THREE

### WATER CURTAILMENT ELEMENTS

---

Water curtailment is designed to minimize the impacts of a short term emergency water shortage by reducing the demand and possibly look for an alternative water supply. Generally, conservation measures and a secondary supply, or a combination of the two are the most important tools water suppliers can use to immediately reduce the shock on the primary source. Curtailment plans usually develop through voluntary and mandatory restrictions of usage, dependent upon the severity of the shortage.

**3.1 Assessing Water Supply: 690-86-0160 (1)** A description of the type, frequency and magnitude of supply deficiencies within the past 10 years and current capacity limitation. The description shall include an assessment of the ability of the water supplier to maintain delivery during long-term drought or other source shortages caused by a natural disaster, source contamination, legal restrictions on water use, or other circumstances;

For the past 15 years, the city has not experienced a drought or mechanical failure which resulted in a supply deficiency. Severe winter storms that increase turbidity and upset the water treatment plant(s), does not affect the supply side of service but does increase the procedure time in order to restore filtration process. Pertaining to capacity limitations, the intake screens on Abiqua Creek match up with flow rates and permit S-3226 with an allowance of 10.0 CFS or 6.5 MGD This water permit has a **development limitation of 7.0 CFS**. The transmission lines have a limited carrying capacity of 7.42 CFS or 4.8 MGD, due to the minimum pipe size at 20 inches.

On Silver Creek the permit S-622 allows for 5.0 CFS which equates to 3.23 MGD, the pump capacity (with 2 pumps operating) equals 3.55 CFS or 2.3 MGD and a single pump at 2.63 CFS or 1.7 MGD. The reservoir capacity of 1,300 acre feet per year, has a limitation rate of 14 CFS or 9 MGD, and does not limit the flow of water based on permit R-5948 and permit 36714.

The water treatment plant has two facilities that operate in parallel which allows for adaptability during times of maintenance, failures and emergencies. Neither treatment facility has been incapacitated in such a way to negatively impact the water supply to the consumers.

Based on the locations of the intakes for both Abiqua and Silver Creeks, the vulnerability to contamination is limited Regarding capacity flows of both creeks, it is difficult to determine the comparison of “actual flows” to the flows establish as “minimum” requirements to support aquatic life, fish habitat and minimize pollution. Factors as sample site locations, and various change in times of the year make it difficult to compare minimum flows at the intake locations against said flows downstream.

**Abiqua Creek - Willamette Basin - Hydrologic Unit 17090009 - Water District 16**

Date Measure	Hydrologic Unit	Abiqua Creek * (CFS)	Discharge (CFS) ^	Below minimum flow !
6/15/2004	17090009	60	202.14	
7/2/2004	17090009	25	44.09	
7/16/2004	17090009	20	25.57	
8/16/2004	17090009	15	5.55	!
7/19/2006	17090009	20	17.10	
8/17/2006	17090009	15	5.62	!
6/22/2007	17090009	40	32.70	
7/23/2007	17090009	20	17.90	
8/30/2007	17090009	15	1.29	!
7/10/2008	17090009	25	1.79	!
7/10/2008	17090009	25	33.05	
8/4/2008	17090009	15	19.70	
9/12/2008	17090009	15	7.80	!
7/17/2009	17090009	20	8.41	!
8/14/2009	17090009	15	5.23	!
6/25/2010	17090009	40	123.40	
7/23/2010	17090009	20	25.40	
9/1/2010	17090009	15	10.00	!
7/29/2011	17090009	20	28.50	
8/19/2011	17090009	15	16.50	
7/11/2012	17090009	25	52.02	
7/27/2012	17090009	20	29.41	
9/4/2012	17090009	15	9.81	!
7/25/2013	17090009	20	15.02	
8/22/2013	17090009	15	5.40	!
6/23/2014	17090009	40	47.00	
7/18/2014	17090009	20	18.77	
8/5/2014	17090009	15	8.88	!
9/2/2014	17090009	15	9.20	!
	40-60	June	101	
	20-25	July	24	
	15	August	8	
	15	September	12	

\* in-stream requirements for supporting aquatic life, resident fish habitat and minimizing pollution

^ stream flow data - OWRD - miscellaneous measurements for instream water rights

Notes from stream flow with Marion County having oversight. USGS now has oversight

2004-08 measurement taken above gage near mouth of Pudding River, 2008-09 measurement taken at Nusom Road above gage

2010-11 measurement taken upstream from gage, 2012-14 measurements taken at Highway 214

Flow measurements taken from OWRD for 2004 through 2014 (Marion County had oversight of measurements)



**Silver Creek - Willamette Basin - Hydrologic Unit 17090009 - Water District 16**

Date Measure	Hydrologic Unit	Silver Creek * (CFS)	Discharge (CFS) ^	Below Minimum flow !
7/1/2004	17090009	50	58.91	
7/21/2004	17090009	23	5.8	!
8/23/2006	17090009	23	9.4	!
7/14/2006	17090009	23	9.9	!
7/20/2006	17090009	23	10.5	!
6/22/2007	17090009	23	51.4	
8/30/2007	17090009	35	8.14	!
7/27/2007	17090009	23	12.73	!
7/1/2008	17090009	23	43.05	
8/26/2008	17090009	23	22.28	!
8/12/2009	17090009	23	17.9	!
6/22/2009	17090009	23	35.8	
8/6/2010	17090009	23	17.4	!
8/5/2010	17090009	23	16.2	!
7/15/2011	17090009	23	33.7	
7/27/2012	17090009	35	24.15	
8/6/2012	17090009	23	17.32	!
9/14/2012	17090009	23	7.88	!
7/9/2013	17090009	23	32.5	
40-60	June	23		
20-25	July	27		
15	August	25		
15	September	23		

\* in stream requirements for support aquatic life, resident fish habitat and minimizing pollution

^ stream flow date - OWRD - miscellaneous measurements for instream water rights

Notes from stream flow with Marion County having oversight. USGS now has oversight

2004-2008 measurement taken above gage at mouth of Pudding River

2008-2009 measurement taken at Nusom Road above gage

2010-2011 measurement taken upstream from gage

2012-2014 measurement taken at Highway 214

Three scenarios could produce a long term water shortage:

- Complete source contamination
- Devastation of the water treatment plant or
- Elimination of the 2 million gallon reservoir.

During any time that the area is declared a severe drought by the Governor's office, the City of Silverton will implement those steps outlined in sub-section 3.3:

- Voluntary efforts in reduction of total consumption.
- Appropriate allocation of water, based on the amount of stored water available at the time of event.

The City of Silverton will associate the guidelines in the city's emergency response plan with the stages of alert defined in this water management and conservation plan.

**3.2 Stages of Alerts: 690-86-0160 (2)** A list of three or more stages of alert for potential shortage or water service difficulties. The stages shall range from a potential or mild alert, increasing through a serious situation to a critical emergency;

The City of Silverton will be adopting a five level approach for curtailment of water use, with the primary goal of maintaining sufficient supplies to meet essential uses such as drinking, cooking, sanitation and fire flow. A secondary goal is to maintain flow under normal conditions for consumers at all times. The five levels of alert will be designated as low, mild, moderate, serious, and critical/emergency. The triggers in Table 3-1 are based on all sources of water supply in order to give the City the greatest flexibility in dealing with a shortage.

Events causing this plan to be activated would include, but not limited to the following:

- Mechanical or electrical malfunctions of pumping capabilities or one of the booster stations.
- Interruption of the local power company supply.
- Abnormal weather conditions, determined by low rainfall reducing levels in either Abiqua or Silver Creeks.
- Declaration of a drought for their particular area by the Governor pursuant to Oregon Revised Statute 536.720.
- Natural disasters that damage critical infrastructure preventing the water system to operate under normal conditions.
- A deliberate act of contamination of water at various points in the water system.

**3.3 Alert Triggers: 690-86-0160** (3) A description of pre-determined levels of severity of shortage or water service difficulties that will trigger the curtailment actions under each stage of alert to provide the greatest assurance of maintaining potable supplies for human consumption; and

<b>Table 3-1: Five Levels of Alert Triggers (Based on all sources of water supply)</b>
<b>Low Alert Level</b>
◆ Water usage reaches 80% of capacity (water production) for three consecutive days
◆ Construction projects that impede full capacity flow of system for more than 5 days
◆ A complete shut down or any action that may reduce flow capacity below 80%
◆ A sudden drop in flows from Abiqua Creek <b>by 40%</b>
<b>Mild Alert Level</b>
◆ Usage reaches 85 percent of capacity
◆ Stream flows decrease <b>by 50%</b> on Abiqua Creek
<b>Moderate Alert Level</b>
◆ Water use reaches 90% of capacity (water production) for three consecutive days
◆ High level pumping capacity is reduce to 80% of normal finish water output
◆ Normal flow in water system is reduced to 80%
◆ Stream flows decrease <b>by 60%</b> on Abiqua Creek
<b>High Alert Level</b>
◆ Water use reaches 95% of capacity (water production) for three consecutive days
◆ High level pumping capacity is reduced to 70%
◆ Normal flow is reduced to 70%
◆ The area is declared in a severe drought per declaration by the Governor
◆ Stream flows decrease <b>by 70%</b> on Abiqua Creek
<b>Extreme Alert Level</b>
◆ High level pumping capacity is reduced to 50%
◆ Normal flow is reduced to 50% in water system, creek flows are limited
◆ A natural disaster that incapacitates the water system, or contaminates the water source
◆ Intentional act causing long term disabling of the water system or sustained deficit of water
◆ Stream flows decrease <b>by 80%</b> on Abiqua Creek
Note: Stream flows are measured by the Water Quality Supervisor at the Abiqua intake gauge. Percentages will be compared to sudden decrease in stream flows.

**3.4 Curtailment Actions: 690-86-0160 (4)** A list of specific standby water use curtailment actions for each stage of alert ranging from notice to the public of a potential alert, increasing through limiting nonessential water use, to rationing and/or loss of service at the critical alert stage.

Coordinated efforts to implement any curtailment or restrictions in water usage will be carried out by the Public Works Director. The Director will be responsible to share information with the Mayor, City Manager and City Council about any situation that might trigger such actions. Each step will be carried out according to city procedural protocol, using various methods of communications.

If curtailment triggers define when to impose restrictions, then the curtailment actions will establish the type of restriction to impose. There are no defined methods on the types of restrictions, yet curtailment actions will start with a “notice” to the public of the potential alert, limiting of non-essential uses of water and end with rationing (possibly from a single location) and/or loss of service at the most critical stage of alert.

If any of the curtailment triggers are met, all users will be notified in the following manners: Public announcements in the local newspaper, the local radio station, door to door, the City’s website and leaflets placed in conspicuous locations, (i.e. city hall, post office, and public locations)

Once steps are implemented, procedures following the coordinated efforts outlined in the emergency response plan provide the necessary coordinated actions, including contacts of both State and local county authorities. Specific actions may be applied to the entire water system or to those zones which are directly affected by the water shortage.

The Public Works Director, working with the Divisions Supervisors, will be responsible for executing the plan provisions once the level of emergency has been determined and declared. Working in conjunction with the Mayor, City Manager and City Council, the effectiveness of the established procedures will be evaluated to determine if any further actions need to be taken, maintained, or rescinded.

Plan provisions will remain in effect until the emergency is declared ended by the City Council or City Manager. These goals established by each level of curtailment action are based on the reduction of peak demand.

On the next page, the levels of action taken by the City of Silverton in response to either a temporary or long term event occurring are displayed in Table 3-2. Both general and specific steps are outlined based on the level of concern towards water conservation.

