Water Management and Conservation Plan

Draft

Prepared for:

City of Aumsville

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Prepared by:

Oregon Association of Water Utilities

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City of Aumsville

WATER MANAGEMENT CONSERVATION PLAN

Executive Summary:

A water management conservation plan (WMCP), required by the Oregon Water Resources Department (OWRD), found in the Oregon Administrative Rules (OAR) Chapter 690, Division 86 directly tied to criteria relating to water rights and permitting. Quantities of water consumed for municipal purposes are increasing as populations grow, and developing strategies to manage water rights of an entity will become more essential in the future. Key components in the WMCP are, a) water conservation measures stretching those existing water rights with substantive evidence proving the need to maintain and or grow the total required water, b) considering future water needs as it relates to both existing and potential alternative sources of water for the City of Aumsville.

The WMCP, formed with five primary points, building on the current resources and parlaying said information to the calculated estimates of water demand in the future. The population served, types of service (residential vs commercial) and the gallons per capita daily are measurements that substantiate necessary resources for the future, initially using five-year data set of water pumped.

The regulations that pertain to the "conservation" element of the WMCP delves into the current measures the water system is performing or not, i.e., water audit, metering, rates, leakage as well as education of the public. Public water (municipal) systems (PWS) are encouraged to upgrade infrastructure that reduces the total amount of water used. If this step is deemed successful, the management team must also look at the fiscal impact of selling less water.

The curtailment section of the WMCP should coincide with the emergency response plan already implemented per rule OAR 333-061-0064. In this section of the WMCP, the decision makers create stages of alert and establish trigger points to assist when the water system applies curtailment actions, either voluntarily or mandated. These actions should be initiated on the water system's ability to supply water during all levels of demand or continue to supply minimal water during a partial disruption of services.

The water supply element of the WMCP looks at the forecasted demand as it relates to projected needs of water and the available sources of water. This piece of the WMCP is part of the overall coordination of demands for water from other prevailing claims on a water source.

Long-term permitting and extensions of time are becoming increasingly more difficult to obtain. Maintaining the ability to prove up the beneficial use towards certification will require public water systems additional time and resources. These actions are quite different today than in the past as data collection should become a higher priority for operations. Operationally, the

accuracy in the data supports the necessary decisions to negotiate the water permitting and certification process.

Additional future costs for system upgrades and repairs will require meeting the minimal unaccounted-for water (water loss). Water loss above ten percent will require development and implementation of a regularly scheduled and systematic program to detect and repair leaks in the transmission and distribution system. These requirements will require staff time and contractual workforce, both requiring additional monetary resources, a point decision makers must address.

The table below is a snapshot depicting the current average water usage calculated for both a typical daily usage, known as gallons per capita daily (GPCD) and usage as it relates to peak demand, a number ascertained as it relates to a system operations and performance. A comparative set of figures details the current quantity of water allowed by the water system's permitted rights against the current actual usage for City of Aumsville**,** as well as the projected needs in maximum volume of water. The percentages shown indicate the relativity of water used against the total available water. Assuming conditions remain consistent with water production and water sold, it is speculated that the City of Aumsville will be using 46 percent of the allotted water rights during the timeframe of this WMCP.

Comparative Current Usage – Remaining Balance:

Table ES-1 Comparative Current Usage and Remaining Balance

Permits	Source(s)	Maximum Allowed Rate	Development Limitations CFS	Maximum GPM	Ave Daily Usage CFS	Peak Day Usage CFS	Bal of Permit Daily Gals	Balance of Permit CFS	Remaining Balance %
G-13679	Church Well	0.4460	0.4460	200	0.259	0.52	-	0.0000	0.0%
GR-3543	Lucas Well	0.1671	0.1671	75	0.000	0.00	107,992	0.1671	100.0%
G-6400	Boone 1	0.2900	0.2900	130	0.059	0.09	128,878	0.1994	68.8%
G-11891	Res Well	0.4000	0.4000	180	0.009	0.03	242,217	0.3748	93.7%
G-10223	Wells BP 2	1.4000	1.4000	628	0.184	0.39	652,916	1.0103	72.2%
G-1051	Tower	0.3000	0.3000	135	0.059	0.14	105,582	0.1634	54.5%
Total		**3.0031**	**3.00**	**1348**	**0.569**	**1.16**	1,191,849	1.8442	**61.41%**

Key figures in blue show the unused portion from current data for each permit, certificate and total

Remaining balance % shows percentage of total water available from right and certificates - 61.41 % available in 2024

Balance % shows precentage of water available from the existing right(s) for the future growth of the PWS

1.40		1.60	1.40 CFS peak demand through 2045, remaining 1.60 CFS available for the future

The table is a method to assess two aspects relating to water rights, a) comparative view to resolve if the total permitted quantity of water meets both the current and future needs of the public water system, b) to understand the balance of remaining (unused) quantity of total permitted water rights associated with the projected need. The maximum allowed rate is the amount of water originally allocated; the development limitation is an adjusted amount of total water that can be diverted. This newly lowered amount cannot be exceeded.

It is important to note that the State-mandated WMCP displays averages. This can be misleading for a water provider. Water utilities typically use actual peak demand when calculating their system infrastructure capabilities and rated performance. It is misleading to assume that a water permit can coincide with actual production. The variables in the real world can be counter intuitive to the allowed rate on a water permit or certificate. Permitted water rights may or may not coincide with typical production. The water production can be impacted at any given time through either natural or mechanical interruptions, severely limiting the total capacity of the source regardless of what is permitted.

Development limitation is a criterion placed on water under an extended permit as a condition to limit any diversion beyond the stated limits. The undeveloped portions of any single permit may be categorized under “Greenlight” water. Greenlight water refers to the undeveloped portion of the water that is not diverted for beneficial use. Recorded water and accounted for water during the writing of the WMCP becomes the developed portion.

The development limitations, “undeveloped portion” freezes any amount of water until an application requesting additional water is placed in the WMCP. The PWS must obtain approval and authority granted by OWRD to use any water identified as Greenlight water. The development limitation amount is not figured based on the findings in this WMCP but has been established based on annual water reports remitted to OWRD.

These specific points are emphasized due to the nature of retaining permitted water rights, the total amount of water currently allowed, and any potential or real State policy or rule amendments that can occur.

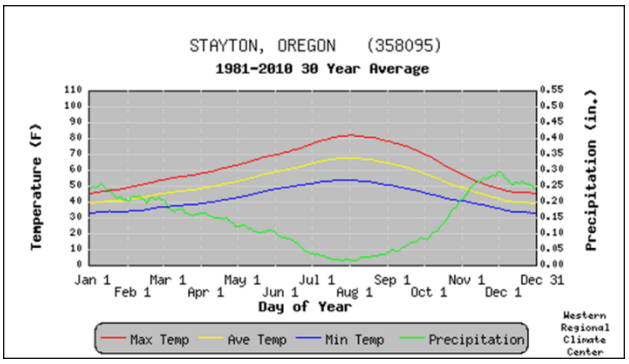
As the uncertainty of the future cannot guarantee the findings shown in this WMCP, the PWS is encouraged to seek professional advice from consultants, engineering firms and or water rights legal counsel for guidance relating to water permitting, certification.

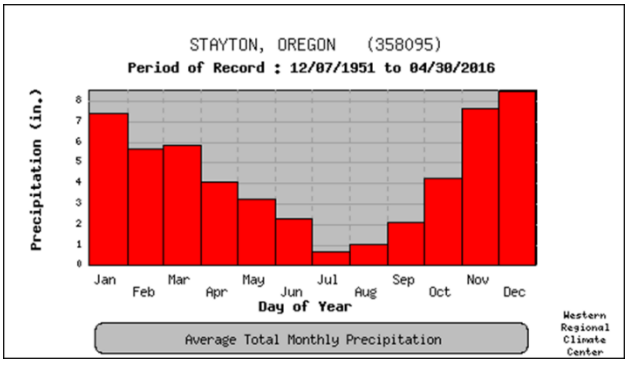
Introduction:

Situated in the western edge of Marion County, the City of Aumsville was originally named after a pioneer farm family member Aumus [1]. The City was incorporated in 1911 and the service area is approximately 0.89 square miles of land and is coordinated with the Marion County zoning development.

The median household income for the Aumsville area is $86,790.00 while the average per capita income in Oregon is $85,752.00 [2] The current population, per Portland State University-Population Research Center (2023 Annual Population Report), is 4,227 while Marion County's population is 353,649.[3] Per Oregon drinking water data, Aumsville has 1,207 water service connections, or 3.5 persons per household.[4]

Weather related information is from the averages proven by the Western Regional Climate Center over a period of 1981 through 2010. Annual rainfall is 39 inches, with 75 percent occurring over a five-month period between November and March. Like many areas of Oregon, the hottest month occurs in July while the coldest month is usually December/January. The average mean minimum temperature is 42^0 F, using the Stayton weather station as having the most complete information.[5]





City of Aumsville	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	46.0	50.6	55.5	61.2	67.7	73.8	81.8	81.8	75.5	64.2	52.6	46.7	63.1
Average Min. Temperature (F)	33.4	34.8	36.8	39.6	44.2	49.1	52.0	51.9	48.1	42.5	37.9	34.8	42.1
Average Total Precipitation (in.)	6.1	4.7	4.1	2.6	2.1	1.3	0.4	0.5	1.5	3.2	6.1	6.7	39.4

1 - https://en.wikipedia.org/wiki/Aumsville,_Oregon
2 - https://www.City-data.com/City/Aumsville-Oregon.html
3 - https://www.pdx.edu/population-research/population-estimate-reports
4 – Billing records from the City administrator
5 - https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?or5384

Scope:

The scope: associated with the State requirement, of this water management and conservation plan (WMCP) is to consider the functions of the water system from various points as it is run by the City of Aumsville. The primary concern is the management of existing water sources and the sustainability of the sources as they relate to the growth in and around the area. Equally important is continuing to supply water to both existing and future customers. Implementing conservation ideals and methods will be another tool to manage beneficial water use. 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 WMCP is to gain a better understanding of the balance of water from the source, through the water system and how it is consumed by the customers, coordinate with OAR requirements and guidelines towards water management and conservation. The City of Aumsville currently meets the criteria proven under OAR 690-086-0150(5), serving a population of 4,227 through 1,207 connections.