<b>Table 3-2: Curtailment Actions</b>
<b>Low Level Action (1)</b>
The Public Works Director, following the policies established in the city's ordinances, will issue a general request for a voluntary reduction in water use by all water users. The request will be made at a time when there is a strong indication that the city's water supply or production capabilities will be reduced below the capacity to provide adequate service to all water customers.
The request will include a summary of the current water situation, the reason for the requested reduction in use, and a warning that mandatory cutbacks will be required if the voluntary measures do not sufficiently reduce water usage. Also a time frame for the voluntary reduction will be established, indicating the date and time when the reduction will be concluded.
<b>Mild Level Action (2)</b>
A second step would be to implement mandatory reduction in water use by all consumers. This step will assure normal capacity flow during reduced production or delivery schedules and help eliminate peak demands that may create other concerns for the water system. This step is the next natural level of curtailment moving towards a moderate level of action.
<b>The goal of this step is to maintain 95% water production flow rates using a 10% reduction.</b>
<b>Moderate Level Action (3)</b>
City of Silverton will put into place the following:
◆ No flushing of system line unless essential.
◆ Implement schedules for irrigation of lawns and landscape.
◆ Commercial use to be reduced by 10% and residential use by 20%.
◆ Washing of vehicles will be prohibited.
<b>The goal is to maintain 85% water production flow rates using a 20% overall reduction in usage.</b>
<b>Critical Level Action (4)</b>
City of Silverton will put into place the following:
◆ Establish a "drought" rate surcharge.
◆ All outdoor use of water is prohibited.
◆ All customers will be set at a daily allotment in number of gallons per day.
◆ Water service will be disconnected if allotment if disregarded.
◆ Commercial users will be reduced to 70% of the previous year allotment.
◆ Bulk water sales/usage will be terminated until further notice
<b>The goal is to maintain a 75% water production flow rate assuming a 30% overall reduction in usage.</b>
<b>Emergency Level Action (5)</b>
It is not "if" an emergency is going to occur, but when an emergency situation will take place.

There are a number of circumstances that can result in an emergency response condition, all resulting in the water system being incapable of supplying water to the consumers. This step is launched to provide the minimum of 70 gallons per person per day. See City's Emergency Response Plan.

**Table 3-3: Action Levels of Curtailment:**

<b>Water Curtailment and Reduction Goals</b>			
Shortage Condition	Level	Reduction Usage Goal	Type of Rationing
5%	1	10%	Voluntary
5%	2	10%	Mandatory
15%	3	20%	Mandatory
25%	4	30%	Mandatory
Water System Failure	5	75 - 85%	Mandatory

## SECTION FOUR WATER SUPPLY ELEMENT

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**Municipal Water Supply Element 690-086-0170** the water supply element shall include at least the following:

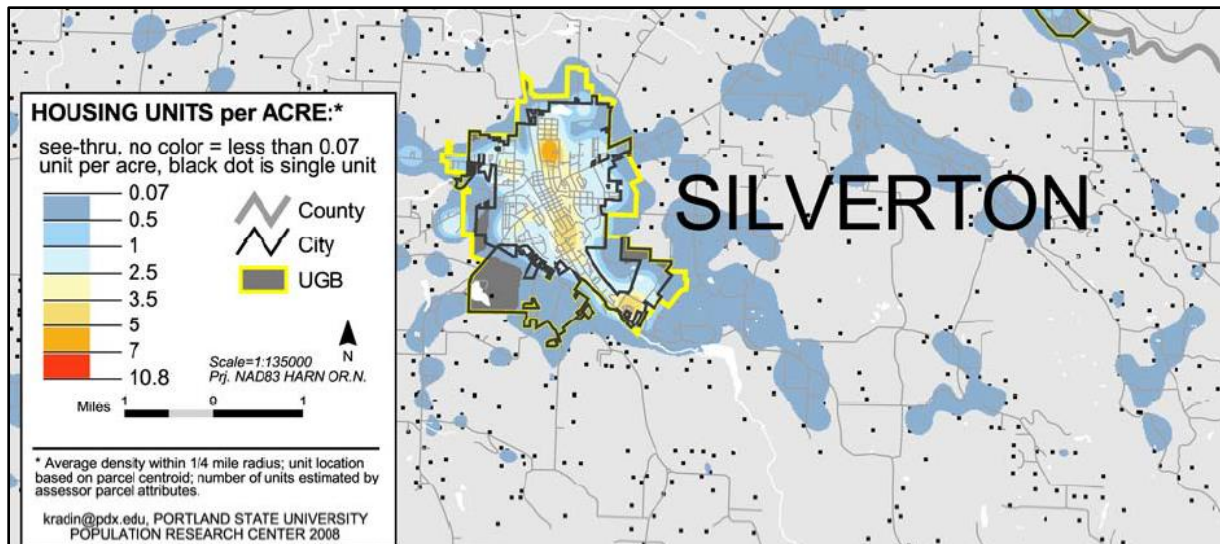
**4.1 Delineation of Current and Future service areas: OAR 690-086-0170 (1)** A delineation of the current and future service areas consistent with state land use law that includes available data on population projections and anticipated development consistent with relevant acknowledged comprehensive land use plans and urban service agreements or other relevant growth projections;

The current area of service for the City of Silverton's boundaries correspond with the Marion County's Comprehensive Land Use Plan. Land use designations are classified into various descriptions that would resemble typical rural community setting. [See Maps at the end of this section](#)

**4.2 Populations Projections: OAR 690-086-0170 (1)**

At the present time (2015), the City of Silverton is serving a population of 9,540 (3,000 connections) in an area approximately 3.5 square miles. Population estimates can be difficult to project since communities may experience both growth and decline. Three figures representing annual growth for the Silverton area are 1.3%, 1.5% and 1.92%, from the 2004 Water Management Conservation Plan, 2011 Water Master Plan (section 2.2) and Portland State University -Population Research Center, respectively. Using a median range, 1.57% annual growth rate was applied to the projected growth and potential completion of each water right, displayed in Table 1-7. These estimates use the U.S. Census Bureau average of 2.62 persons per connections. Total number of connections could reach 3,919 with a population estimate figured at 11,948 for the year 2035.

Source: [Portland State University Population Forecast for Marion County, 2008](#)



Source: Portland State University Population Forecast for Marion County, 2008 Map shows UGB in yellow and extensive growth possibilities to the south-west of the City of Silverton.

Water management and conservation planning will be based on a 20+ year term of identifying, sustaining, and improving the efficiency of supplying water.

Taken from the existing records of consumption and population served, an estimated usage of 123 gallons per capita/day was averaged based on historical figures. Applying the average to the potential 11,900 consumers in year 2035, water production demands will increase by 20% from 431.4 million gallons annually to 534.2 million gallons annually, which converts to an additional 0.47cfs.

**4.3 Schedule of Permit Usage: OAR 690-086-0170 (2)** An estimated schedule that identifies when the water supplier expects to fully exercise each of the water rights and water use permits currently held by the supplier;

Compiling data from Portland State University, Keller Associates, various state agencies and historical information, prediction for population estimates were factored to year 2035, based on annual growth of 1.57 percent annually. Carrying the estimates to year 2035, a total of 1.44 MGD can potentially become the average demand, using 123 gallons per day capita.

In preparing a schedule that proves to fully exercise each water right, the City of Silverton is obligated to determine usage by forecasting and justifying the need for additional water. Using the calculations provided by the water system from the data covering January 2010 through December 2014, water demand estimates are based on population forecasts and gallons per capita per day.



Historically, the average per day consumption has been approximately 1.1 MGD or 123 gallons per capita daily. Maximum day demand has reached 3.06 MGD . The anticipated population growth, factored at 5 year intervals, will be multiplied by the maximum day demand and applied to the appropriate water use permit.

The water supply source, under one permit and one certificate, currently allows for 15 cfs (12 with develop limitations) which are labeled “municipal” as beneficial use. Development limitations on permit S-3226 states 7.0 cfs until final order approving Water Management Conservation Plan. The City of Silverton has water rights that are greater than current usage.

Table 4-2 outlines both the current usage, based on actual pumping records and the anticipated schedule, based on maximum daily demand, as to when the City of Silverton will apply a percentage or expect to fully exercise each of its water certificates and permits.

**Table 4-2: Permit Usage Forecast** based on actual pumping records from January 2010 through December 2014

Permit Number	Certificate	Priority Date	Use	Allowable Rate	Pump Rate	Source	% of total allowed by permit
S – 3226 (Abiqua)	NA	03/16/1911	M	10.0 cfs <sup>A</sup> 6.46 mgd	3.55 cfs 2.3 MGD / 1,598 gpm	Abiqua Creek	32.66 %
S – 622 (Silver Crk)	2400 *	03/16/1911	M	5.0 cfs 3.23 mgd	0.31 cfs 0.2 MGD /138 gpm	Silver Creek	0.06 %
S – 36714 (Use of Stored H2O)	NA	03/20/1973	M	1.79 cfs 1.16 mgd	0.0 cfs 000 gpm	Silver Creek	0 %
R -5984 (Storage)	NA	03/20/1973	M	NA	0.0 cfs 000 gpm	Silver Creek	0 %
<b>Totals</b>				15.0 cfs 10.85 mgd	3.86 cfs 2.50 MGD / 1,736 gpm		23 %

Notes: M – municipal use, 1- Maximum water allowed by certificate / permit, 2 –Average gallons diverted from 2010 through 2014

Year	Population <sup>1</sup>	Daily Usage Total Gals <sup>2</sup>	Daily Usage cfs	Total % All Permits				
<i>Associated Permit</i>					S-3226	S-3226 (based on max day)	S-622	S-36714 <sup>3</sup>
2015	9,500	1.80 MGD	<b>2.77</b>	16.5 %	15.18 %	43%	1.32 %	0 %
2020	10,700	2.02 MGD	<b>3.12</b>	18.5 %	17.14 %	46%	1.36 %	
2025	11,200	2.11 MGD	<b>3.27</b>	19.5 %	17.77 %	47%	1.43 %	
2030	11,700	2.21 MGD	<b>3.42</b>	20.3 %	18.81 %	51%	1.49 %	
2035	11,900	2.25 MGD	<b>3.48</b>	20.7 %	19.18 %	55%	1.52 %	

Notes: 1 –based on 1.57% growth annually, 2- forecast usage based on maximum daily demand at 189 gallons per capita/day, actual historical usage is approximately 123 gallons per day capita. 3 – 1,300 acre/feet per year at a rate up to 14 cfs. \* - water right is certified. A - Development Limitation set at 7.0 cfs

**4.4 Demand Forecast: OAR 690-086-0170 (3)** Based on the information provided in section (1) of this rule, an estimate of the water supplier's water demand projections for 10 and 20 years, and at the option of the municipal water supplier, longer periods;

The rate at which the City of Silverton will grow is founded on how the various classifications of users expand. In sub-section 4-2, it was estimated the service area could eventually serve a population of 11,900 by the year 2035. Based on a population of 11,900 multiplied by a maximum daily consumption of 189 gallons per capita/day, generates 2.25 MGD or 67.5 million gallons per month.

Current raw water intakes have a combined total limited flow of 6.5 MGD equaling 4,513 GPM. Adjustment of the flow rate based on seasonal demands varies from 423 gallons per minute during winter to 1,828 gallons per minute during summer.

The figures are based on the low and high months of pumping data from 2010 through 2014, Table 1-3

<b>Table 4-3: Water Projection Demand</b>					
City of Silverton	Projected Year				
	2015	2020	2025	2030	2035
Million Gallons per Month					
Ave. Month Demand <sup>1</sup>	53.8 (2.77 cfs)	60.6 (3.12 cfs)	63.5 (3.27cfs)	66.3 (3.41cfs)	67.4 (3.48cfs)
Peak Day Demand	2.8 (4.3 cfs)	3.0 (4.6 cfs)	3.03 (4.7 cfs)	3.3 (5.1 cfs)	3.6 (5.5 cfs)

Note: 1-Based on maximum day demand at 189 gallons per day per capita

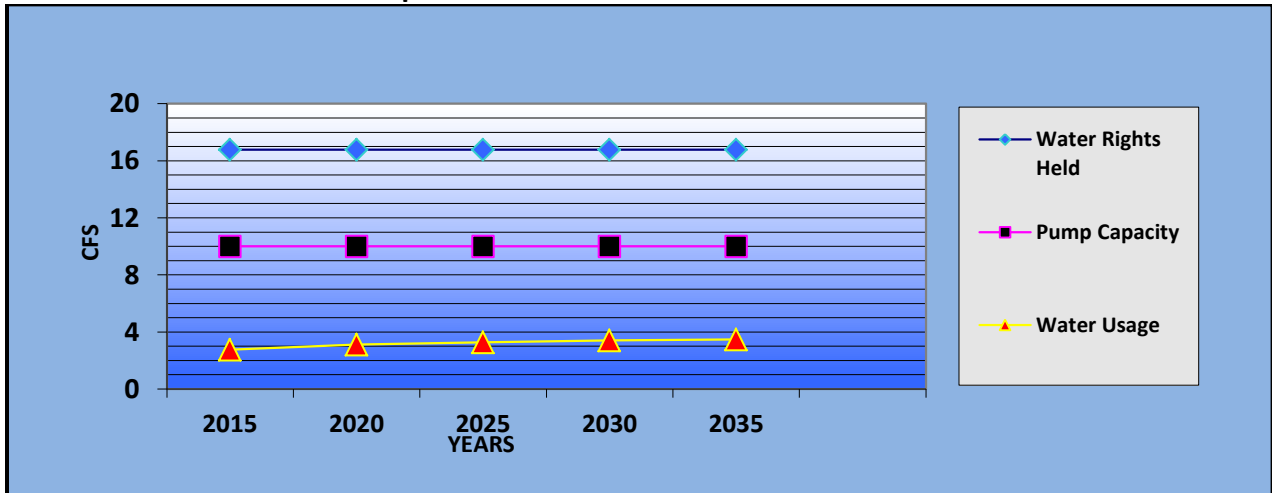
Table 4-3 figures are estimates from Table 1-3, which are the comparison figures taken from the data collected from 2010 through 2014. Since these figures are taken from historical data, the estimates could be considered higher than current peak demand due to improved management of the water system through data controls, system replacement and procedural changes.