This WMCP is the third report sent to Water Resources Department, with the first WMCP completed and approved in July 2005 as part of the City's Water Master Plan. The next update for a WMCP is due in 2035, will be preceded by a progress report due in 2030.

Every five years, the City of Aumsville will update the 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.

Key benchmarks presented will be following the tasks completed in the previous WMCP's. At a minimum the City of Aumsville will:

- Supply educational information on water conservation to the customers served.
- www.aumsville.us/sites/default/files/fileattachments/community/page/2691/august_newsletter_2024.pdf
- Support the educational efforts by providing water aerators each year. (Max 50)
- Perform annual water audit, reviewing past production, consumption records.
- Verify accuracy of the production meters.
- Continue with a leak detection program if water loss is > than 10 percent.
- Estimate and track gallons per minute (GPM) flow when repairing water leaks.

This document has been compiled by the Oregon Association of Water Utilities with authorization from the City of Aumsville. This WMCP follows the Oregon Administrative Rules (OAR) Chapter 690, Division 86.

SECTION ONE
MUNICIPAL WATER SUPPLIER

1.1 Affected Local Governments: OAR 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.

In September 2024, City of Aumsville submitted a copy of this water management conservation plan for review to all affected governments listed below, as well as a request for comments on the awareness of water management and conservation planning. A single comment was received within the 30-day period. A copy of the notification letter and comments are included in Appendix A

- Marion County Planning Department – Brandon Reich – 503.566.4175
    - planning@co.marion.or.us
- Region 16 Water Master – Greg Wacker – 971.719.6262
    - greg.wacker@water.oregon.gov
- City of Sublimity – Alan Frost – 503.769.5475
    - subCityshop@wvi.com
- City of Stayton – Jennifer Siciliano – 503.769.2998
    - j.siciliano@staytonoregon.gov

1.2 Updated Plan Submittal: OAR 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.

OAR 690-086-0125 (6) states an updated plan to be sent to Oregon Water Resources Department within no more than 10 years. This is based on the proposed schedule for implementing conservation measures, changes in the rate of growth or other expected changes by the water supplier. A “Progress Report” will be sent on or before the 5-year period (2030) to review benchmarks and water use progress.

Conservation and water use practices are constantly evolving. Listed conservation efforts at the end of section two will be reviewed annually by assigned administrative staff, enabling the City of Aumsville to decide the progress of the water management conservation plan.

All efforts towards management and conservation are noted and kept for the progress report which will be given every five years by the City of Aumsville. The next progress report will be due by the end of 2030.

1.3 Additional Time: OAR 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 Aumsville is not requesting an extension of time to implement metering, as the benchmark established in a previously approved WMCP has been met with the last connection metered. The City of Aumsville is a fully metered water system, with a program to replace meters every year.

1.4 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.

The City of Aumsville supplies water to the community from groundwater wells, under six permits and or certificates, with a total allowance of water at 3.0031 cubic feet per second (CFS) or 1,347 gallons per minute (GPM). Pending the water source, the city has a treatment process that includes filtration, chlorination, and aeration with the primary objective to control taste and odors.

The city has two storage reservoirs totaling 1.1 million gallons (MG) which serve as a mixing and treatment vessel prior to distribution. A new 1 MG reservoir is currently under construction and scheduled for completion in early January 2025.

The City does not currently have any interconnections or intergovernmental agreements or water supply contracts. There have been past internal discussions of connecting to the City of Salem’s gravity water mains as an option to support additional water in the future. The logistics behind the idea have somewhat been completed but more is still to be considered.

1.4.1 Points of Diversion

Table 1-1: POD Locations / Permitted Rates

Table 1-1: POD Locations / Permitted Rates								
Permit	Township	Range	Section	Qtr Qtr	Notes	Named Source	Rate [1] (CFS)	Rate (GPM)
G-13679	8-S	1-W	30	NW SW	Well	Church Well	0.446	200
GR-3258	8-S	2-W	25	SW SE	Well	Lucas Well	0.1671	75
G-6400	8-S	2-W	25	SE SW	Well	Boone 1	0.29	130
G-11891	8-S	1-W	30	SW SW	Well	Res Well	0.40	180
G-10223	8-S	2-W	25	SE SW	Well	Wells BP 2	1.40	628
G-1051	8-S	2-W	25	SE SE	Well	Tower	0.30	135
G-10223	8-S	1-W	30	SE NW	Well	Wells BP 2	0.00	0.00
Total							3.0031	1,348
1 - Rates shown are without development limitations								
Certificate 96097 - Boone Park Well 2 and Church Well, not to exceed 1.40 CFS								

1.4.2 Storage Capacities

Table 1-2: Storage Reservoirs

Table: 1-2: Storage Reservoirs	
Reservoir	Storage Capacity (MG)
1	1.00
2	0.10
Total Capacity	1.10

1.4.3 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, 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.

Table 1-3: City of Aumsville Water Permits, Certificates Inventory

Table 1:3 Water Permits, Certificates Inventory													
									Actual Diversion				
Application No. (5)(a)	**Permit No. (5)(a)**	**Certificate No. (5)(a)**	**Priority Date (5)(b)**	**Transfer No.(5)(a)**	**Source (5)(c)**	**Use (5)(d)**	**Maximum Allowed Rate (cfs) (5)(e)**	**Allowed Rate under Development Limitations (cfs) (5)(e)**	**Maximum Instantaneous Rate Diverted to Date (cfs) (5)(f)**	**Maximum Annual Quantity Diverted to Date (MG) (5)(f)**	**Average Monthly Diversion (MG) (5)(g)**	**Average Daily Diversion (MG) (5)(g)**	**Authorized Completion Date (5)(h)**
G-14758	G-13679	0	5/26/1998	NA	Church Well	M	0.4460	0.4460	0.517	66.609	5.017	0.167	10/1/2024
GR-3543	GR-3543	GR-3258	8/30/1948	T-13940	Lucas Well	M	0.1671	0.1671	0.000	0.000	0.000	0.000	NA
G-6861	G-6400	65917	3/24/1975	NA	Boone 1	M	0.2900	0.2900	0.091	17.419	1.141	0.038	NA
G-12352	G-11891	89924	12/18/1990	T-13938	Res Well	M	0.4000	0.4000	0.025	3.617	0.167	0.006	NA
G-10926	G-10223	96097	4/14/1983	NA	Wells BP 2	M	1.4000	1.4000	0.390	49.927	3.575	0.119	NA
G-1143	G-1051	96098	8/1/1958	T-12046	Tower	M	0.3000	0.3000	0.137	22.241	1.139	0.038	NA
					Total		3.0031	3.0031	1.1589	159.8121	11.039	0.368	NA
Permit G-13679 - total allowance at 0.446 CFS - development limitation removed July 15, 2015 FO approving WMCP													
Permit G-13679 - an application of time is being submitted to allow for additional time to develop the permit towards full beneficial use													
Permit G-10223 - limited to 0.45 CFS - Lucas Well, 0.95 CFS Boone Park Well 2 and 1.40 CFS from Church well - not to exceed 1.40 CFS cumulative total													
Res well = Reservoir Well													
Certificate 96097 - Boone Park Well 2 and Church Well													
G-6400, Certificate 65917 - Boone Park Well 1													

1.5 Current Service Area: OAR 690-086-0140 (2)

A delineation of the current service areas and an estimate of the population served, and a description of the methodology used to make the estimate.

The City of Aumsville's water system serves an incorporated area in Marion County which encloses approximately 0.89 square miles in the central northern area of Willamette Valley. The rural area is typical of smaller communities with residential, and small businesses to support the community. Schools, and a larger industrial facility complement the area with jobs. The population in Aumsville per the Water Master Plan, April 2015, shows a total population could reach 5,673 people in 2034. According to Portland State University – Population Research Center (PSU-PRC) current population is 4,227 people with a 2045 designation at 6,250 people.[1] This equates to 1.4 percent average annual growth rate (AAGR) using the PSU-PRC methodology. For City services, the growth may be higher in the future as the city provides water to customers outside the city limits, but within the urban growth boundary (UGB). Those areas outside the city limits but inside UGB are in the north and east side of the City. See maps in Appendix B

1.6 Adequacy / Reliability of Existing Source: 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.

The adequacy and reliability of the existing water supply can be proven from two focus points, a) the ability to sustain flows from the existing aquifer, b) manage the existing water during distribution. A sound approach for the City is detailed data measurements of water drawn from the source and the ability to manage the supplies to their customers without loss.

Water production figures from Tables 1-4, 1-5 on the following pages give evidence for the consistency of water production at an average of 9.8 million gallons (MG) monthly. Data from the 2014 Water Master Plan shows an average annual water production at 102 MG (8.5 MG monthly). Data also illustrates the same period (2010-2013) the average unaccounted for was 10 percent. With the wells able to produce consistent figures (≈140 MG annually) (2023-2019), the existing source is considered dependable. The potential limitations are a) short-term mechanical failure of one the more productive wells, and b) the decline in water supply, but with a basket of water certificates and a water permit, rotation of the wells is possible to sustain the aquifer.

Table 1-5 indicating a five-year average usage rate at 0.49 CFS (9.8 MG/month), and a peak demand at 0.94 CFS (18.2 MG/month) the community demand ranges from 221 to 387 GPM or ≈ 16-28 percent of production capacity.

1 – https://www.pdx.edu/population-research/population-estimate-reports

The City of Aumsville is steadfast in managing the sources as it relates to production potential, usage of water diverted and understanding the percentage of unaccounted water.

Without future restrictions of water rights, the City can pump up to 3.0031 CFS (1,348 GPM). Permit G-13679 with an allowance of 0.446 CFS has an authorized completion date of 10-1-2024, reducing the allowed water to 2.557 CFS. This allowance of water should suffice during the timeline of this WMCP. An application for an extension of time is being submitted for Permit G-13679 to allow additional time to develop the permit towards full beneficial use.

The City has applied for an extension of time for Permit G-13679 to allow for additional time to develop this permit and put water to full beneficial use. The City expects that a final order approving this extension of time application will be issued prior to or in conjunction with approval of this WMCP update.

Table 1-4: Water Production, Sales, Unaccounted

Table 1-4: Water Production, Sales, Unaccounted										
PERMIT	**PRODUCTION YEARS**					**Total Diverted Water (MG)**	**Raw Water Pumped**	**Operations Usage**	**Ave. GPM**	**Ave. CFS**
	2023	**2022**	**2021**	**2020**	**2019**					
	Million Gallons (MG) [A]								**5-yr Average**	
G-13679	60.18	48.56	66.61	64.94	60.72	301.02	301,019,456		114.54	0.26
GR-3258	0.00	0.00	0.00	0.00	0.00	0.00	-		0.00	0.00
65917	11.28	17.42	12.86	13.45	13.47	68.49	68,485,787	**Annual Average**	26.06	0.06
89924	2.46	2.52	3.62	1.42	0.00	10.01	10,009,436		3.81	0.01
96097	39.05	36.91	42.35	49.93	46.27	214.52	214,515,380		81.63	0.18
96098	22.04	11.52	22.24	12.52	0.00	68.33	68,329,390		26.00	0.06
0	0.00	0.00	0.00	0.00	0.00	0.00	-		0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	-		0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	-		0.00	0.00
Production	135.02	116.94	147.68	142.26	120.47	662.36	662,359,450	132.472	252.04	0.562
Oper Usage	7.16	8.57	13.28	5.86	0.46	35.32	35,323,300	7.065	16.80	0.037
Monthly Average (MG)	11.25	9.74	12.31	11.85	10.04	**11.04**		**Operations [B]**		

	Annual Water Sales (MG)	**Total Water Sales (MG)**	**Total Water Pumped**	**Operations Usage**	**Unaccounted Water**	
2023	120,210,737	120.21	135.02	7.16	-5.7%	
2022	107,915,000	107.92	116.94	8.57	-0.4%	
2021	121,006,650	121.01	147.68	13.28	-9.1%	**-4.84%**
2020	124,719,353	124.72	142.26	5.86	-8.2%	
2019	118,982,752	118.98	120.47	0.46	-0.9%	

Table 1-4-1: Water Production, Sales Unaccounted Summary Averages									
2020-2016	**2023**	**2022**	**2021**	**2020**	**2019**	**Five Year Ave ***	**7.06**		
Max MG	60.18	48.56	66.61	64.94	60.72	Notes:			
Max CFS	0.26	0.21	0.28	0.28	0.26	A - Figures taken from Water Use Report timeframe coinciding with WMCP			
(5e) Allowed [C]	3.00	3.00	3.00	3.00	3.00	B - Line flush, PSI - flow testing, general operations,			
Allowed DL [D]	3.00	3.00	3.00	3.00	3.00	B - Operational water accountes for 5% of usage, which does not track fire servi			
(5f) Max Inst [C]	1.16	1.16	1.16	1.16	1.16	C - figures calculated in CFS without development limitations			
(5f) Max Ann [E]	135.02	116.94	147.68	142.26	120.47	D - figures calculated in CFS with development limitations			
(5g) Ave Mo. [E]	11.25	9.74	12.31	11.85	10.04	E - figures calculated in MG			
(5g) Ave Daily [E]	0.375	0.325	0.410	0.395	0.335	* - Average loss calculated during the timeframe of this WMCP			

1.7 Quantification of Present and Historical Use: OAR 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.

Table 1-5 outlines the quantification of water delivered from an average monthly and annual quantity and the peak months for the past five-years. Highlighted are the months creating the peak demand, being August 2023 at 0.945 CFS or 424 GPM.

Table 1-5: City of Aumsville Water Usage

Table 1-5: City of Aumsville Water Usage								
	Total Gallons						Gallons	
Month	**2023**	**2022**	**2021**	**2020**	**2019**	**Mo. Averages**	**GPD**	**CFS**
January	7,634,000	6,607,000	7,643,000	8,186,000	8,102,999	7,634,600	246,277	0.38
February	6,303,000	6,075,000	6,821,000	7,039,000	6,757,800	6,599,160	212,876	0.33
March	7,147,927	6,300,000	7,609,000	7,595,000	7,087,709	7,147,927	230,578	0.36
April	7,951,810	6,977,000	8,549,000	9,063,000	7,218,240	7,951,810	256,510	0.40
May	9,294,000	6,602,000	10,571,000	8,450,000	11,166,332	9,216,666	297,312	0.46
June	15,499,000	9,049,000	12,220,050	10,723,928	13,608,273	12,220,050	394,195	0.61
July	17,233,000	14,150,000	15,753,134	17,021,000	14,608,534	15,753,134	508,166	0.79
August	**18,319,000**	**16,884,000**	**17,299,466**	**17,469,000**	**16,525,865**	17,299,466	558,047	**0.86**
September	10,394,000	14,082,000	13,052,000	14,173,000	11,236,000	12,587,400	406,045	0.63
October	7,215,000	8,711,000	7,896,000	9,134,000	7,194,000	8,030,000	259,032	0.40
November	7,024,000	6,156,000	6,295,000	6,888,598	7,066,000	6,685,920	215,675	0.33
December	6,196,000	6,322,000	7,298,000	8,976,827	8,411,000	7,440,765	240,025	0.37
Annual Averages - Million Gallons								
Annual Totals	120,210,737	107,915,000	121,006,650	124,719,353	118,982,752	9,880,575	329,352	0.51
Annual Daily Ave	329,344	295,658	331,525	340,763	325,980	324,654	324,654	0.50
Mo. Maximum	18,319,000	16,884,000	17,299,466	17,469,000	16,525,865	18,319,000	610,633	**0.945**
Peak Seasonal	August	July	July	July	August			
Peak Day Use	610,633	562,800	576,649	582,300	550,862	610,633		0.94
User Averages								
Population *	4227	4212	4237	4215	4130			
Ave GPCD	78	70	78	**81**	79	77	81	
Peak GPCD	**144**	134	136	138	133	137	144	
*** - figures taken from annual population Report Tables PSU-PRC - https://www.pdx.edu/population-research/population-estimate-reports**								

1.8.1 Environmental Resource Issues of Concern OAR 690-086-0140 (5)(i)

Identification of any stream-flow dependent species listed by the State or Federal Agency as sensitive, threatened, or endangered that are present in their source(s). Any listing of the source as being water quality limited and the water quality parameters, any designation of the source as being in a critical ground water area.

The City of Aumsville obtains its water through five (5) wells with an average depth of 250 feet per well. Sensitive fish species are not impacted by these water sources as the supply of water is solely groundwater. The area is adjacent to a "limited" groundwater area, which restricts new water right permits to specific beneficial uses. Water quality parameters affect aesthetic quality as it relates to iron and hydrogen sulfide. The conditions are rectified through normal water treatment processes. The area is designated as a critical habitat for both Chinook Salmon and Steelhead along with a distinct population segment (DPS), noting the species is discrete from other populations. Though there is no connectivity with stream flow species, this information is provided pertaining to this subsection to indicate a review was completed.

Table 1-6: Endangered Species

Table 1-6: Endangered Species					
Species	**Ecoregion**	**ODFW Listing**	**Federal Listing**	**Area Designation**	**ESA Critical Habitat**
Hydrological Unit Code (HUC) 17090007					
Bull Trout	Will Valley	S	Threatened	SMU	No
Chinook Salmon - Fall	Will Valley	SC	Threatened	ESU / SMU	Yes -2019
Chinook Salmon - Spring	Will Valley	SC	Endangered	ESU / SMU	Yes -2019
Chum Salmon	Will Valley	SC	Threatened	ESU	Yes - 2018
Coastal Cutthroat Trout	Will Valley	S	Threatened	ESU	Yes - 2019
Oregon Chub	Will Valley	S	Threatened	Range WIde	Yes - 2019
Pacific Brook Lamprey	Will Valley	S	Threatened	Range Wide	No -2021
Pacific Lamprey	Will Valley	S	Threatened	Range Wide	No - 2021
Steelhead Summer	Will Valley	SC	Threatened	ESU / SMU	Yes - 2018
Steelhead Winter	Will Valley	SC	Threatened	ESU / SMU	Yes - 2019
Western Brook Lamprey	Will Valley	S	Not Listed	Range Wide	*
Western River Lamprey	Will Valley	S	Not Listed	Range WIde	*
Will Valley - Willamette Valley, * - U.S. Fish and Wildlife					
Oregon Senisitve Species List - 2021 -https://www.dfw.state.or.us/wildlife/diversity/species/docs/Sensitive_Species_List.pdf					
E - endangered, S - sensitive, SC -sensitive-critical, SMU - significant management unit, ESU - evolutionary significant unit, DPS - Distinct Population Segment					

1.9 Water use characteristics: OAR 690-086-0140 (6)

A description of customers served including other water suppliers and the estimated numbers; general water uses 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 Aumsville serves an approximate population of 4,227 through 1,207 connections in a land area typically appointed for a small rural City. The majority of the area is zoned low density residential with mid-sized pockets of medium and high density residential, with two industrial zones at opposite ends of the city limits.

Neither commercial nor industrial services make up a large portion of the service connections with an ≈ 40 commercial, industrial accounts. Typical commercial accounts are restaurants, medical clinics, and small office services to accommodate the citizens. A single elementary school is also served by the City of Aumsville.

From Table 1-5, typical GPCD equates to 81 gallons non-peak time and 144 GPCD peak times. Table 2.2, Existing Water Demand, from the 2015 Water Master Plan, the document reviewed for the last approved WMCP 2015, estimates GPCD at 76 gallons non-peak times and 184 GPCD peak times (daily).

TABLE 2.2: Existing Water Demand (gallons per capita per day)

Demand Scenario	2010	2011	2012	2013	Average 2010-2013	2013 Design Values
Population	3584	3680	3700	3815	varies	3815
Annual Average (gpcd)	79	69	76	78	76	73
Min Month (gpcd)	46	47	43	55	48	42
Max Month (gpcd)	150	136	114	130	133	141
Maximum Day (gpcd)	224	180	186	145	184	210
Peak Hour (gpcd)*	380	307	316	246	312	357

Peak hour is estimated to be 1.7 maximum day demand.

The community has been consistent with the amount of water consumed.
The primary usage for all water is SFR and multi-family customers at 89 percent, while the commercial accounts consume 6 percent and public usage at 5 percent.