**4.5 Comparison of Future Needs / Sources: OAR 690-086-0170 (4)** A comparison of the projected water needs and the sources of water currently available to the municipal water supplier and to any other suppliers to be served considering the reliability of existing sources;

Chart 4-1 provides the comparison of the projected water required consumption for the City of Silverton, which is 2.25 million gallons per day, (3.48 cfs; 1,562 GPM) based on maximum daily demand for the year 2035. Historically, (2004-2014) Abiqua Creek has an estimated average flow in June of 101 cfs, while August is 8 cfs. Silver Creek maintains an estimated average flow of 24 cfs during the same period. Periods outside of the summer months, reveals no concerns of limited available water or minimum stream flows. The tables on pages 30-31 indicate stream flow measurements for the period in time from 2004 through 2014.

With City of Silverton’s projected use at 3.48 cfs (5.5 cfs peak day), and the available two sources of water, and with 1,300 acre feet in storage on Silver Creek, the existing sources will be reliable. No other municipal suppliers are permitted to divert water within the city’s point of use or point of diversion areas. (Research data taken from Oregon’s Water Resource Department, Point of Diversion Summary Report.)

**Chart 4-1: Future Water Requirements:**



**4.6 Expansion / Initial Diversions: OAR 690-086-0170 (5)(a)** If any expansion or initial diversion of water allocated under existing permits is necessary to meet the need shown in section (3) of this rule, an analysis of alternative sources of water that considers availability, reliability, feasibility and likely environmental impacts. The analysis shall consider the extent to which the projected water needs can be satisfied through: (a) Implementation of conservation measures identified under OAR 690-086-0150;

1. Through implementation of conservation steps, (i.e. review of consumption cycles, rate settings, consumer informational packets, and meter calibration,) the City of Silverton has identified conservation measures that are both practical and feasible at this time. It is the goal of the City to lower the per capital consumption of water through conservation methods, prior to applying for additional water rights. Given the total amount of water rights, including the ability to exercise the use of water under permit S – 36714 (associated with the reservoir on Silver Creek), the City of Silverton at this time is not seeking to add additional water rights. The City’s plan for their water rights include: Permit R-5948 (storage of 1,300 acre-feet of water in Silverton Reservoir). The City plans to file a Claim of Beneficial Use (COBU) because this reservoir was built and filled to capacity in 1974.
2. Permit S-3226 (surface water right on Abiqua Creek). The City plans to file a “partial perfection Claim of Beneficial Use for the capacity of the source water transmission line from the intake to the water treatment plant (4.8 mgd = 7.4 cfs).

**4.7 Interconnections: OAR 690-086-0170 (5) (b)** Interconnection with other municipal supply systems and cooperative regional water management; and

Presently, the City of Silverton does not have an inter-tie with any other public or private entities within the area due to the vicinity of neighboring water systems. In subsection 3.5 of Keller Associates Water Master Plan 2011 for the City of Silverton, there is mention of possible future water service to the City of Mt. Angel. No formal discussions have taken place as of the writing of this management and conservation plan. The City of Mt. Angel is approximately 3 miles to the north of the City of Silverton. The City of Silverton is a partner of the Pudding River Watershed Place-based Planning Group, which submitted a grant application to the Oregon Water Resources Department for funding under SB 266.

**4.8 Cost Saving Measures: OAR 690-086-0170 (5) (c)** Any other conservation measures that would provide water at a cost that is equal to or lower than the cost of other identified sources.

At this time, the City of Silverton has not developed any other conservation measures that will affect the cost of supplying water. The primary focus in conservation efforts is to reduce the demand (see Table 2-2) on their existing supplies in order to maintain current sources.

**4.9 Permit Diversions: OAR 690-086-0170 (6)** If any expansion or initial diversion of water allocated under existing permits is necessary to meet the needs shown in section (3) of this rule, a quantification of the maximum rate and monthly volume of water to be diverted under each of the permits;

No expansion of water allocated under existing permits is necessary for existing or future needs. Table 4-3 below shows usage rates as they relate to the permit or certificate. Also included are the single monthly maximum water diverted to date.

<b>Table 4-4: Permit Usage Rates</b>				
<b>Permit #</b>	<b>Instantaneous Maximum Rate Allowed</b>	<b>Daily Maximum Rate Allowed</b>	<b>Monthly Maximum Quantity Allowed</b>	<b>Monthly Maximum Diverted to Date <sup>1</sup></b>
S – 3226	10.00 cfs <sup>A</sup>	6.46 mgd	193.9 MG	74.29 MG
S – 622 *	5.00 cfs	3.23 mgd	96.9 MG	20.98 MG
S – 36714 R-50184	1.79 cfs (N/A)	1.16 mgd (N/A)	34.7 MG	NA
<b>Total</b>	<b>15.00 cfs</b>	<b>9.6 mgd</b>	<b>325.52 MG</b>	<b>74.29 MG</b>

\* - certified water right, 1 – based on historical records 2010-2014, highest single month NA – not applicable, A – water right has “development limitation at 7.0 cfs

**4.10 Mitigation Actions: OAR 690-086-0170 (7)** For any expansion or initial diversion of water under existing permits, a description of mitigation actions the water supplier is taking to comply with legal requirements including but not limited to the Endangered Species Act, Clean Water Act, Safe Drinking Water Act; and

The City of Silverton has placed additional emphasis towards mitigating actions, such as system enhancements, (i.e. intake screen with backflow capabilities), study and review of water shed characteristics, and SCADA telemetry. These actions are considered in an effort to better understand the management of the resource.

The City's goal is to maintain the high quality of water in both Abiqua and Silver Creeks. The city will certainly consider the idea of participating in regional water supply planning activities.

**4.11 New Water Rights: OAR 690-086-0170 (8)** *If acquisition of new water rights will be necessary within the next 20 years to meet the needs shown in section (3) of this rule, based on the information provided in section (1) of this rule, (1) A delineation of the current and future service areas consistent with state land use law that includes available data on population projections and anticipated development consistent with relevant acknowledged comprehensive land use plans and urban service agreements or other relevant growth projections; an estimate of the water supplier's water demand projections for 10 and 20 years, and at the option of the municipal water supplier, longer periods an analysis of alternative sources of the additional water that considers availability, reliability, feasibility and likely environmental impacts and a schedule for development of the new sources of water. The analysis shall consider the extent to which the need for new water rights can be eliminated through:*

Under Marion County's Land Use Comprehensive Plan, the zoning classifications established the water service area for the City of Silverton. Data from the various entities, (i.e. Portland State University) indicated future annual averaged growth rate at 1.57% through 2035 or a total approximate population of 11,900 for the year 2035.

Evidence (flow data) of the current source proves adequate supply for probable future requirements in terms of quantity. There has been no investigation of alternative sources for additional water by the City. The City of Silverton, through discussions with current management personnel, is ever mindful of the reliability, adequacy, and impact water has to sustain a community, both locally and regionally.

Data compiled in this plan indicates that there will be no need to acquire new water rights in the future. Access to an additional 3.0 cfs of "Greenlight" water under permit S-3226 on Abiqua Creek for future demands will be made when the City's demand for more water becomes apparent.

**4.12 Greenlight Water Request: OAR 690-086-0130(7):** *if during the next 20 years a water supplier will need to divert water under an extended permit at a maximum rate of diversion that is greater than the maximum rate of diversion authorized under a final order approving the permit extension of time or a previous WMCP, the water supplier must document that the WMCP includes: a schedule for implementation of lower cost conservation measures; [except in those circumstances described in OAR 690-086-0130(7)(a)];*

For existing extended water use permits that are conditioned with Development Limitations, a WMCP provides the basis and justification for OWRD to approve a request for Greenlight Water. OWRD's criteria for approving Greenlight Water requests, the City of Silverton, based on the assumption of predicted growth, the need to divert water under the extended permit at the maximum rate will be slightly greater than the rate authorized (7.0 cfs) (additional 3.0 cfs as "Greenlight Water") under the final order approving this water management conservation plan. See table 4-3 "Water Projection Demand" for total quantities predicted.

The City of Silverton understands the "Development Limitation" established by the Final Order Extension for current use under Permit S-3226 to be capped at no more than 7.0 cfs. The City of Silverton also understands that diversion of water beyond 7.0 cfs shall only be authorized upon issuance of a final order approving this water management and conservation plan. Regarding the development limitation on permit # S-36714 (Silverton Reservoir) at 200 acre feet, according to the "Conditions" listed on said permit: Diversion of stored water from Silver Creek Reservoir (constructed under Permit #R5948) beyond 200.0 AF under Permit #S-36714 shall only be authorized upon issuance of a final order approving a Water Management and Conservation Plan under OAR Chapter 690, Division 86. The City believes additional water beyond the 200.0 AF is available, and will be used for emergency shortage needs. The City of Silverton will correspond with Oregon Water Resources to announce any changes or requests pertaining to diversion of water if necessary. It will be at the time of either evolving into the need for more water (proven with data) or the completion of a future WMCP, that the City of Silverton will request access to "greenlight" water.

**4.12.1 OAR 690-086-0130(7)(a):** justification that the selected source is the most feasible and appropriate supply alternative; and whether the supplier is complying with mitigation requirements to address development of permits with identified environmental resource issues under OAR 690-086-0140(5)(i), if any.

The City of Silverton and its current source is the most feasible and appropriate supply and has not considered an alternative supply source. The City of Silverton is complying with all mitigation actions under state or federal law in relation to development of its permits for which environmental resource issues are identified under OAR 690-086-1450(5)(i).

**4.12.2 OAR 690-086-0130(7)(b):** Increased use from the source is the most feasible and appropriate water supply alternative available to the supplier.

The City of Silverton due to its proximity to the limited ground water area, (declining wells) both the Abiqua, Silver Creeks and Silverton Reservoir are the most appropriate supply, and the City is not currently looking for an alternative to their current supply.

**4.12.3 OAR 690-086-0130(7)(c):** If mitigation is legally required to address limitations or restrictions on the development of permits for which resource issues are identified under OAR 690-086-0140(5)(i), the plan contains documentation that the supplier is complying with the

mitigation requirements. The Department may consult with federal and state agencies in making this determination.

Resource issues identified with the sources include the presence of sensitive, threatened and endangered, listed stream flow dependent species, as outlined in Table 1-8 Endangered Species. Research on both Abiqua and Silver Creeks indicate no minimum instream flows for protection of fish habitat, maintain the persistence of listed fish species and/or water withdrawal restrictions. Due to the low summer flows for Abiqua Creek, one discussion proposed for future decision making is an enhanced review of stream flows, and rotating the divergence of water between the sources of Abiqua and Silver Creeks. Currently approximately 92 percent of diverted water for the City of Silverton is from Abiqua Creek. The rotation of sources is primarily based on the sufficiency of water flow (less decline) in Silver Creek in comparison to Abiqua Creek. The City of Silverton is complying with all mitigation requirements and this water management and conservation plan documents such requirements.

**4.13 Identified Conservation Methods: OAR 690-086-0170 (8) (a) Implementation of conservation measures identified under OAR 690-086-0150;**

At present, the City of Silverton will sustain their efforts towards implementing conservation practices through the following steps a) consumer awareness, b) water system operations, c) education information, and d) possible replacement of existing inefficient water using fixtures with low flow devices.

**4.14 Regional Management: OAR 690-086-0170 (8) (b) Interconnection with other municipal supply systems and cooperative regional water management; and**

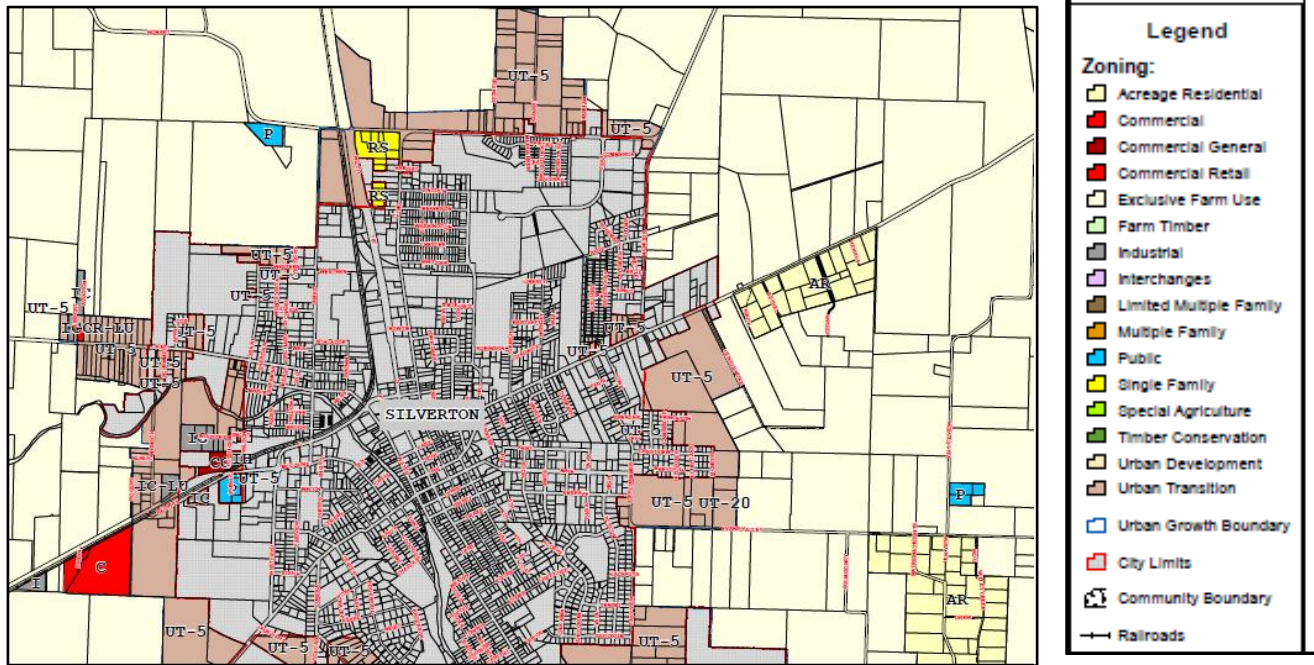
At this time the City of Silverton is and will continue to be a proponent in regional water management. One goal of regional management is fostering good relationships with the communities within the watershed and exchanging ideas to sustain the resources currently available.

Discussions with utilities in the watershed are beneficial and educational and the City welcomes the opportunity. One recommendation is developing annual meetings with other water systems within the immediate area for general discussions inviting local area experts to update enhanced (scientific) understanding of the present and future sustainability of the regional resources. These steps should yield valuable information to assist in better management practices of resources resulting in maintaining available waters, reliability, and environmental impacts. The City of Silverton is a partner of the Pudding River Watershed Place-based Planning Group, which submitted a grant application to the Oregon Water Resources Department for funding under SB 266.

**4.15 Cost Appropriations: OAR 690-086-0170 (8) (c) Any other conservation measures that would provide water at a cost that is equal to or lower than the cost of other identified sources.**

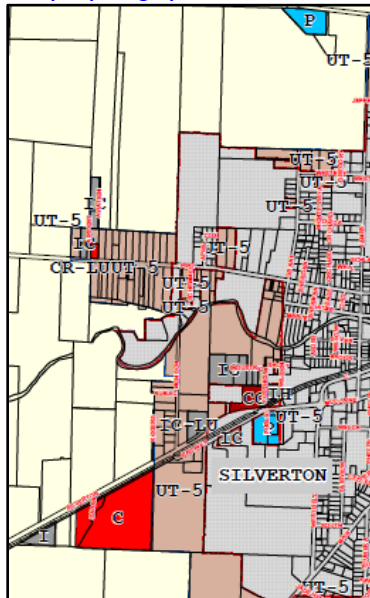


Currently and future speculations, the City of Silverton, with their available water rights at 15 cubic feet per second (see Table 1-2, on page 5) will not require the acquisition of additional d water rights. The City of Silverton will focus on maintaining existing water sources through continued efforts from a managerial practice. Long term benefits of these endeavors will keep the City from having to look at additional sources and will be substantially less expensive than developing new sources.

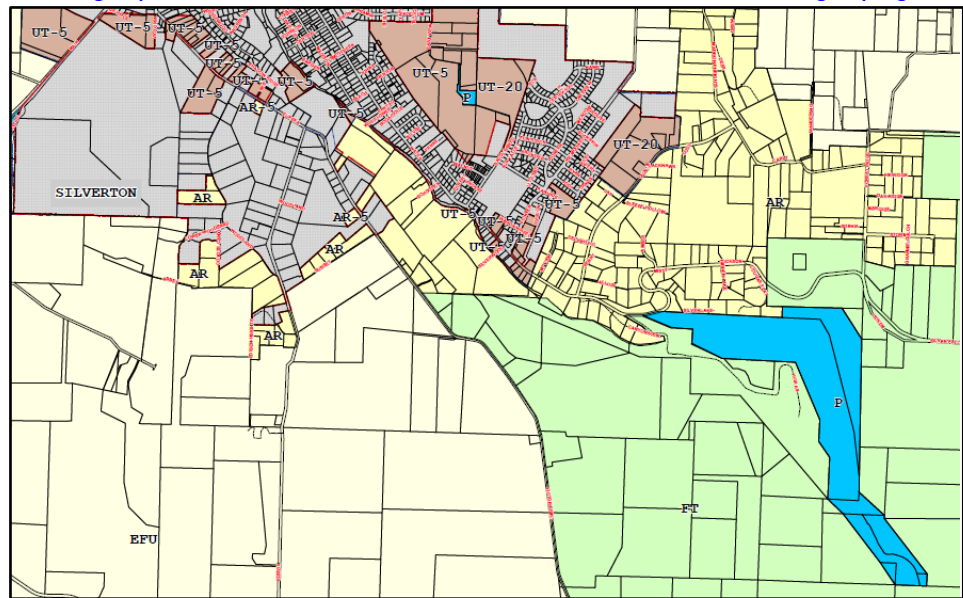


A map depicting a portion of Marion County Rural Zoning Map Section 24

Rural Zoning Map Legend



Marion County Rural Zoning Section 25



Map showing a portion of Section 34. Maps provided by Marion County Rural Zoning Map Index.

The maps above show the related areas of land use zoning for the City of Silverton in conjunction with the Marion County Rural Zoning Maps. Only the portion relevant to the City of Silverton is shown from Sections 24, 25, and 34.



## SECTION FIVE OTHER ITEMS

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**5.1 Affected Local Governments: 690-086-0125 (5)** A list of the affected local governments to whom the draft plan was made available pursuant to OAR 690-086-0120 (6) and a copy of any comments on the plan provided by the local governments;

The City of Silverton provided a copy of this water management and conservation plan to Marion County (Planning Department)

**5.2 Updated Plan Submittal: 690-086-0125 (6)** A proposed date for submittal of an updated plan within no more than 10 years based on the proposed schedule for implementation of conservation measures, any relevant schedules for other community planning activities, and the rate of growth or other changes expected by the water supplier; or an explanation of why submittal of an updated plan is unnecessary and should not be required by the Department; and

Following regulations OAR 690-086-0125 (6) City of Silverton is proposing to submit an updated conservation plan within ten years of the final order approving this plan. The City understands as changes occur with system improvements or pumping capacity. This will necessitate a review every five years by the Public Works Director and staff.

Conservation and water use practices are constantly evolving. Table 2.1 will be reviewed annually by assigned administrative staff, enabling the City to determine progress of the management conservation plan.

All efforts towards management and conservation will be noted and retained for the progress report which will be submitted every five years by City of Silverton. The next progress report will be due by the January of 2021.

**5.3 Additional Time: 690-086-0125 (7)** If the municipal water supplier is requesting additional time to implement metering as required under OAR 690-086-0150 (4)(b) or a benchmark established in a previously approved plan, documentation showing additional time is necessary to avoid unreasonable and excessive costs.

The City of Silverton is a fully metered water system and will not need additional time to implement metering as required by OAR 690-086-150 (4)(b).

Appendices:

## Watershed Characteristics

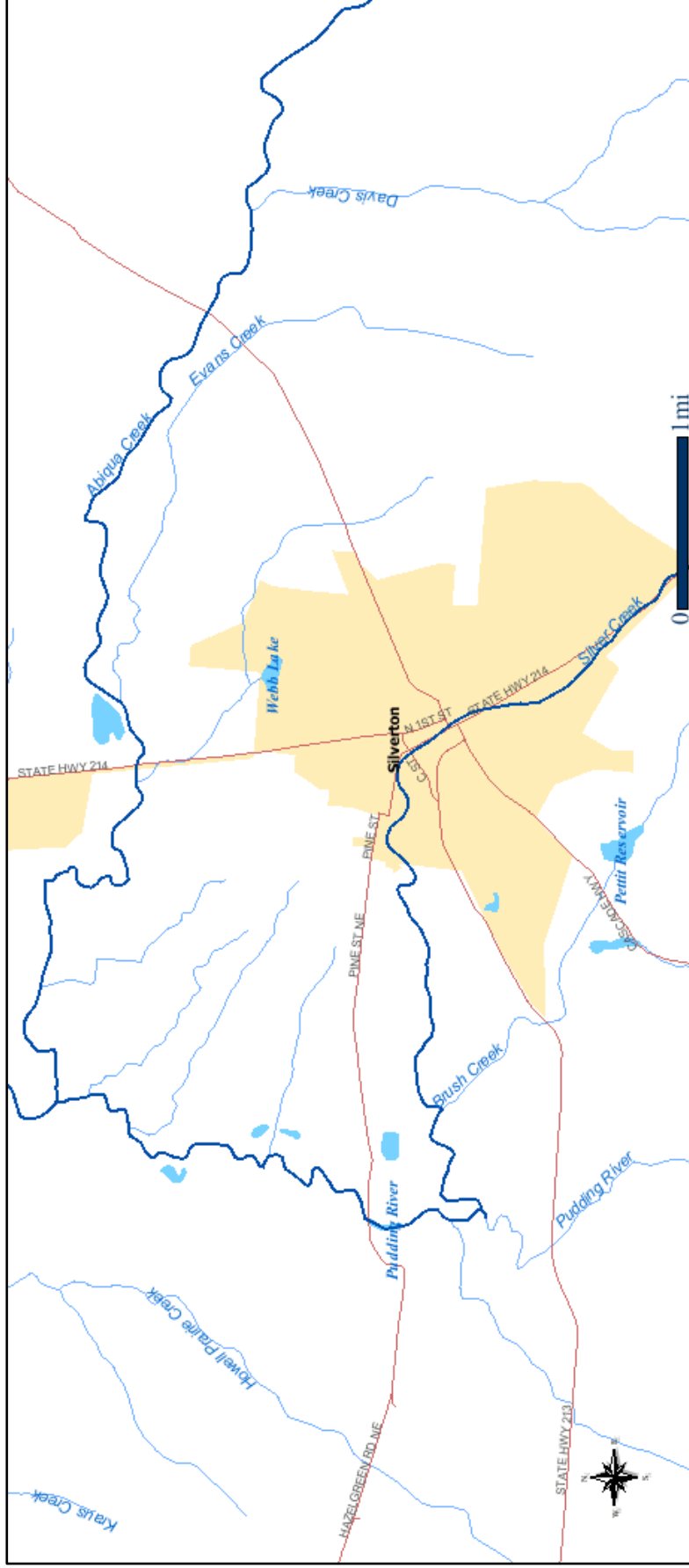
### Abiqua Creek > Pudding River at Mouth