Table 2.2: Aumsville Water Master Plan – April 2015 – Keller Associates

Table 1-7: Water Use Characteristics

Table 1-7: Water Use Characteristics			
Classification	Million Gallon Consumption		
	Ave. Annual Gallons		118,566,898
	Peak Monthly Gallons		18,319,000
	Gallons per Capita Daily -GPCD		81
	Peak - GPCD		144
	Gallons per day MG	**# Connections**	**% of total gallons**
Ave Gallons per Day	0.3417		
Peak Gallons per Day	0.6106		
Residential	0.311	1167	89.3
Commercial / Industrial	0.020	40	5.8
Operations	0.017	NA	4.9

Table 1-8: Gallons Per Capita Daily Comparison

Table 1-8: Gallons Per Capita Daily Comparison					
Gallons per Capita Daily					
2014	**2013**	**2012**	**2011**	**2010**	**GPCD ***
75	78	76	69	79	75
Information from Water Master Plan - Conservation Section 5.0					
2023	**2022**	**2021**	**2020**	**2019**	**GPCD ****
78	70	78	81	79	77
4%	-10%	3%	17%	0%	
* - GPCD taken from previous Water Master plan - 2010-2013, adjusted to average for year 2014					
** - GPCD is calculated using total gallons sold divided by approximate population for the year					

1.10 Interconnections with other systems: OAR 690-086-0140 (7)

Identification and description of interconnections with other municipal supply systems.

Currently, the City of Aumsville has no inter-ties with other water supply systems, no intergovernmental agreements or water supply contracts. The closest two water systems to the community will be the City of Salem, not reflective of City boundaries, but the main water transmission line is ≈ 1.4 miles, which source could be considered as an alternative water supply. The City of Stayton is approximately 5 miles southeast.

1.11 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 Aumsville's water system schematic was derived from their water master plan completed in 2014 by Keller Associates. The multi-page map illustrates wells, service lines, reservoirs, and appurtenances that are necessary for the water system to function. The multiple maps show the current service area and the urban growth boundary for future development and expansion. See Appendix B

1.12 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.

Each year the City of Aumsville sends an annual water report to OWRD, recording the total gallons pumped from October through September of the preceding year. The City of Aumsville also reads meters on a monthly basis, tracks water usage though every day task associated with water operations.

The City of Aumsville's annualized unaccounted for water over the past five-years is 4.8 percent. This five-year tracking of unaccounted for water loss is reduced from the figures shown in the 2015 Water Master Plan (WMP) indicating a 10 percent unaccounted for water.

Attributable to a higher level of water loss during the 2014 study was inaccurate meters and deteriorated distribution pipe. The leaks that are repaired are associated with service lines, those sections connecting the main line to the customer, consisting of copper and polybutylene. The City of Aumsville has diligently been replacing water meters with a goal of 100-150 units annually. Meter supply deficiencies have hindered meeting this goal. The leak detection program performed in 2017 and 2021 found small pockets of deteriorated lines, asbestos concrete in the center of the city, which are the focus of repairs.

The City of Aumsville, through normal operations of treatment operations, line flushing, fire hydrant testing and small leak repair, estimates an approximate 7.0 MG of water are accounted for every year. Referencing table 1-4 on page 10, supplies information about non-revenue, loss water percentages for each year 2019 through 2023. Discovered leaks are usually repaired within one week.

With annual raw water production at 132 MG (2019-23), 118 MG annual average consumed, and average operational water at 7 MG over the five-year timeline, the unaccounted-for water figured at under 5 percent. The City of Aumsville efforts on the asbestos and steel piping that make up ≈ 20 percent of the distribution system will be the areas of significant loss.

SECTION TWO
WATER CONSERVATION ELEMENT

Water conservation activities contribute an important facet towards 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 that will show the greatest results.

City of Aumsville, having an under five percent un-accounted water, has continued its focus on water consumption and production from a managerial perspective. The WMP outlined in 2014 an average water loss of ten percent. The City of Aumsville will emphasize various water conservation efforts which will include water system audits, leak detection, public education, and if workable, retrofitting of inefficient water devices. These activities are pending the availability of labor, time, and financial resources.

2.1 Progress Report: OAR 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 water management conservation plan for the City of Aumsville is the third document sent to OWRD, as the first WMCP was approved in 2005. It is the intent of both the City Council and staff to continue to enhance the ideals of conservation through system operational reviews, customer knowledge, and implementation of conservation measures. According to the 2015 WMCP benchmarks are:

- All water service connections are metered.
- Monthly audit of water produced versus water sold.
- Leak detection in 2017/21 was determined by the number of leaks repaired.
- Water rate structure is designed on consumption.
- Public Education – School Program 2020.
- 10-15 average annual leaks repaired.

These benchmarks have been completed and will continue to be part of the routine tasks performed by the City of Aumsville.

2.2 Water Use Measurements and Reporting: OAR 690-086-0150 (2)

A description of the water supplier's water uses 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 found in this document is taken from the annual water use report that is due each year for the Water Resources Department. The City of

Aumsville adheres to the measurement and reporting requirements found in the Oregon Administrative Rules Chapter 690, Division 85. Flow meters are placed on all wells, the outlet on the reservoirs, booster station, and service connections on all customers.

2.3 Measurement Already Implemented: OAR 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.

The City of Aumsville has listed conservation items currently being in subsection 2.1 and will continue efforts in the future. There are no other conservation measures being implemented. The City of Aumsville does not supply water under contract to any entity. Water is only supplied to the community through the distribution system.

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.

2.5 Unmetered / Unauthorized Usage: OAR 690-086-0150 (4) (a)

An annual Water Audit that includes a systematic and documented methodology for estimating any un-metered authorized and unauthorized uses, and an analysis of the water supplier's own water use to identify alternatives to increase efficiency.

The City of Aumsville reviews water production and consumption figures to compare and define total actual losses, with this single step being the primary effort in an annual water audit. When the figures are skewed, operators attempt to discover water leaks.

System-wide, distribution lines are inspected through routine travels by the water department's crew looking for leaks, illegal connections, misuse of fire hydrants or vandalism. These efforts lead to understanding the real water losses. The city is unaware of any unauthorized usage, (stealing water), currently all water usage is metered. See Table 2-1: Water Loss Control Activity Matrix on page 23 lists those highlighted items the city will undertake over the next five years.

Benchmark: These operational procedures, (daily distribution system inspected) for unmetered and unauthorized uses will be ongoing as one in the set of benchmarks for this WMCP. Additionally, the city will work with the fire department to better define water usage during training.

2.6 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 Aumsville is a fully metered water system which includes meters on the five wells and consumer connections. Currently, the water system is considered fully metered. Production meters are read daily, and consumer's meters read monthly.

2.7 Meter Testing and Maintenance: OAR 690-086-0150 (4) l

A meter testing and maintenance program.

The City of Aumsville biggest effort towards conservation is the continued replacement of customer meters. Testing of smaller meters is neither efficient for time nor dollar costs. Newer meters have a minimal test and maintenance requirement, as the meters have no moving parts, the electronics are battery operated. The City's goals towards replacing meters every month are ongoing. Prior to meter replacement, meter testing was performed on an as needed basis, which was triggered by a discrepancy in a meter reading between two months. Well meters are tested through the booster station and flows from the reservoirs.

The main benchmark, the City of Aumsville will routinely replace service meters, with a goal to increase the meter replacement rate if feasible.

2.8 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 Aumsville has in place a rate structure designed with a base rate and the amount of water consumed, which was implemented in 2023. Water rates and authorized charges are set by resolution of the Council and reviewed annually. See Appendix E

2.9 Leak Detection Program: OAR 690-086-0150 (4) (e)

If the annual water audit indicates that system leakage exceeds 10 percent.

2.9.1 Factors of Loss and Remedies OAR 690-086-0150 (4) (e) (A)

Within two years or approval of the water management conservation plan, the water supplier shall provide a description and analysis identifying potential factors for the loss and selected action for remedy.

The City of Aumsville currently has a five-year annual unaccounted for water loss average at 4.8 percent. The primary potential factor for any water loss is through leaks. Leaks are repaired expeditiously, with a goal of one week from discovery of the leak. The city will track the estimated flows of the water leaks.

A second factor that may contribute to water loss is aged meters, which tend to read less water than actual flows. Meters are being routinely replaced.

The City of Aumsville will apply the following benchmarks during the 2025-2030 fiscal years.

- *Track water flow estimates when a leak is repaired.*
- *Review proper application of meters for classification of user – initially confirm.*
- *Continue to review billing software for accuracy.*

Perform annual leak detection in areas noted by Public Works Supervisor.

2.9.2 Systematic Leak Evaluation OAR 690-086-0150 (4) (e) (B)

If actions identified under subsection (A) do not result in the reduction of water losses to 10 percent or less, within five years or approval of the water management conservation plan, the water supplier shall, **(i)** develop and implement a regularly scheduled and systematic program to detect repair leaks in the transmission and distribution system using methods and technology appropriate to the size and capability of the municipal water supplier or a line replacement program detailing the size and length of pipe to be replaced each year; or **(ii) –** develop and implement a water loss control program consistent with American Water Works Association standards.

The City of Aumsville has diligently performed routine tasks to lower the percentage of unaccounted-for water. With a less than five percent water loss, the performed tasks have proven useful as the previous WMCP noted a four-year water loss at ten percent. With the consistent unaccounted-for water loss under ten percent, the City Public Works will continue those efforts that prove effective reduction in water loss.

2.10 Public Education Program: OAR 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.

Currently, the City of Aumsville supplies information on drinking water in the annual Consumer's Confidence Report, the monthly newsletter, noting both conservation ideas, and notes from Public Works regarding water, wastewater and the environment.

The City of Aumsville will continue the efforts of water conservation by supplying more information to the consumers through distribution of brochures (flyers) encouraging the use of water saving devices and gardening techniques.

General information from water conservation bulletins provided in the links below will offer those standard ideas that can be place in the newsletter, printed and distributed from City hall.

https://www.oregon.gov/owrd/WRDPublications1/Saving_Water_Municipal_Systems.pdf
https://www.oregon.gov/owrd/WRDPublications1/Saving_Water_Inside.pdf
https://www.oregon.gov/owrd/WRDPublications1/Saving_Water_Outside.pdf

The benchmark for the City of Aumsville will continue to support the education of its community regarding water conservation by using the City's newsletter.

2.11 Expansion / Diversion: OAR 690-086-0150 (5)

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), 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.