<i>Latitude of Outlet</i>	45.036300	degrees
<i>Longitude of Outlet</i>	-122.832200	degrees
<i>Latitude of Centroid</i>	44.947000	degrees
<i>Longitude of Centroid</i>	-122.614000	degrees
<i>Drainage Area</i>	78.09	square miles
<i>Stream Length</i>	86.32	miles
<i>Perimeter</i>	61.16	miles
<i>Lakes and Ponds</i>	0.0830	percent
<i>Area/Perimeter</i>	1.277	unitless
<i>Maximum Relief</i>	3999	feet
<i>Mean Slope</i>	3.590	degrees
<i>Average Aspect</i>	199.7	degrees
<i>Mean Elevation</i>	1604	feet
<i>Area above 3000 ft</i>	9.601	percent
<i>Area above 4000 ft</i>	0.1340	percent
<i>Area above 5000 ft</i>	0.0	percent
<i>Area above 6000 ft</i>	0.0	percent
<i>Mean Annual Precip</i>	69.64	inches
<i>Mean Annual Min Temp</i>	37.27	inches
<i>Mean January Min Temp</i>	26.90	degrees Fahrenheit
<i>Mean February Min Temp</i>	29.82	degrees Fahrenheit
<i>Mean March Min Temp</i>	31.83	degrees Fahrenheit
<i>Mean April Min Temp</i>	34.63	degrees Fahrenheit
<i>Mean May Min Temp</i>	39.81	degrees Fahrenheit
<i>Mean June Min Temp</i>	45.87	degrees Fahrenheit
<i>Mean July Min Temp</i>	48.91	degrees Fahrenheit
<i>Mean August Min Temp</i>	48.65	degrees Fahrenheit
<i>Mean September Min Temp</i>	43.31	degrees Fahrenheit
<i>Mean October Min Temp</i>	37.20	degrees Fahrenheit
<i>Mean November Min Temp</i>	32.51	degrees Fahrenheit
<i>Mean December Min Temp</i>	27.79	degrees Fahrenheit

# Watershed Characteristics

Silver Creek > Pudding River at Mouth

Latitude of Outlet	45.000200	degrees
Longitude of Outlet	-122.840900	degrees
Latitude of Centroid	44.904000	degrees
Longitude of Centroid	-122.652000	degrees
Drainage Area	53.17	square miles
Stream Length	66.78	miles
Perimeter	52.54	miles
Lakes and Ponds	0.0100	percent
Area/Perimeter	1.012	unitless
Maximum Relief	3468	feet
Mean Slope	3.073	degrees
Average Aspect	215.2	degrees
Mean Elevation	1558	feet
Area above 3000 ft	3.536	percent
Area above 4000 ft	0.0	percent
Area above 5000 ft	0.0	percent
Area above 6000 ft	0.0	percent
Mean Annual Precip	68.51	inches
Mean Annual Min Temp	37.43	inches
Mean January Min Temp	27.07	degrees Fahrenheit
Mean February Min Temp	29.98	degrees Fahrenheit
Mean March Min Temp	31.98	degrees Fahrenheit
Mean April Min Temp	34.76	degrees Fahrenheit
Mean May Min Temp	39.94	degrees Fahrenheit
Mean June Min Temp	46.03	degrees Fahrenheit
Mean July Min Temp	49.09	degrees Fahrenheit
Mean August Min Temp	48.83	degrees Fahrenheit
Mean September Min Temp	43.49	degrees Fahrenheit
Mean October Min Temp	37.36	degrees Fahrenheit
Mean November Min Temp	32.67	degrees Fahrenheit
Mean December Min Temp	27.96	degrees Fahrenheit



**LEGEND**

- All Critical Habitat 2005 (excludes Oregon Coast Coho)
- Chinook: Upper Willamette
- Roads
- Interstate Highways
- Highways
- Major Roads
- Lakes (1:100k)
- Streams (1:100k)
- Urban Areas

**CHINOOK / STEELHEAD CRITICAL HABITAT TRIBUTARIES**

Federal Register Vol. 70, page 52630, September 2, 2005 for 12 evolutionarily significant units (ESU) or distinct population segments (DPS) of Pacific salmon (Chinook, chum, and sockeye) and steelhead in Oregon

[HTTP://WWW.NMFS.NOAA.GOV/GIS/DATA/CRITICAL.HTM#WEST](http://www.nmfs.noaa.gov/gis/data/critical.htm#west)  
[HTTP://MAP.STREAMNET.ORG/WEBSITE/CRITICALHABITAT/VIEWER.HTM](http://map.streamnet.org/website/criticalhabitat/viewer.htm)

Doug Parrow

Oregon Water Resources Department  
Water Rights Division

Water Rights Application  
Number S-4924

**Final Order<sup>1</sup>**  
**Extension of Time for Permit Number S-3226**

***Application History***

On FEBRUARY 20, 2003, the CITY OF SILVERTON submitted an application to the Department for an extension of time for permit number S-3226. The Department issued permit number S-3226 on JANUARY 25, 1917. The permit called for completion of construction of the water development project by JUNE 1, 1919, and complete application of water to the full beneficial use by OCTOBER 1, 1930. In accordance with OAR 690-315-0050(2), on JULY 1, 2003, the Department issued a Proposed Final Order proposing to extend the time to complete construction of the water development project and the time to fully apply water to beneficial use to OCTOBER 1, 2038. The protest period closed AUGUST 15, 2003, in accordance with OAR 690-315-0060(1). No protest was filed.

The applicant has demonstrated good cause for the permit extension pursuant to ORS 537.230, 537.248, 537.630, 539.010(5) and/or OAR 690-315-0040(2).

At time of issuance of the Proposed Final Order the Department concluded that, based on the factors demonstrated by the applicant, the permit may be extended subject to the following conditions:

**Conditions**

**Development Limitations**

Diversion of water beyond 7.0 cfs under Permit #S-3226 shall only be authorized upon issuance of a final order approving a Water Management and Conservation Plan under OAR Chapter 690, Division 86. The required Water Management and Conservation Plan shall be submitted to the Department within 3 years from the date this extension is final.

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<sup>1</sup> **Appeal Rights**

*Under the provisions of ORS 536.075, the applicant may appeal this order by filing a petition for review in the Circuit Court for Marion County or the circuit court for the county in which the applicant resides or has a principal business office. The petition for review must be filed within 60 days after the date this order is served. ORS 183.484.*

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**Order**

The extension of time for Application Number S-4924, Permit Number S-3226, therefore, is approved. The deadline for completing construction is extended to OCTOBER 1, 2038. The deadline for applying water to full beneficial use is extended to OCTOBER 1, 2038.

**DATED: September 4, 2003**

  
Paul R. Cleary, Director



\* Permit No. 3226

APPLICATION FOR A PERMIT

To appropriate the Public Waters of the State of Oregon

I, City of Silverton (Name of Applicant)
of Silverton (Postoffice), County of Marion Oregon State of Oregon, do hereby make application for a permit to appropriate the following described public waters of the State of Oregon, subject to existing rights:

If the applicant is a corporation, give date and place of incorporation

1. The source of the proposed appropriation is Abiqua Creek, tributary of Pudding River (Name of stream)

2. The amount of water which the applicant intends to apply to beneficial use is 10 cubic feet per second.

3. The use to which the water is to be applied is Municipal Supply (Irrigation, power, mining, manufacturing, domestic supplies, etc.)

4. The point of diversion is located near the center of Sec. 24 (Give distance and bearing to section corner)

being within the NW of NW 1/4 of Sec. 34, Tp. 6 S (Give smallest legal subdivision) (No. N. or S.)

R. 1 East W. M., in the county of Marion (No. E. or W.)

5. The pipe line Main ditch, canal or pipe line to be 6 1/2 (33,561 feet) miles in length, terminating in the NW 1/4 of NW 1/4 of Sec. 35, Tp. 6, R. 1 W (Smallest legal subdivision) (No. N. or S.) (No. E. or W.)

W. M., the proposed location being shown throughout on the accompanying map.

6. The name of the ditch, canal or other works is Abiqua Pipe Line

DESCRIPTION OF WORKS

DIVERSION WORKS—

7. (a) Height of dam 16 1/2 feet, length on top 70 feet, length at bottom 37 feet; material to be used and character of construction Material is wood (Loose rock, concrete, masonry, rock and brush, timber crib, etc., wasteway over or around dam)

(b) Description of headgate Timber, wood, 18 inch pipe (Timber, concrete, etc., number and size of openings)

\* A different form of application is provided where storage works are contemplated. These forms can be secured, without charge, together with instructions, by addressing the State Engineer, Salem, Oregon.

\* Permit No. 3226

APPLICATION FOR A PERMIT

To appropriate the Public Waters of the State of Oregon

I, City of Silverton, of Silverton, Oregon, do hereby make application for a permit to appropriate the following described public waters of the State of Oregon, subject to existing rights:

If the applicant is a corporation, give date and place of incorporation

1. The source of the proposed appropriation is Abiqua Creek, tributary of Pudding River

2. The amount of water which the applicant intends to apply to beneficial use is 10 cubic feet per second.

3. The use to which the water is to be applied is Municipal Supply

4. The point of diversion is located near the center of Sec. 34

being within the NW of NW 1/4 of Sec. 34, Tp. 6 S, R. 1 East, W. M., in the county of Marion

5. The pipe line to be 6 1/2 (33,561 feet) miles in length, terminating in the NW 1/4 of NW 1/4 of Sec. 35, Tp. 6, R. 1 W.

W. M., the proposed location being shown throughout on the accompanying map.

6. The name of the ditch, canal or other works is Abiqua Pipe Line

DESCRIPTION OF WORKS

DIVERSION WORKS—

7. (a) Height of dam 16 1/2 feet, length on top 70 feet, length at bottom 37 feet; material to be used and character of construction Material is wood

(b) Description of headgate Timber, wood, 18 inch pipe

\* A different form of application is provided where storage works are contemplated. These forms can be secured, without charge, together with instructions, by addressing the State Engineer, Salem, Oregon.



MUNICIPAL SUPPLY—

Silverton

11. To supply the city of Marion County, having a present population of 2500, and an estimated population of 5000 in 1920

(Answer questions 12, 13, 14, and 15 in all cases)

- 12. Estimated cost of proposed works, \$ 35,000.00
13. Construction work will begin on or before One year
14. Construction work will be completed on or before Two years
15. The water will be completely applied to the proposed use on or before Five years

Duplicate maps of the proposed ditch or other works, prepared in accordance with the rules of the State Water Board, accompany this application.

City of Silverton

(Name of applicant)

P W Potter,

Mark Paulson

Signed in the presence of us as witnesses:

- (1) G H Rydell (Name) (Address of witness)
(2) L F Evenson (Name) (Address of witness)

Remarks: [Blank lines for handwritten notes]

STATE OF OREGON, County of Marion } ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for correction or completion, as follows:

- For completion, fees & map
For correction Question #4, & maps

In order to retain its priority, this application must be returned to the State Engineer, with corrections, on or before Jan 13 1917

WITNESS my hand this 14th day of Dec. 1916

John H Lewis

RJS

State Engineer.

Application No. 4924  
Permit No. 3226

**PERMIT**  
TO APPROPRIATE  
THE PUBLIC WATERS OF  
THE STATE OF OREGON

Division No. 1 District No.

This instrument was first received  
in the office of the State Engineer at  
Salem, Oregon, on the 24  
day of May, 1916,  
at 8:30 o'clock a. m.

Returned to applicant for correction  
Dec. 14, 1916 Jan. 7, 1917

Corrected application received  
January 3, 1917; Jan. 16, '17

Approved:  
Jan 25 1917

Recorded in Book No. 12 of  
Permits, on Page 3226

John H Lewis

1 map State Engineer.  
RS \$8.00

STATE OF OREGON,

County of Marion } ss.

This is to certify that I have examined the foregoing application and do hereby grant the same, subject to the following limitations and conditions: If for irrigation, this appropriation shall be limited to one-eightieth of one cubic foot per second, or its equivalent, for each acre irrigated, and shall be subject to such reasonable rotation system as may be ordered by the proper State officer.

The use of the water under this permit shall be limited to water for a municipal supply

The amount of water appropriated shall be limited to the amount which can be applied to beneficial use and not to exceed 10.0 cubic feet per second, or its equivalent in case of rotation. The priority date of this permit is May 24, 1916

Actual construction work shall begin on or before January 25, 1918

and shall thereafter be prosecuted with reasonable diligence and be completed on or before

Extended to Oct. 1, 1925

Extended to Oct. 1, 1925

Extended to October 1, 1930

June 1, 1919

10-1-35

Extended to Oct. 1, 1931

Complete application of the water to the proposed use shall be made on or before

Extended to Oct. 1, 1950

Extended to Oct. 1, 1955

Extended to Oct. 1, 1960

Extended to Oct. 1, 1965

Extended to Oct. 1, 1970

Extended to Oct. 1, 1975

Extended to Oct. 1, 1980

Extended to Oct. 1, 1985

Extended to Oct. 1, 1990

Extended to Oct. 1, 1995

Extended to Oct. 1, 2000

Extended to Oct. 1, 2005

Extended to Oct. 1, 2010

Extended to Oct. 1, 2015

Extended to Oct. 1, 2020

Extended to Oct. 1, 2025

Extended to Oct. 1, 2030

Extended to Oct. 1, 2040

Extended to Oct. 1, 2050

Extended to Oct. 1, 2060

Extended to Oct. 1, 2070

Extended to Oct. 1, 2080

WITNESS my hand this 25th day of

John H Lewis

10-1-35  
State Engineer.

Permits for power development are subject to the limitation of franchise as provided in Sec. 6633, Lord's Oregon Laws, and the payment of annual fees as provided in Chapter 213, Laws of 1915.



STATE OF OREGON

WATER DIVISION NO. 1 COUNTY OF MARION

CERTIFICATE OF WATER RIGHT

(For rights perfected under original, enlargement or secondary permits)

This is to Certify, That the CITY OF SILVERTON

of Silverton, State of Oregon, has made proof to the satisfaction of the STATE WATER BOARD of Oregon, of a right to the use of the waters of Silver Creek, a tributary of East Fork of Pudding River

for the purpose of Municipal, domestic supply

under Permit No. 622 of the State Engineer, and that said right to the use of said waters has been perfected in accordance with the laws of Oregon and duly confirmed by order of the STATE WATER BOARD of Oregon, made and entered

of record in the Record of Proceedings of said Board, at Salem, in Volume 1

at page 329, on the 28th day of July, 1919; that the priority of

the right hereby confirmed dates from March 16, 1911; that the amount of water to which such right is entitled and hereby confirmed, for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not

exceed 5.00 cubic feet per second.

A description of the lands under such right, and to which the water hereby confirmed is appurtenant, or, if for other purposes, the place where such water is put to beneficial use, is as follows: The City of Silverton, in Marion County, Oregon.

Ch. Pt. of Div. Sp. Or. Vol. 12, p. 167

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described.

Rights to the use of water for power purposes are limited to a period of forty years from the date of priority of the right, as herein set forth, subject to a preference right of renewal under the laws existing at the date of the expiration of the right for power purposes, as hereby confirmed and limited.

Witness the seal and signature of the STATE WATER BOARD affixed this 1st day of August, 1919.

STATE WATER BOARD

(SEAL OF STATE WATER BOARD)

By: PERCY A. CUPPER, State Engineer, President

Attest: R. W. Potter, Secretary

Recorded in State Record of Water Right Certificates, Volume 3, Page 2400

CERTIFICATE NO. 2400

Permit No. 622

## APPLICATION FOR A PERMIT TO APPROPRIATE THE PUBLIC WATERS OF THE STATE OF OREGON

I, The City of Silverton (Name of Applicant)  
 of Silverton (Postoffice), County of Marion  
 State of Oregon, do hereby make application for a permit to appropriate  
 the following described public waters of the State of Oregon, subject to existing rights.

If the applicant is a corporation, give date and place of incorporation.....

Incorporated by Act of Legislative Assembly Feb. 1891.....

1. The source of the proposed appropriation is..... (Name of stream)  
Silver Creek

2. The amount of water which the applicant intends to apply to beneficial use is.....  
Five cubic feet per second.

3. The use to which the water is to be applied is..... (Irrigation, power, mining, manufacturing,  
 domestic supplies, etc.)  
Municipal domestic supply within City of Silverton, aforesaid.

4. The point of diversion is located N. 45° West 20 chains from the SE corner of  
 Section 18 T. 7 S. R. 1 E. Willamette Meridian, Marion Co. (Give distance and bearing to section corner)

being within the SE 1/4 of ..... of Sec. 18, Tp. 7 S  
 (Give smallest legal subdivision) (No. N. or S.)

R. 1 E, W. M., in the County of Marion  
 (No. E. or W.)

5. The Pipe Line (Main ditch, canal or pipe line) to be 4 3/4  
 miles in length, terminating in the SE 1/4 of Sec. 34, Tp. 6 S  
 (Smallest legal subdivision) (No. N. or S.)

R. 1 W, W. M., the proposed location being shown throughout on the accompanying map.  
 (No. E. or W.)

6. The name of the ditch, canal or other works is.....  
Fishburn Pipe Line

### Description of Works

#### Diversion Works—

7. (a) Height of dam 5 feet, length on top 50 feet, length at bottom  
50 feet; material to be used and character of construction..... (Loose rock, concrete,  
 Concrete core with loose rock filled cribs, with waste-way over dam.  
 masonry, rock and brush, timber crib, etc., wasteway over or around dam)

(b) Description of headgate..... (Timber, concrete, etc., number and size of openings)  
10 inch pipe to be covered with suitable screens.

\*A different form of application is provided where an appropriation is to be made by the enlargement of existing works, or where storage works are contemplated. These forms can be secured without charge, together with instructions, by addressing the State Engineer, Salem, Oregon.

**Municipal Supply—**

11. To supply the city of Silverton, Marion County, State of Oregon.  
(Name of) County, having a present population of 2,500 and an estimated  
population of 5,000 in 1915.

12. Estimated cost of proposed works, \$ 50,000.00

13. Construction work will begin on or before April 15, 1911

14. Construction work will be completed on or before October 15, 1911

15. The water will be completely applied to the proposed use on or before  
October 15, 1911

Duplicate maps of the proposed ditch or other works, prepared in accordance with the rules of the Board of Control, accompany this application.

THE CITY OF SILVERTON

(Name of Applicant)

By W. A. Fishburn,

Mayor

By S. E. Richardson

City Recorder

Signed in the presence of us as witnesses:

(1) \_\_\_\_\_, Silverton, Oregon  
(Name) (Address of Witness)

(2) \_\_\_\_\_, Silverton, Oregon  
(Name) (Address of Witness)

Remarks: The main pipe line is to be constructed of wood. Waivers have been  
secured from Fischers Flouring Mills, L. Ames, and P. L. Brown,  
and negotiations are pending with the Portland Railway Light and  
Power Co., for a waiver and right of way, the above named persons  
being the only prior appropriators of the waters of Silver Creek.

STATE OF OREGON,

County of Marion

} ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for correction or completion, as follows:

In order to retain its priority, this application must be returned to the State Engineer, with corrections, on or before \_\_\_\_\_, 19\_\_\_\_\_.

WITNESS my hand this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_\_.

State Engineer.

**Canal System—**

8. (a) Give dimensions at each point of canal where materially changed in size, stating miles from headgate. At headgate: Width on top (at water line).....feet; width on bottom.....feet; depth of water.....feet; grade.....feet fall per 1000 feet.

(b) At.....miles from headgate: Width on top (at water line).....feet; width on bottom.....feet; depth of water.....feet; grade.....feet fall per 1000 feet.

**Fill in the Following Information Where the Water is Used for:**

**Irrigation—**

9. The land to be irrigated has a total area of.....acres, located in each smallest legal subdivision, as follows: .....

(Give area of land in each smallest legal subdivision which you intend to irrigate)

(If more space required, attach separate sheet)

**Power, Mining, Manufacturing or Transportation Purposes—**

10. (a) Total amount of power to be developed.....horsepower.

(b) Total fall to be utilized.....feet.

(Head)

(c) The nature of the works by means of which the power is to be developed.....

(d) Such works to be located in.....of Sec. ....

(Legal subdivision)

Tp. ...., R. ...., W. M. ....

(No. N. or S.)

(No. E. or W.)

(e) Is water to be returned to any stream?.....

(Yes or No)

(f) If so, name stream and locate point of return.....

Sec. ....

Tp. ....

(No. N. or S.)

R. ....

(No. E. or W.)

W. M. ....

(g) The use to which the power is to be applied is.....

(h) The nature of the mines to be served.....

2

Application No. 1297

Permit No. 622

PERMIT

To appropriate the public waters of the State of Oregon

Division No. 1 District No.

This instrument was first received in the office of the State Engineer at Salem, Oregon,

on the 16 day of March

19 11, at 8:30 o'clock A.M.

Returned to applicant for correction

Corrected application received

Approved

Apr 14 1911

Recorded in Book No. 7 of Permits on

Page 622

John H Lewis

State Engineer

STATE OF OREGON,

County of Marion

} ss.

This is to certify that I have examined the foregoing application and do hereby grant the same, subject to the following limitations and conditions:

The amount of water appropriated shall be limited to the amount which can be applied to beneficial use and not to exceed Five (5.00) cubic feet per second.

Actual construction work shall begin on or before Apr 14 1912 and shall thereafter be prosecuted with reasonable diligence and be completed on or before Apr 14 1914

Complete application of the water to the proposed use shall be made on or before Apr 14 1916

WITNESS my hand this 14th day of April, 1911

John H. Lewis State Engineer.



Doug Parrow

Oregon Water Resources Department  
Water Rights Division

Water Rights Application  
Number S-50185

**Final Order<sup>1</sup>**  
**Extension of Time for Permit Number S-36714**

***Application History***

On FEBRUARY 20, 2003, the CITY OF SILVERTON submitted an application to the Department for an extension of time for permit number S-36714. The Department issued permit number S-36714 on MAY 18, 1973. The permit called for completion of construction of the water development project by OCTOBER 1, 1975, and complete application of water to the full beneficial use by OCTOBER 1, 1976. In accordance with OAR 690-315-0050(2), on JULY 1, 2003, the Department issued a Proposed Final Order proposing to extend the time to complete construction of the water development project and the time to fully apply water to beneficial use to OCTOBER 1, 2038. The protest period closed AUGUST 15, 2003, in accordance with OAR 690-315-0060(1). No protest was filed.

The applicant has demonstrated good cause for the permit extension pursuant to ORS 537.230, 537.248, 537.630, 539.010(5) and/or OAR 690-315-0040(2).

At time of issuance of the Proposed Final Order the Department concluded that, based on the factors demonstrated by the applicant, the permit may be extended subject to the following conditions:

**Conditions**

**Development Limitations**

Diversion of stored water from Silver Creek Reservoir (constructed under Permit #R-5948) beyond 200.0 AF under Permit #S-36714 shall only be authorized upon issuance of a final order approving a Water Management and Conservation Plan under OAR Chapter 690, Division 86. The required Water Management and Conservation Plan shall be submitted to the Department within 3 years from the date this extension is final.

---

**Appeal Rights**

*Under the provisions of ORS 536.075, the applicant may appeal this order by filing a petition for review in the Circuit Court for Marion County or the circuit court for the county in which the applicant resides or has a principal business office. The petition for review must be filed within 60 days after the date this order is served. ORS 183.484.*

**Order**

The extension of time for Application Number S-50185, Permit Number S-36714, therefore, is approved. The deadline for completing construction is extended to OCTOBER 1, 2038. The deadline for applying water to full beneficial use is extended to OCTOBER 1, 2038.

**DATED: September 4, 2003**

  
Paul R. Cleary, Director

**RECEIVED**  
MAR 20 1973  
STATE ENGINEER  
SALEM, OREGON

Permit No. **30714**

**\*APPLICATION FOR PERMIT**

**To Appropriate the Public Waters of the State of Oregon**

I, City of Silverton (Name of applicant)  
of 306 South Water Street, Silverton (City)  
State of Oregon, 97381, do hereby make application for a permit to appropriate the  
(Mailing address) (Zip Code)  
following described public waters of the State of Oregon, **SUBJECT TO EXISTING RIGHTS:**

If the applicant is a corporation, give date and place of incorporation  
1891 Silverton, Oregon

1. The source of the proposed appropriation is Silver Creek Reservoir  
(Name of stream)  
on Silver Creek, a tributary of  pudding River
2. The amount of water which the applicant intends to apply to beneficial use is  
cubic feet per second 1300 Acre Feet per Year at Rate Up to 14 cfs.  
(If water is to be used from more than one source, give quantity from each)
3. The use to which the water is to be applied is Municipal Supply  
(Irrigation, power, mining, manufacturing, domestic supplies, etc.)

The dam outlet headworks is  
4. The point of diversion is located 570 ft. S and 550 ft. W from the NE  
(N. or S.) (E. or W.)  
corner of S12 T7S, R1W, W.M.  
(Section or subdivision)

The city pump station point of diversion is 820 ft. N. and 760 ft. East of  
the S.W. corner of S35 T 6S R1W, WM.  
(If preferable, give distance and bearing to section corner)

(If there is more than one point of diversion, each must be described. Use separate sheet if necessary)  
being within the N.E. 1/4 of N.E. 1/4 of Sec. 12, Tp. 7 S,  
(Give smallest legal subdivision) (N. or S.)  
R. 1 W, W. M., in the county of Marion  
(E. or W.)