Currently the City of Aumsville does not propose to expand diversion of water under an extended permit for the primary reasons; a) the City of Aumsville single remaining permit G-13679, with a maximum allowance of 0.446 CFS (200 GPM) is used to the fullest extent. b) the City of Aumsville does not serve a population greater than 7,500, c) the City of Aumsville has been managing the existing water sources in compliance with various regulations established by both State and Federal Agencies.

2.12 Technical and Financial Assistance: OAR 690-086-0150 (5)(a)

Technical and financial assistance programs commensurate to the size of the municipal water supplier to encourage and aid residential, commercial, and industrial customers in implementation of conservation measures.

The City of Aumsville, serving over 4,000 population is challenged to support financially, conservation programs when dollars are better used elsewhere. With their website, the City will provide technical or financial ideas pertaining to behaviors in water use through links that support specific classes of water users. The City of Aumsville does not have allocated funds to support water rebate program for conservation equipment. Ideas for implementation for the 2025-2030 fiscal years will include dialogue with the larger water users about:

- Conservation ideas at their facilities.
- Water saving equipment ideas for commercial customers.
- Ground maintenance and drought tolerant plants.
- Look at irrigation schedules for efficiency, or potential xeriscaping.
- Provide links to commercial accounts.

https://home-water-works.org/water-conservation-tips/work

The above bulleted points will be the benchmarks established for technical and financial assistance.

2.13 Retrofitting/Replacement: OAR 690-086-0150 (5)(b)

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 adaptation or replacing of an older water fixture with one that is more water efficient and offers considerable water saving potential in the home and business. The City of Aumsville will keep a small basket of aerators at (50 items) and low flow shower heads (efficient fixtures) (50 items) at city hall for its citizens. This will be allotted on a first served basis. If the program seems to be in demand, the city will continue the efforts ore shift to another approach.

The primary effort towards using water conservation devices will be found in brochures and links on the City's website. The City of Aumsville will add information on fixtures to the existing education program to encourage its customers in using more efficient, water conserving devices.

The benchmarks for the subsection will continue to supply a basket of aerators and low flow showerheads and more detailed information on the City's website.

2.14 Rate Structures: OAR 690-086-0150 (5)(c)

Adoption of rate structures, billing schedules, and other associated programs that support and encourage water conservation.

In subsection 2.8, explains the rate structure in effect in July 2023. This structure is aligned to better support water conservation. Currently the rate structure is a base rate (including 7,000 gallons) for the monthly service and extra water is charged using a flat block rate. Each block of water consumed is measured in 1,000 cubic feet, with a $4.55 per unit. See appendix E Water Service Charges

2.15 Recycle / Reuse: OAR 690-086-0150 (5)(d)

Water reuse, recycling, and non-potable water opportunities; and

For the City of Aumsville the design of the wastewater system as part of the water reuse and recycling. The City of Aumsville irrigates ≈ 55.0 acres on a 75-acre parcel south of the City and Mill Creek. The irrigation site is buffered with 70-75-foot-wide strips of land. Total effluent applied to the acreage each year is ≈ 36-40 MG.[1]

1 – Table 9 Acreage Requirements for Potential Flows and Crops – Recycled Water Use Plan – Westech Engineering – May 2021

2.16 Other Conservation Measures: OAR 690-086-0150 (5)(e)

Any other conservation measures identified by the water supplier that would improve water use efficiency.

The City of Aumsville has not found any other conservation measures that would improve water use efficiency.

2.17 Conservation Summary

Conservation measures chosen by the City of Aumsville will be:

- Review monthly usage of customer's billing for discrepancies.
- Monthly water audit of water produced versus water sold.
- Continue to promote conservation through the City's webpage and newsletter.
- Track water flow estimates when a water leak is repaired.
- If water loss exceeds ten percent over three months, schedule leak detection.
- Maintain a water rate structure based on consumption.
- Work with commercial entities to ways to reduce water consumption.
- Provide low-flow devices to citizens ≈ 50 items.

In the table on the following page, are activities coordinated with the above bulleted items based on a timeline from short-term though long-term approach in conservation. Actions taken by the City of Aumsville are highlighted with footnotes explaining the step taken towards completion.

Table 2-1: Water Loss Control Activity Matrix

Table 2-1: Water Loss Activity Matrix					
Water Audit		Apparent Loss Control		Real Loss Control	
Time	Activity	Time	Activity	Time	Activity
Highlighted Task will be implemented over five-years					
S		**S**	Distribution of brochures on water saving tips	**S, L**	Display worn out water system components
	Top Down	**S**	Verify production meters for accuracy	**S**	Review past records[1,2]
					Target Range < 15%
					Target Range < = 10%
M	Bottom Up	**S**	Flow chart customer billing	**S**	Customer Policy Leaks [3]
Some tasks are required if water system exceeds 15 percent water loss					
Ongoing		**PRIORITY**	Technical Assistance [4]		
		S, L	Water Rate Study		
		S	Meter Testing - Replace	**S**	Leak Detection [5]
			Larger Meters		Initial Leak Detection
			Sample Residential Meters		Ongoing Leak Detection
		S	Audit Billing	**S**	PSI Review - Excess
		M	Install Upgrade Production Meters	**S**	District Meter Area [6]
		M	Policy for Unauthorized Use	**M**	Create annual leak detection program
		M	Auto Meter Read Program Investigation	**M**	Leak Noise Detectors
		L	Install AMR/AMI System	**L**	Maintenance Information System
		L	New Billing System	**L**	Section Distribution System [7]
		L	Large Customer Meter Replacement	**L**	CIP for infrastructure [8]
		L	Line Pressure Testing	**L**	Line Replacement Program
S - short-term, M - medium-term, L - long-term					
1 - Maintenance records on line repairs, set target range compatible with existing, future resources					
2 - Volumes of leaks documented					
3 - Review billing software, policies for customer leaks, incentives to use less water					
4 - Water efficient fixtures, large water user audits, rebates for water efficient appliances,					
5 - Annual leak detection, using acoustics, correlators, when water loss exceeds 10 % for 3 consecutive months					
6 - Isolate area for one hour leak analysis					
7 - Develop District Management Areas - if feasible					
8 - Capital Improvement Plan for short term small projects -funded by rates					

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 looking for an alternative water supply. Conservation measures and a secondary supply, or a combination of the two are the most important tools water suppliers can use to 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: OAR 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.

Regarding supply deficiencies, the City has been fortunate in not having to deal with capacity limitations relating to the groundwater within the past 10 years. There has been an attempt to drill a new well, yet the efforts proved to be limited, and the well site was abandoned. The pumping capacity of the five wells delivered a peak rate of 385 GPM and an average rate of 174 GPM. A combined total pumping capacity of 800 GPM, but with the largest well offline, the capacity drops to 350 GPM, less than the peak requirement which is viewed as a capacity limitation.

With just over 1 MG of storage and a new 1 MG reservoir currently under construction and scheduled for completion in early January 2025, daily demand at 0.32 MG, the City of Aumsville could curtail minimum usage to the community to maintain almost six (6) days of supply during a water supply shortage, or a mechanical interruption. Figures assume reservoirs are operating at 80 percent.

As with any City of any size, vulnerability in the event of an emergency or a catastrophic condition would hinder delivery of water under normal consumptive conditions. Annual vulnerability assessments should be performed to mitigate any concerns.

3.2 Stages of Alerts: OAR 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 Aumsville has adopted a five-level approach for curtailment of water use, with the primary goal of keeping adequate supplies to meet essential uses such as drinking, cooking, sanitation, and fire flow. A secondary goal is to support normal flows for all customers 24-hours per day, during all conditions.

The five levels of alert will be named as mild, moderate, serious, critical and emergency. Events causing activation of this WMCP would include, but not limited to the following:

- Mechanical or electrical malfunctions of pumping equipment.
- Interruption of the local power company supply for a duration of time (2 days) unless emergency back-up power restores water production.
- Abnormal weather conditions, extreme hot weather, consumption of more water, or a decline is production capabilities from either the Church well or the Boone Well #2.
- Declaration of a drought for their area by the Governor by Oregon Revised Statute 536.720.
- Natural disasters that damage critical infrastructure prevent the water system to work under normal conditions.
- A deliberate act of contamination of water at various points in the water system.

3.3 Alert Triggers: OAR 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

With an ability to quickly know production capabilities (or lack of), the City of Aumsville approaches water curtailment primarily from the production perspective, as this method can swiftly discern limitations in supply. The approach is multi-facet:

- Production cannot sustain the demand in consumption.
    - High usage or water loss is considered – investigated.
- Storage levels diminishing more rapidly.
    - Customer usage increases, or major leak is detected.

Table 3-1, next page details those triggers that put in motion the curtailment actions under each stage of alert.

Table 3-1: Levels of Alert Triggers

Table 3-1: Levels of Alert Triggers
Mild Alert Level
♦ Water usage reaches 80% of capacity (water production) for three consecutive days.
♦ Construction projects that impede full capacity flow of system for more than 3 days.
♦ A production shut down of wither the Church or Boone #2 well, production is below 80%.
♦ Mainline burst reducing delivery capabilities.
Moderate Alert Level
♦ Water use reaches 85% of capacity (water production) for three consecutive days.
♦ Pumping capacity is reduced to 80% of normal production.
♦ Normal flow in water system is reduced to 80% of full flow.
♦ Primary supply production capacity is reduced to less than 75% capacity, 600 GPM.
Serious Alert Level
♦ Water use reaches 90% of capacity (water production) for three consecutive days.
♦ Pumping capacity is reduced to 70% of normal production, 560 GPM.
♦ Normal flow in water system is reduced to 70% of full flow.
♦ The area is declared in a severe drought per declaration by the Governor.
Critical Alert Level
♦ Water use reaches 90% of capacity (water production) for five consecutive days.
♦ Pumping capacity is reduced to 60% of normal production, 480 GPM.
♦ Normal flow is reduced to 50% in water system.
♦ A natural disaster that incapacitates the water system or contaminates the water sources.
♦ Intentional act causing long-term disabling of the water system or sustained deficit of water.
Emergency Alert Level
♦ Water usage and production ability are similar or inverted.
♦ A natural disaster that incapacitates the water system or contaminates the water source.
♦ Normal production capabilities are off-line for three consecutive days.

3.4 Curtailment Actions: OAR 690-86-0160 (4)

A list of specific standby water uses 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 conducted by the City of Aumsville City Administrator with aid from the Public Works Director. Specific list of triggers at each stage outlines some of the causes for interruption in water.

The City may revise specific restrictions on water use, as circumstances in water delivery can change quickly.

Table 3-2: Curtailment Actions

Table 3-2: Curtailment Actions
Low Level Action (1)
The Public Works Director/ City Manager, following the procedures proven in the City of Aumsville's policies, will issue a general request for a voluntary reduction in water use by all water users. The request is made at a time when there is a strong sign that the City's water supply or production capabilities will be reduced below the capacity or maximum flow is reduced so not to supply adequate service to all water customers.
The request will include a summary of the current water situation, the reason for the requested reduction, and a warning that mandatory cutbacks will be necessary if the voluntary measures do not sufficiently reduce water usage by 5-10 percent. The time for the voluntary reduction will be set up, showing the date and time, the reduction will be concluded.
Mild Level Action (2)
A second step would be to implement mandatory reduction in water use by all consumers. This step will ensure normal capacity flows during reduced production or delivery schedules and 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.
The goal of this step is to support 95% flow rates using a 10% reduction.
Moderate Level Action (3)
The City of Aumsville will put in place the following:
♦ No flushing of system lines unless essential for water quality improvement.
♦ 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.
♦ Bulk water sales/usage will be stopped until further notice
The goal is to support 85% flow rates using a 20% overall reduction in usage.
Critical Level Action (4)
The City of Aumsville will put in place the following:
♦ Possibly 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.
The goal is to support a 75% flow rate using a 30% overall reduction in usage.
Emergency Level Action (5)
It is not "if" an emergency is going to occur, but when an emergency will take place. There are several 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 supply the minimum of 70 GPCD at a location on the distribution system.
♦ Distribution points are set up to provide a minimum of 70 gallons per day person per day

Table 3-3: Action Levels of Curtailment

Table 3-3 Action Levels of Curtailment			
Water Curtailment and Reduction Goals			
Shortage Conditions	Level	Reduction Goal	Type of Rationing
5%	1	10%	Voluntary
10%	2	10%	Mandatory
15%	3	20%	Mandatory
25%	4	30%	Mandatory
Water System Failure	5	75-80%	Mandatory

SECTION FOUR

WATER SUPPLY ELEMENT

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

4.1 Delineation - 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 and future service area for the City of Aumsville has been recognized under the Marion County's Comprehensive Plan (MCCP). This map indicates the surrounding area of the City of Aumsville is zoned for acreage residential, special agricultural, with small parcels listed as urban transition.

The maps in Appendix B show both the current City limits as well as the urban growth boundary. The Portland State University-Population Research Center (PSU-PRC) report, June 2021, uses the cohort component model and housing unit method to determine the population projections. The 2021-2071 statistics forecast found the county's average annual growth rate (AAGR) through the year 2045 would average 0.7 percent annually. For the City of Aumsville, the AAGR is 1.4 percent through 2045.[1] Per PSU-PRC, the anticipated population for the City of Aumsville will be 6,250 in 2045, figures estimated for determining water service requirements.

The city has 820 acres within the UGB, of which 700 acres are inside City limits, and development is anticipated to occur as fill-in within the city limits. For planning purposes through 2035, it is unknown if any change to the UGB will occur. Of the 700 acres, 430 acres are zoned residential, single family and multi-family or 55 percent of available acreage.[2]

Planning projects directly connected to City services include an apartment complex (174 units) and a hotel near the upgrade interchange along highway 22, northeast of the city. These projects as an example, will substantiate the increase in water requirements.

1 - https://www.pdx.edu/population-research/past-forecast– - Region–4 - Marion County
2 – https://www.aumsville.us/development/page/master-plans-and-sdc-methodolog– - Aumsville Wastewater Facilities Plan

Table 4-1: Population Forecast

Table 4-1: Population Forecast						
YEAR	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**
Marion County	345,920	369,983	385,366	397,723	407,818	416,327
Population + -	24,063	15,383	12,357	10,095	8,509	Average [1]
% change *	7.0%	4.2%	3.2%	2.5%	2.1%	0.76%
Population *						
	2020	**2025**	**2030**	**2035**	**2040**	**2045**
Aumsville	4,326	4,581	5,007	5,423	5,835	6,250
Population + -	255	426	416	412	415	Average [2]
% change *	1.11%	1.70%	1.53%	1.41%	1.33%	1.42%
Note:						
* - % change from the figures forecasted by Portland St University - Population Research Center using 1.4% AAGR						
1- https://www.pdx.edu/population-research/middle-east-studies/population-forecasts - "General Information" link						
2- Anticipated growth is 77 persons annually or ≈ 32 water connections						
https://docs.google.com/spreadsheets/d/1bSikR44_Bnx4EtzAtFvviVNDsb8LT2jbiKb3IKBgwn4/edit?gid=1213866013#gid=1213866013						

4.2 Permit Usage Schedule: 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.

It is difficult to predict population forecast due to several factors that may distort the final outcomes. Using data compiled by PSU-PRC prediction for population estimates were factored to year 2045, based on annual growth of 1.4 percent annually. The second figure implemented in the forecast equation will the peak demand of 144 GPCD that is taken from the user averages in Table 1-5 calculated as peak demand over a single month, August 2023. Current Permit Usage is shown in Table 4-2.

Carrying the estimated population to year 2045, a total population served is estimated at 6,250 [1] users. Using the estimate of 6,250 population and the peak demand of 144 GPCD, will require an approximate peak water demand at 0.9 MGD or 1.40 CFS. The 0.9 MG equates to a 50 percent increase from the peak month of August 2023. Of the 3.003 CFS the City of Aumsville is requiring 1.40 CFS, accounting for 46 percent, leaving 54 percent of allowed water for future beneficial use.

1 -https://www.pdx.edu/population-research/population-forecast

Table 4-2, Current Permit Usage represents what has transpired over the past five years. The city has put to beneficial use 28.6 percent of the maximum allowed rate of permitted water.

The City has applied for an extension of time for Permit G-13679 to allow for additional time to develop this permit and put water to full beneficial use. The City expects that a final order approving this extension of time application will be issued prior to or in conjunction with approval of this WMCP update.

Table 4-2: Current Permit Usage

Table 4-2: Current Permit Usage

Permit No. (5)(a)	Certificate No. (5)(a)	Priority Date (5)(b)	Source (5)(c)	Maximum Allowed Rate (cfs) (5)(e)	Allowed Rate under Development Limitations (cfs) (5)(e)	Maximum Instantaneous Rate Diverted to Date (cfs) (5)(f)	% total Allowance
G-13679	NA	5/26/1998	Church Well	0.446	0.4460	0.5168	115.9%
GR-3543	GR-3258	8/30/1948	Lucas Well	0.1671	0.1671	0.0000	0.0%
G-6400	65917	3/24/1975	Boone 1	0.29	0.2900	0.0906	31.2%
G-11891	89924	12/18/1990	Res Well	0.40	0.4000	0.0252	6.3%
G-10223	96097	4/14/1983	Wells BP 2	1.40	1.4000	0.3897	27.8%
G-1051	96098	8/1/1958	Tower	0.30	0.3000	0.1366	45.5%
Totals				3.0031	3.0031	**1.1589**	38.6%

Shaded cells are indicating development limitations associated with permit, certificate

Actual total maximum allowed rate 1.03 CFS based on rotation of wells

Permit G-13679 - total allowance at 0.446 CFS - development limitation removed July 15, 2015 FO approving WMCP

Permit G-10223 - limited to 0.45 CFS - Lucas Well, 0.95 CFS Boone Park Well 2 and 1.40 CFS from Church well - not to exceed 1.40 CFS cumulative total

Res - Reservoir well

Certificate 96097 - Boone Park Well 2 and Church Well

G-6400, Certificate 65917 - Boone Park Well 1

4.3 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.

In preparing a schedule that proves to fully exercise each water right, the City of Aumsville is compelled to apply usage by forecasting and justifying the need for more water, if proven necessary. Using the calculations provided by the water system from the data covering January

2019 through December 2023, water demand estimates are based on population forecasts and gallons per capita per day, peak demand.

The forecasted rate at which the City of Aumsville will grow is founded on how the various classifications of users expand following the current alignment with the land comprehensive use plan. Historically with most small towns, the residential services account for approximately 90 percent of the total water served. The City of Aumsville is near the center hub for growth and managing speculated growth will change during the timeline of this WMCP. Total water needed in the future:

- Population Forecast – (2045) 6,250
- Peak Demand – gallons per capita daily 144
- Total million gallons per day - 0.90
- Total CFS - 1.40

Table 4-3: Water Demand Projections

Table 4-3: Water Demand Projections					
Aumsville	Projected Year				
	2025	2030	2035	2040	2045
Populations	4,581	5,007	5,423	5,835	6,250
Ave GPCD	**81**		Peak GPCD	**144**	
	Million Gallons per Month				
Ave. Month Demand	9,880,575	12,143,784	13,152,734	14,151,983	15,158,508
CFS	0.51	0.63	0.68	0.73	**0.78**
Max Month Peak Demand	18,319,000	21,699,369	23,502,233	25,287,761	27,086,291
CFS	0.945	1.119	1.212	1.304	**1.40**
Ave demand = 0.50 MGD with peak demand = 0.90 MGD for the year 2045					

4.4 Comparison - Future Needs and 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.

In Table 4-4, Applied Permit Forecasts, predicting water usage for future demand, comparing. to current conditions for both daily and peak consumptions, is speculating various unknown factors.

Through the year 2045, consistent with the figures discovered throughout this WMCP, the City of Aumsville will require 46 percent of the existing water rights or 1.40 CFS. This figure could

change if the criteria exercised in this WMCP changes, i.e., population boom, land use zoning from SFR to multi-family dwellings, or an increase in commercial water usage.

Comparison of both current average and peak demands, projecting forward 20-years show the increase required by the City of Aumsville. See Table 4-4: Applied Permit Forecasts.