5. The Raw Water Pipeline from the Pump to be 0.5 miles  
(Main ditch, canal or pipe line) (Miles or feet)  
Station Intake on Silver Creek to the City Water Treatment Plant  
in length, terminating in the NW 1/4 of SE 1/4 of Sec. 35, Tp. 6 S,  
(Give smallest legal subdivision) (N. or S.)  
R. 1 W, W. M., the proposed location being shown throughout on the accompanying map.  
(E. or W.)

**DESCRIPTION OF WORKS**

**Diversion Works—**

6. (a) Height of dam 65 feet, length on top 500 feet, length at bottom  
300 feet; material to be used and character of construction Zoned earthfill dam  
(Loose rock, concrete, masonry)  
with wasteway around dam.

(b) Description of headgate One 18" slidegate and one 42" slidegate with  
(Timber, concrete, etc., number and size of openings)  
steel pipe and cast in place reinforced concrete 42" diameter outlet  
under dam. Gate structures are reinforced concrete.

(c) If water is to be pumped give general description Downstream from the dam the  
(Size and type of pump)  
water will be pumped to the City Water Treatment Plant. The pump station  
(Size and type of engine or motor to be used, total head water is to be lifted, etc.)  
is now two 25 hp vertical turbine pumps rated at 500 GPM each pumping  
into a 12-inch pipeline. The pump station and pipeline will be modified

\* A different form of application is provided where storage works are contemplated. Such forms can be secured without charge, together with instructions, by addressing the State Engineer, Salem, Oregon 97310.  
as the demand for greater capacity develops.

30714

36714

~~Canal System or Pipe Line~~— From Silver Creek Pump Station to Water Treatment Plant

7. (a) Give dimensions at each point of canal where materially changed in size, stating miles from headgate. At headgate: width on top (at water line) ..... feet; width on bottom ..... feet; depth of water ..... feet; grade ..... feet fall per one thousand feet.

(b) At ..... miles from headgate: width on top (at water line) ..... feet; width on bottom ..... feet; depth of water ..... feet; grade ..... feet fall per one thousand feet.

(c) Length of pipe, 2,500 ft.; size at intake, 12 in.; size at ..... ft. from intake ..... in.; size at place of use 12 in.; difference in elevation between intake and place of use, about 170 ft. Is grade uniform? NO Estimated capacity, 5 sec. ft.

8. Location of ~~area to be irrigated~~, or place of use City of Silverton Water Service Area Including Areas of Possible Expansion

Township North or South	Range E. or W. of Willamette Meridian	Section	Forty-acre Tract	Number Acres To Be Irrigated
-------------------------	---------------------------------------	---------	------------------	------------------------------

8. Location of place of use - City of Silverton Water Service Area Including Areas of Possible Expansion

Township North or South	Range W. or W. of Willamette Meridian	Section	Forty-Acre Tract	Number of Acres to be Irrigated
6 S	1 W	23	E ½ SW ¼	-----
		26	S ½ NE ¼	
			SE ¼ SW ¼	
		27	S ½ NW ¼	
			NE ¼ NW ¼	
		33	34	
SE ¼				
35	1	NE ¼ NE ¼		
		NE ¼ SE ¼ SW ¼ NW ¼		
7 S	1 W	2	S ½ SW ¼	
			NW ¼ NE ¼	
		S ½ NE ¼		
		N ½ SE ¼		
		SE ¼ SE ¼		
		SE ¼ NW ¼		
3	3	N ½ NW ¼		
		N ½ NE ¼		

Municipal or Domestic Supply—

10. (a) To supply the city of Silverton

Marion County, having a present population of 4,300

and an estimated population of 7,900 in 1990.

(b) If for domestic use state number of families to be supplied

(Answer questions 11, 12, 13, and 14 in all cases) -

11. Estimated cost of proposed works, \$ 500,000

12. Construction work will begin on or before May, 1973

13. Construction work will be completed on or before November, 1973

14. The water will be completely applied to the proposed use on or before The storage will be used initially during the summer of 1974.

*[Handwritten signature]*

Remarks: Water will be stored during winter months for release during summer and fall. The water released from storage will flow down Silver Creek to the existing pump station where it will enter the City System.

STATE OF OREGON, }  
County of Marion, } ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for correction and completion

In order to retain its priority, this application must be returned to the State Engineer, with corrections on or before June 4, 1973.

RECEIVED  
APR 17 1973  
STATE ENGINEER  
SALEM, OREGON

WITNESS my hand this 4<sup>th</sup> day of June, 1973.

CHRIS L. WHEELER  
STATE ENGINEER

By *[Signature]*  
Wayne J. Overcash  
ASSISTANT

PERMIT

STATE OF OREGON, }  
County of Marion, } ss.

This is to certify that I have examined the foregoing application and do hereby grant the same, SUBJECT TO EXISTING RIGHTS and the following limitations and conditions:

The right herein granted is limited to the amount of water which can be applied to beneficial use and shall not exceed 1300.0 ~~acre feet~~ acre feet stored water only measured at the point of diversion from the stream, or its equivalent in case of rotation with other water users, from Silver Creek Reservoir to be constructed under application No. R-50184, permit No. R-5948

The use to which this water is to be applied is municipal

If for irrigation, this appropriation shall be limited to \_\_\_\_\_ of one cubic foot per second or its equivalent for each acre irrigated \_\_\_\_\_

and shall be subject to such reasonable rotation system as may be ordered by the proper state officer.

The priority date of this permit is March 20, 1973

Actual construction work shall begin on or before May 18, 1974 and shall thereafter be prosecuted with reasonable diligence and be completed on or before October 1, 1975.

Complete application of the water to the proposed use shall be made on or before October 1, 1976.

WITNESS my hand this 18th day of May, 19 73.

BC 10-1-96, EXT. BCO1

*Chris L. Wheeler*  
STATE ENGINEER

Application No. 50185  
Permit No. 36714

PERMIT

TO APPROPRIATE THE PUBLIC WATERS OF THE STATE OF OREGON

This instrument was first received in the office of the State Engineer at Salem, Oregon, on the 20th day of March, 1973, at P.M. o'clock P. M.

Returned to applicant:

Approved: May 18, 1973

Recorded in book No. \_\_\_\_\_ of 36714 Permits on page \_\_\_\_\_

CHRIS L. WHEELER  
STATE ENGINEER

Drainage Basin No. 2 page 38420  
51.00  
fees



**RECEIVED**  
MAR 20 1973  
STATE ENGINEER  
SALEM, OREGON

\* Reservoir Permit No. **R 5948**

**Application for a Permit to Construct a Reservoir and to Store for Beneficial Use the Unappropriated Waters of the State of Oregon**

I, City of Silverton  
(Name of Applicant)  
of 306 South Water Street Silverton  
(Mailing address) (City)  
State of Oregon 97381, do hereby make application for a permit to construct the  
(Zip Code)

following described reservoir and to store the unappropriated waters of the State of Oregon, subject to existing rights.

If the applicant is a corporation, give date and place of incorporation  
1891 Silverton, Oregon

1. The name of the proposed reservoir is Silver Creek Reservoir.

2. The name of the stream from which the reservoir is to be filled and the appropriation made is  
Silver Creek

tributary of Pudding River

3. The amount of water to be stored is 1300 acre feet.

4. The use to be made of the impounded water is Municipal Supply  
(Irrigation, power, domestic supply, etc.)

5. The location of the proposed reservoir will be in Sec. S12 T7S, RIW and S. 7&18, T7S, R1E  
(Give sections or townships to be submerged)

Tp. R, W.M., in the county of Marion

(a) State whether situated in channel of running stream and give character of material at outlet  
Situated in channel of Silver Creek, a running stream. Outlet will be in rock.

(b) If not in channel of running stream, state how it is to be filled. If through a feed canal, give name and dimensions

6. The dam will be located in N.E. 1/4 of N.E. 1/4, Sec. 12,  
(Smallest legal subdivision)  
Tp. 7 S, R. 1 W, W.M. The maximum height will be 65 feet above stream bed or ground  
surface on center line of dam. The length on top will be about 500 feet; length on  
bottom about 300 feet; width on top 20 feet; slope on front  
or water side 3 : 1; slope on back 2 : 1; height of dam above water line  
(Feet horizontal to 1 vertical) (Feet horizontal to 1 vertical)  
when full 16 feet.

\* A different form of application should be used for the appropriation of stored water to beneficial use. Such forms can be secured without charge, together with instructions, by addressing the State Engineer, Salem, Oregon 97310.

11 2014

7/3 1st 84 12  
8/3 1st 84 12

7. The construction of dam, the material of which it is to be built, and method of protection from waves are as follows: Zoned earthfill comprised of a fine grain soil core section with rocky shell sections. Coarser basalt rock from the spillway excavation or cobbles from the gravel borrow areas will be placed on the upstream slope.

8. The location of wasteway with dimensions are as follows: Chute Spillway around the dam, 120 ft. wide at crest, narrowing gradually to 60 feet wide at 180 feet downstream of crest.

9. The location of outlet from the proposed reservoir, with character of construction and dimensions, are as follows: At base of dam, 42 inch cast in place reinforced concrete outlet pipe.  
(All dams across natural stream channels must be provided with an outlet conduit, of such capacity and location to pass the normal flow of the stream at any time)

10. The area submerged by the proposed reservoir, when full, will be 65 acres, with a maximum depth of water of 50 feet; and approximate mean depth of water 20 feet.

11. The estimated cost of the proposed work is \$ 500,000

12. Construction work will begin on or before May, 1973

13. Construction work will be completed on or before December, 1973

*[Handwritten Signature]*  
Applicant

STATE OF OREGON, }  
County of Marion, } ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for .....

In order to retain its priority, this application must be returned to the State Engineer, with corrections on or before ....., 19.....

WITNESS my hand this ..... day of ....., 19.....

STATE ENGINEER

By R. 2018

ASSISTANT

R 5948

Remarks: The spillway design flood was computed to be 14,200 cfs according to procedure set forth by the U.S. Weather Bureau Hydro-meteorological Report No. 43 for computation of maximum probable precipitation. An additional 4 feet of freeboard was allowed above computed maximum flood level in the reservoir.

Sudden failure of the dam would cause serious flooding in Silverton and downstream with resulting heavy property damage and probable loss of life.

STATE OF OREGON, }  
County of Marion, } ss.

This is to certify that I have examined the foregoing application and do hereby grant the same, subject to the following limitations and conditions: The right herein granted is limited to the construction of Silver Creek Reservoir and storage of water from Silver Creek to be appropriated under application No. 50185, permit No. 36714 for municipal use.

The right hereunder shall be limited to the storage of 1300.0 acre feet.

The priority date of this permit is March 20, 1973.

Actual construction work shall begin on or before May 18, 1974 and shall thereafter be prosecuted with reasonable diligence and be completed on or before October 1, 1975.

WITNESS my hand this 18th day of May, 1973.

*[Signature]*  
STATE ENGINEER OK.  
*[Initials]*

Application No. R-50194

Reservoir Permit No. R 5948

**PERMIT**

To construct a reservoir and store for beneficial use the unappropriated waters of the State of Oregon.

This instrument was first received in the office of the State Engineer at Salem, Oregon, on the 20th day of March, 1973, at 8:00 o'clock A. M.