Table 4-4: Applied Permit Forecasts

Table 4-4: Applied Permit Forecasts

Permit	Certificate	Allowed Rate Development Limitations CFS	Daily Usage CFS [1]	Peak Daily Usage CFS [1]	2025	2030	2035	2040	2045	Total % each permits
Population					4,581	5,007	5,423	5,835	6,250	
GPCD Peak Demand					**144**					
Projected Water Usage (CFS)*					1.02	1.12	1.21	1.30	1.40	
G-13679	0	0.4460	0.26	0.52	0.40	0.40	0.40	0.44	0.44	
GR-3543	GR-3258	0.1671	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
G-6400	65917	0.2900	0.06	0.09	0.09	0.12	0.13	0.19	0.26	
G-11891	89924	0.4000	0.01	0.03	0.03	0.10	0.13	0.12	0.00	
G-10223	96097	1.4000	0.18	0.39	0.30	0.25	0.25	0.25	0.40	
G-1051	96098	0.3000	0.06	0.14	0.20	0.25	0.30	0.30	0.30	
Totals		**3.00**	**0.57**	**1.16**	**1.02**	**1.12**	**1.21**	**1.30**	**1.40**	**0.00**

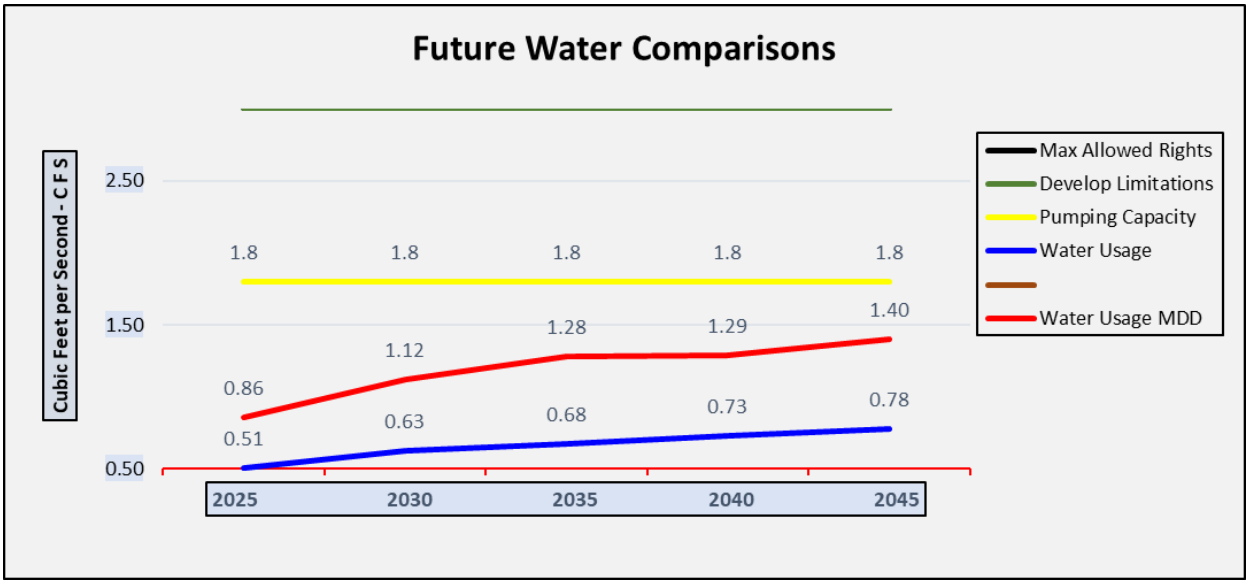
Grey shaded cells indicate permit and or certificate is at maximum limit.

1 - Ave and peak daily usage taken from figures used in this WMCP, using gallons per capita daily (GPCD), coverted to CFS

* - Total CFS is determined by peak demand GPCD, projected using anticipated populations for the timeline of this WMCP

Chart 4-1: Future Water Requirements:

Chart 4-1, provides the comparison of the projected required water for the City of Aumsville which is 1.40 CFS, (628 GPM) based on peak demand for the year 2045. The City of Aumsville's projected use of 1.40 CFS from the total availability of 3.003 CFS.



The City of Aumsville has situated itself using groundwater as its sole source. This source has been sporadic in quantity and is in an area deemed groundwater limited, restricting new water right permits to specific beneficial uses. Four of the five wells are used, and production capacities have maintained flows to meet current average and peak demands. Due to the inconsistency of new well production (<100 GPM), the city is aware of limited sources of water and emphasizes reduced water consumption to maintain reliability of the source.

4.5 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 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.

It is the goal of the City to keep lower consumptions of water through conservation methods prior to applying for more water rights. Given the total amount of allowable water, the City will not be looking to expand or start the diversion of additional water. The City of Aumsville, with its single permit, will look to extend or certify permit G-13679 since its full allowance has been proven.

The City has applied for an extension of time for Permit G-13679 to allow for additional time to develop this permit and put water to full beneficial use. The City expects that a final order approving this extension of time application will be issued prior to or in conjunction with approval of this WMCP update.

The City of Aumsville will consider future monitoring of all production water and delivery methods to keep beneficial use to the current water permit and certificates.

4.6 Interconnections: OAR 690-086-0170 (5) (b)

Interconnection with other municipal supply systems and cooperative regional water management; and

The City of Aumsville has no emergency inter-tie with any other entity as the distance to create an inter-tie is not financially feasible. The City of Aumsville has considered an intertie to the City of Salem, not reflective of City boundaries, but the main water transmission line for the City of Salem is ≈ 1.4 miles, which could be considered as an alternative water supply. The City of Salem provides surface water which can be significantly different in water chemistry, more information would need evaluating prior to this connection. The City of Stayton is approximately 5 miles southeast, again uses surface water as their source. The City of Aumsville is open to discussing the topic of regional water management for the benefit of all who choose to take part. Participation will be contingent on the time and resources needed to aid in a cooperative regional water management group.

4.7 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.

Through implementation of conservation steps, i.e., review of consumption cycles, routine water audits, rate settings, consumer informational packets, leak detection - repairs, and meter upgrades, the City of Aumsville has named conservation measures that are currently both practical and possible.

Future considerations implemented will focus on outside water efficiencies by promoting low water use landscaping, i.e., xeriscaping, limited turf areas, and timed watering practices. These steps will lower the overall demand on water consumptions, thus lowering the demand on the water sources.

4.8 Quantification of Maximum Rate: 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.

Expansion or initial diversion of water allocated under existing permit and certificates is not necessary for existing or future needs. Table 4-5 below shows usage rates as they relate to the permit or certificates. With a maximum quantity allowed at 58.22 MG, and current highest consumption month at 18.3 MG, the city is far below to maximum allowed rate.

Table 4-5 shows the water allowance limitations at 3.003 CFS (1,347 GPM) and with current average daily usage (0.49 CFS) (219 GPM) and peak demand (0.94 CFS)(421 GPM) the City of Aumsville will continue to put forth an effort to manage water usage in a responsible manner. The figures prove production, usage and unaccounted for water are successful work in

progress, particularly when measured using unaccounted-for water at under 5 percent. The City of Aumsville does not intend to expand diversion of its groundwater permit to meet the 10 and 20 year demand projections.

Table 4-5 Permit Usage Rates

Table 4-5: Permit Usage Rates				
Permit # Certificate #	**Maximum Allowed Rate (cfs) [1]**	**Maximum Rate Allowed (CFS) [2]**	**Maximum Rate Allowed (GPM)**	**Monthly Maximum Quantity Allowed (MG)**
G-13679	0.4460	0.4460	200	8.65
GR-3543	0.1671	0.1671	75	3.24
G-6400	0.2900	0.2900	130	5.62
G-11891	0.4000	0.4000	180	7.76
G-10223	1.4000	1.4000	628	27.14
G-1051	0.3000	0.3000	135	5.82
Total	3.00	3.00	1348	58.22
1- No development limitations, 2- With development limitations,				

4.9 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

Under OAR 690-086-0170(7), if mitigation is required for expansion or initial diversion of water under an existing permit, the water supplier is to describe mitigation actions it is taking to comply with legal requirements of the Endangered Species Act, Clean Water Act, and other applicable state or federal environmental regulation.
As described above, the City of Aumsville currently does not intend to expand diversion of its groundwater permits to meet the 10- and 20-year demand projections described above.

4.10 Acquisition of 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 (3), an analysis of alternative sources of the additional water that considers availability, feasibility, and likely environmental impacts and he schedule for development of the new sources of water. The analysis shall consider the extent to which the new for new water rights can be eliminated through.

It is not necessary for the City of Aumsville to attain new water rights within the next 20-years, as the City is currently forecasted to use 1.40 CFS of 3.00 CFS or 46 percent of allowed water

through the year 2045. If the estimates hold firm with the trend used throughout this WMCP, the City should retain a balance of unused allowed water of 1.6 CFS (718 GPM).

4.11 Implementation of Conservation Measures: OAR 690-086-0170 (8) (a)

Implementation of conservation measures identified under OAR 690-086-0150.

The City of Aumsville is charged with the conservation and management of the State's water. Through a series of steps outlined in section 2, the City of Aumsville currently meets all the requirements in the following manner. Annual Water audit, full metered system (replacement of new meters continuing), leak detection and repair, rate structure that encourages conservation and a public education program. The primary measurement in water management is focused on the percentage of unaccounted-for water. Future progress reports will prove efforts of the City to maintain said percentage at under ten percent.

4.12 Cooperative Regional Water Management OAR 690-086-0170 (8) (b)

Interconnection with other municipal supply systems and cooperative regional water management; and

The City of Aumsville is strategically found between two larger municipalities, but relating to regional water management and interconnections, it is physically feasible to develop an inter-tie with any entity and conversations have been conducted, but additional factors must be considered. The City of Aumsville's Council will be open to discussions with regional entities to keep abreast on the growth of and demand of water usage in the area.

4.13 Other Conservation Measures 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.

The City of Aumsville has no other conservation measures that would provide water at a cost that is equal to or lower than the cost of other identified sources. Sources proven adequate in both quantity and quality, currently and during the timeline of this WMCP. The city, using its resources in a practical manner, will look at changing the public educational information routinely, with options such as xeriscaping, using less to no running water for numerous activities.