Returned to applicant:

Approved: May 18, 1973

Recorded in Book No. \_\_\_\_\_ of Reservoirs, on Page R 5948

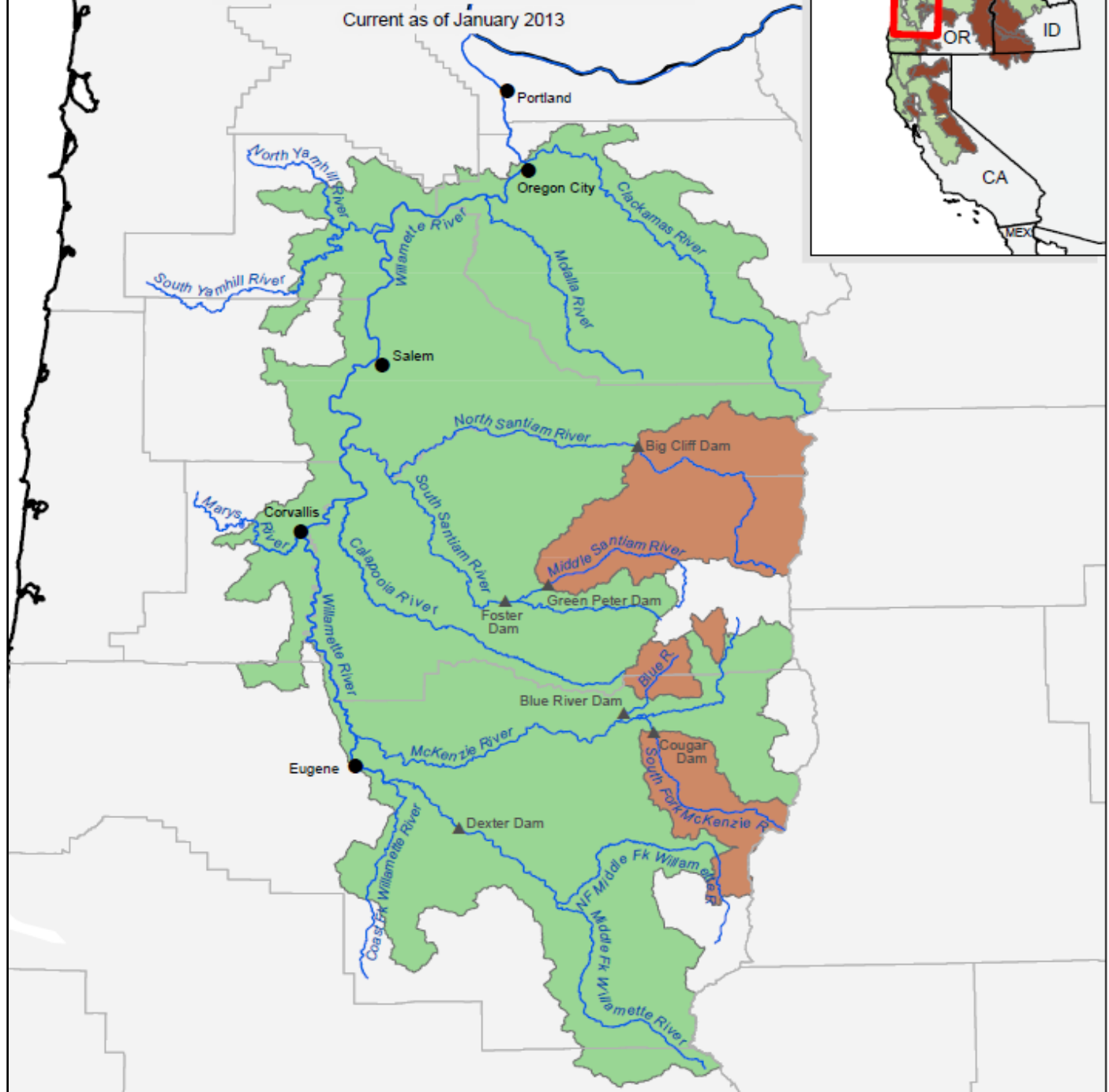
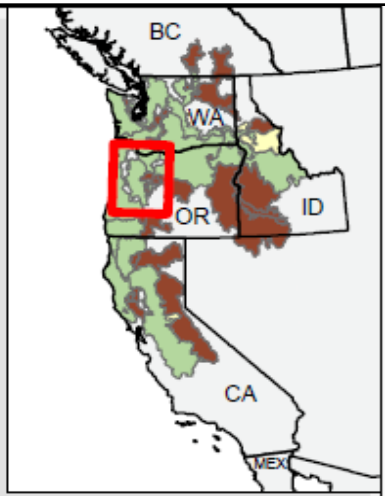
CHRIS L. WHEELER  
State Engineer

Drainage Basin No. 2 page 38220



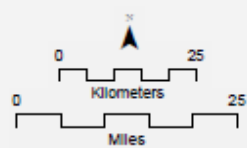
# Upper Willamette River Chinook Salmon Evolutionarily Significant Unit

Current as of January 2013



**Upper Willamette River Chinook Salmon**

- ESU Boundary
- Historical Watershed: Anthropogenically Blocked
- County Boundary

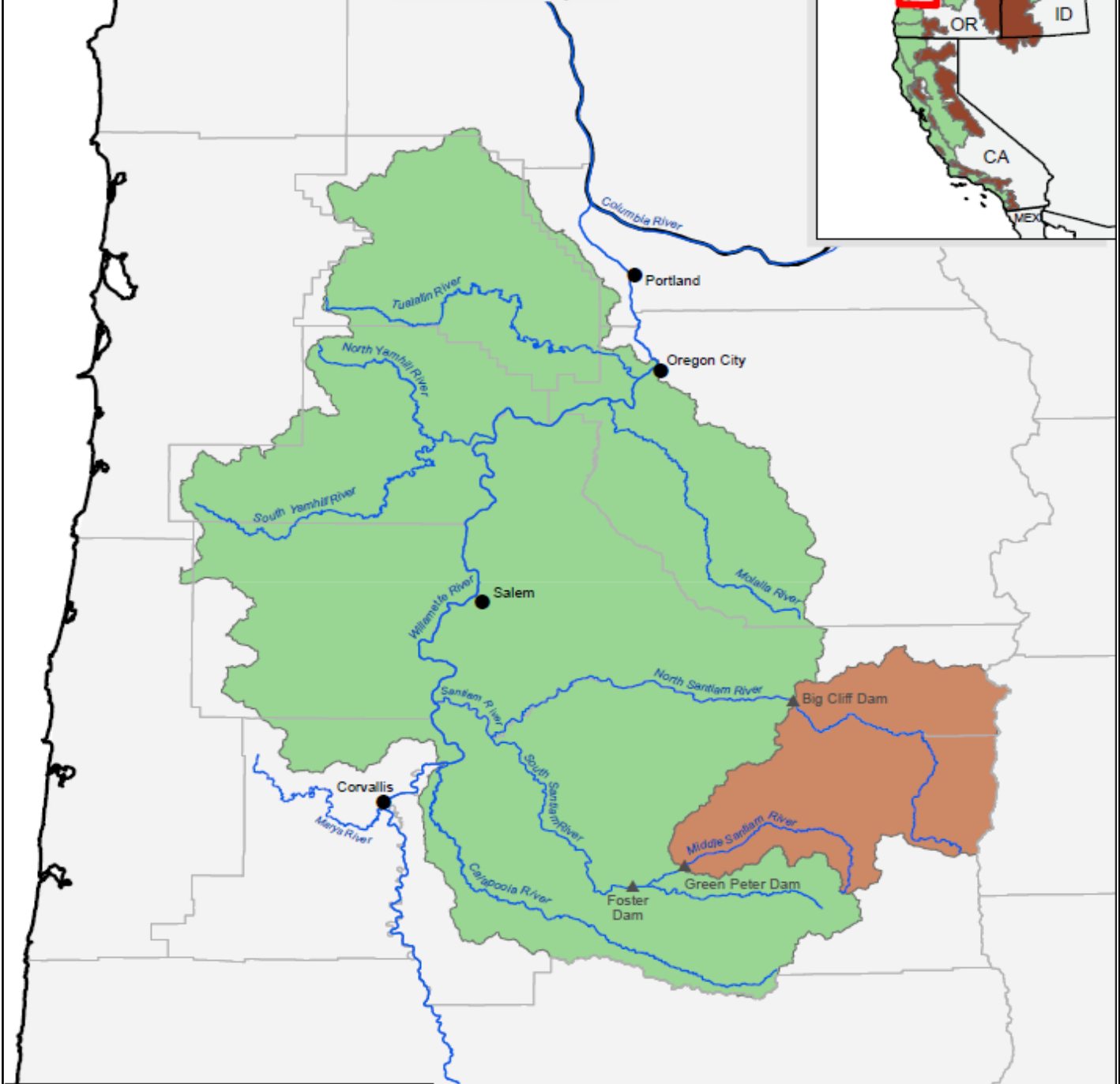
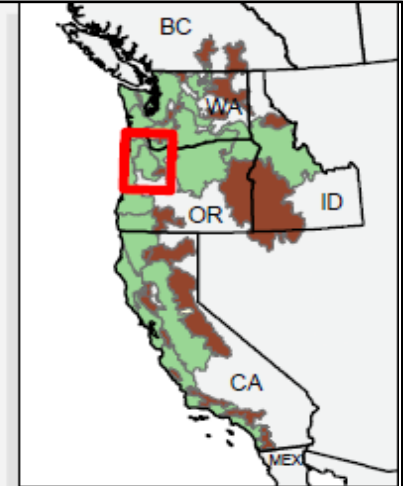


Map is for general reference only  
 UNITED STATES DEPARTMENT OF COMMERCE  
 National Oceanic and Atmospheric Administration  
 NATIONAL MARINE FISHERIES SERVICE  
 PROTECTED RESOURCES DIVISION  
 1201 NE Lloyd Boulevard, Suite 1100  
 PORTLAND, OREGON 97232



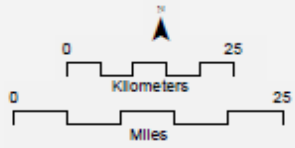
# Upper Willamette River Steelhead Distinct Population Segment

Current as of January 2013



**Upper Willamette River Steelhead**

- DPS Boundary
- Historical Watershed: Anthropogenically Blocked
- County Boundary



*Map is for general reference only*

UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
PROTECTED RESOURCES DIVISION  
1201 NE Lloyd Boulevard, Suite 1100  
PORTLAND, OREGON 97232





Every Drop Counts

## Water Curtailment Alert

The State of Oregon is facing a potential drought this summer. The City Council has enacted the water curtailment Resolution No. 01-14 which lists three stages. Each stage is defined by the causes, severity, and anticipated duration of the water shortage. We are now **in Stage One** which includes voluntary watering curtailment for residents and businesses.

### What is the City doing to help?

- City Parks shall operate their irrigation systems to achieve maximum efficiency based upon data received from their on-site weather station.
- City operated non-recycling decorative fountains shall cease operating.
- Hydrant and water line flushing shall be limited to essential needs.
- Silverton Reservoir operated in the water conservation mode.
- Treated effluent water is used to irrigate the Wastewater Treatment Plant.

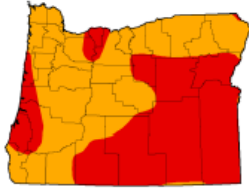
### What can I do to help?

- Voluntary restricted lawn watering and other nonessential water uses. Schedule is based on odd/even address numbers for residential and business customers. Addresses ending in even numbers (e.g. 200, 202, 204) will water on even numbered days (e.g. July 2, 4, 6). Addresses ending in odd numbers (e.g. 201, 203, 205) will water on odd numbered days (e.g. July 1, 3, 5).
- Restrict watering to early morning and evening hours to avoid loss through evaporation (i.e. dusk to dawn).
- Check irrigation systems are adjusted properly and not resulting in water runoff or overspray onto sidewalks and streets.
- Repair dripping faucets.
- Inspect for indoor leaks beneath sinks dishwashers, and in the tub/shower.

For more information, please contact the Public Works Department at (503) 873-8679 or visit the City's website at [www.silverton.or.us/conservation](http://www.silverton.or.us/conservation) for the Water Conservation page.

CITY OF SILVERTON  
306 S Water Street  
Silverton, OR 97381





The National Drought Monitor  
Mitigation Center  
August 18, 2015 Map  
Marion County is in Severe  
Drought Area

Every Drop Counts

## CITY OF SILVERTON

# Water Curtailment Alert—Stage 2

The State of Oregon is facing a drought this summer. The City Council has enacted **STAGE TWO** on August 24, 2015, which includes voluntary watering curtailment for residents and businesses.

### Per Resolution No. 01-14—Stage Two Water Supply Shortage

Customers are asked to voluntarily restrict all lawn watering and other nonessential uses of water as specified below:

- ◆ No watering or irrigating of lawns, grass, or turf unless it is:
  - New lawn, grass, or turf that has been seeded or sodded after March 1, 2015.
  - Athletic fields frequently used for organized play
  - Park and recreation areas of a particular significance and value to the community as approved by the City Manager
- ◆ No use of City-supplied water shall be allowed to clean, fill, or maintain levels in decorative fountains.
- ◆ No use of City-supplied water to wash sidewalks, walkways, streets, driveways, parking lots or other hard surface areas except where necessary for public health or safety.
- ◆ No use of City-supplied water shall be allowed to wash vehicles (without an approved recycling system).
- ◆ Parks supplied by City water, shall limit nonessential water use and/or irrigate only during off peak hours as specified by the City Manager.
- ◆ Hydrant and water main flushing shall be done for emergencies only.

For more information, please contact the Public Works Department at (503) 873-8679 or visit the City's website at [www.silverton.or.us/conservation](http://www.silverton.or.us/conservation).

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