4.14 Conservation Schedule – Cost: OAR 690-086-0130(7)(a)

If during the next 20 years the maximum rate of water diverted under an extended permit will be greater than the maximum rate authorized for diversion under the extension or previously approved water management conservation plan, a) the plan includes a schedule for development of any conservation measures that would provide water at a cost that is equal to or lower than the cost of other identified sources, unless the supplier has provided sufficient justification for

the factors used in selecting other sources for development or the supplier serves a population of less than 1,000;

The City of Aumsville will not expect the need to divert more water beyond the maximum rate authorized under the final order approving the WMCP. Additionally, the efficiency which the City of Aumsville supplies water to its customers (reducing the percentage of unaccounted-for-water), reducing the impact on it raw water source, will prove more economical as the upgrades to the meters, distribution system and the many conservation measures already employed. The City of Aumsville will not be requesting Greenlight water.

4.15 Justification of Source(s) OAR 690-086-0130(7)(b)

Increase use from the source is the most feasible and appropriate water supply alternative available to the supplier; and

The City of Aumsville's sources are the most feasible and appropriate supply. The City of Aumsville has only considered a possible inter-tie with the City of Salem's transmission pipeline, as an alternative supply source. The City of Salem uses surface water as its source which is drastically different from groundwater. Compatibility, treatment, and blending of the two sources may be more challenging and costly. The City of Aumsville will not be requesting Greenlight water.

4.16 Mitigation Requirements: 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 water sources are primarily focused on the quantity or lack of water within the area. OAR 690-086-0140(5)(i) addresses stream-flow dependent species, which the City of Aumsville only uses groundwater as its sources. The area is adjacent to a "limited" groundwater area, which restricts new water right permits to specific beneficial uses. The City of Aumsville will not be requesting Greenlight water.

Greenlight Water Worksheet

B. *(**NOTE**: Water suppliers are encouraged to include this worksheet as part of their WMCP. Use additional sheets as necessary***.** Does the water supplier hold any extended water use permits?

X **Yes** **No**

If **NO**, stop. A Greenlight Water request does not apply.

If **YES**, list the extended permit number(s) and indicate the maximum instantaneous rate of water allowed by the permit:

Permit Number	**Instantaneous Rate of Water Allowed by Permit (*in cfs or gpm*)**
G-13679	0.446 CFS – 200 GPM

2. Do the extended permit(s) have a Development Limitations condition imposed by a final order approving the Permit Extension **or** a previously submitted WMCP that freezes the quantity of water that can be diverted under the extended permit?

Yes X **No**

If **NO**, stop. A Greenlight Water request does not apply.

If **YES**, list the extended permit number(s) and indicate the maximum instantaneous rate of water allowed under the Development Limitations condition established by the Permit Extension or previously approved WMCP:

Permit Number	**Development Limitations** **Instantaneous Rate of Water Allowed by Final Order approving a Permit Extension or previous WMCP. (*in cfs or gpm*)**

3. Does the water supplier anticipate needing to divert water under an extended permit(s) at an instantaneous rate that **is greater than** the amount specified in the Development Limitations condition (established by the Permit Extension **or** previously approved WMCP) to meet its projected 20-year water demands?

□ **Yes** X **No**

If **NO**, stop. A Greenlight Water request does not apply.

B. If **YES**, Items **A** and **B** below must be addressed in the water supplier's WMCP being prepared for submitta**.** Identify the maximum instantaneous rate and the maximum monthly volume of water that will be needed under the extended permit(s) for the next 20 years to meet the water supplier's projected demands:

Permit Number	**Greenlight Water Request**	
	Maximum Instantaneous Rate of Water (*in cfs or gpm*) Anticipated to be Diverted to meet 20-year Demands	**Maximum Monthly Volume of Water *(in million gallons*) Anticipated to be Diverted to meet 20-year Demands**
Total		

Greenlight Water Worksheet *(…continued)*

B. In the spaces provided below, describe how the water supplier has satisfied each of the following criteria:

• **OAR 690-086-0130(7)(a)** The plan includes a schedule for development of any conservation measures that would provide water at a cost that is equal to or lower than the cost of other identified sources, **unless**: ▪ the supplier has provided sufficient justification for the factors used in selecting other sources for development; **or** ▪ the supplier serves a population of less than 1,000.
NA
• **OAR 690-086-0130(7)(b)** Increased use from the source is the most feasible and appropriate water supply alternative available to the supplier.
NA
• **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.
NA

Appendix A: Notice of WMCP

To:

- Marion County Planning Department – Brandon Reich – 503.566.4175
    - planning@co.marion.or.us
- Region 16 Water Master – Greg Wacker – 971.719.6262
    - greg.wacker@water.oregon.gov
- City of Sublimity – Alan Frost – 503.769.5475
    - subCityshop@wvi.com
- City of Stayton – Jennifer Siciliano – 503.769.2998
    - j.siciliano@staytonoregon.gov

RE: Water Management Conservation Plan (WMCP)

To Whom It May Concern:

Following rule 690-086-0125(5), notification of local governments of the completion of our WMCP, please find an e-copy attached in this e-mail for your review. Any comments on the plan can be sent by a replied e-mail and will be placed in the copy that will be sent to the office of Oregon Water Resources Department.

Please provide a reply within thirty (30) days or sooner of receiving this e-mail so we may move forward with this project. We appreciate the time spent under review. Please send any questions or comments to Matt Etzel, Assistant Public Works Director at metzel@aumsville.us

Sincerely,

Matt Etzel

City of Aumsville

Comments from local affected governments:

Alan Frost – City of Sublimity, no comments currently.

John Speckman – Marion County reply

MARION COUNTY PUBLIC WORKS

October 2, 2024

Subject: Aumsville Water Management Plan
Via electronic mail to: metzel@aumsville.us

Dear Mr. Etzel

Thank you for providing a draft copy of the Water Management and Conservation Plan for the City of Aumsville. Oregon Administrative Rule Chapter 690, Division 86 requires that affected local governments be provided an opportunity to review the plan for consistency with their local comprehensive land use plan prior to the city submitting a draft plan to the Oregon Water Resources Department for review.

The Marion County Comprehensive Plan (MCCP) Urbanization Element, Environmental Goals encourage planning that does not exceed the capacity of water, energy, air, and other resources. In addition, the MCCP Environmental Quality and Natural Resources Element, Goal C strives for the provision of an adequate quantity of water for beneficial uses within the county, including water for domestic, municipal, industrial, commercial and recreation uses. Goal D emphasizes the significance of educating property owners about the importance of the use of their property for water quality and quantity and encourages water conservation practices to hold water demand to a minimum through a public information program.

The Water Management and Conservation Plan for the City of Aumsville is consistent with the Marion County Comprehensive Plan, as both plans recognize water to be a significant resource, encourage the provision of adequate water for residents' use, and support conservation practices when necessary.

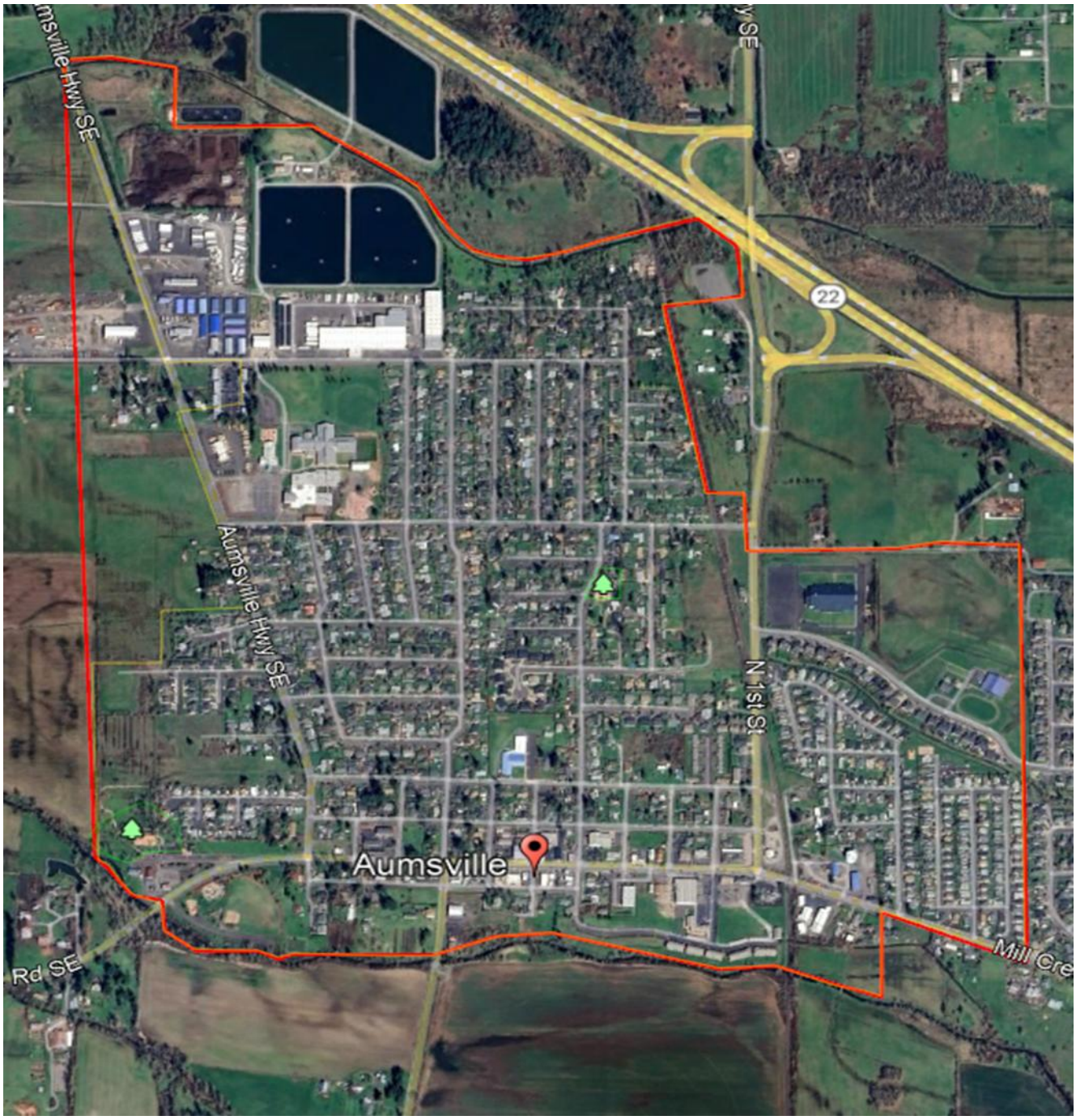
Please do not hesitate to contact me if you have any questions.

Sincerely,

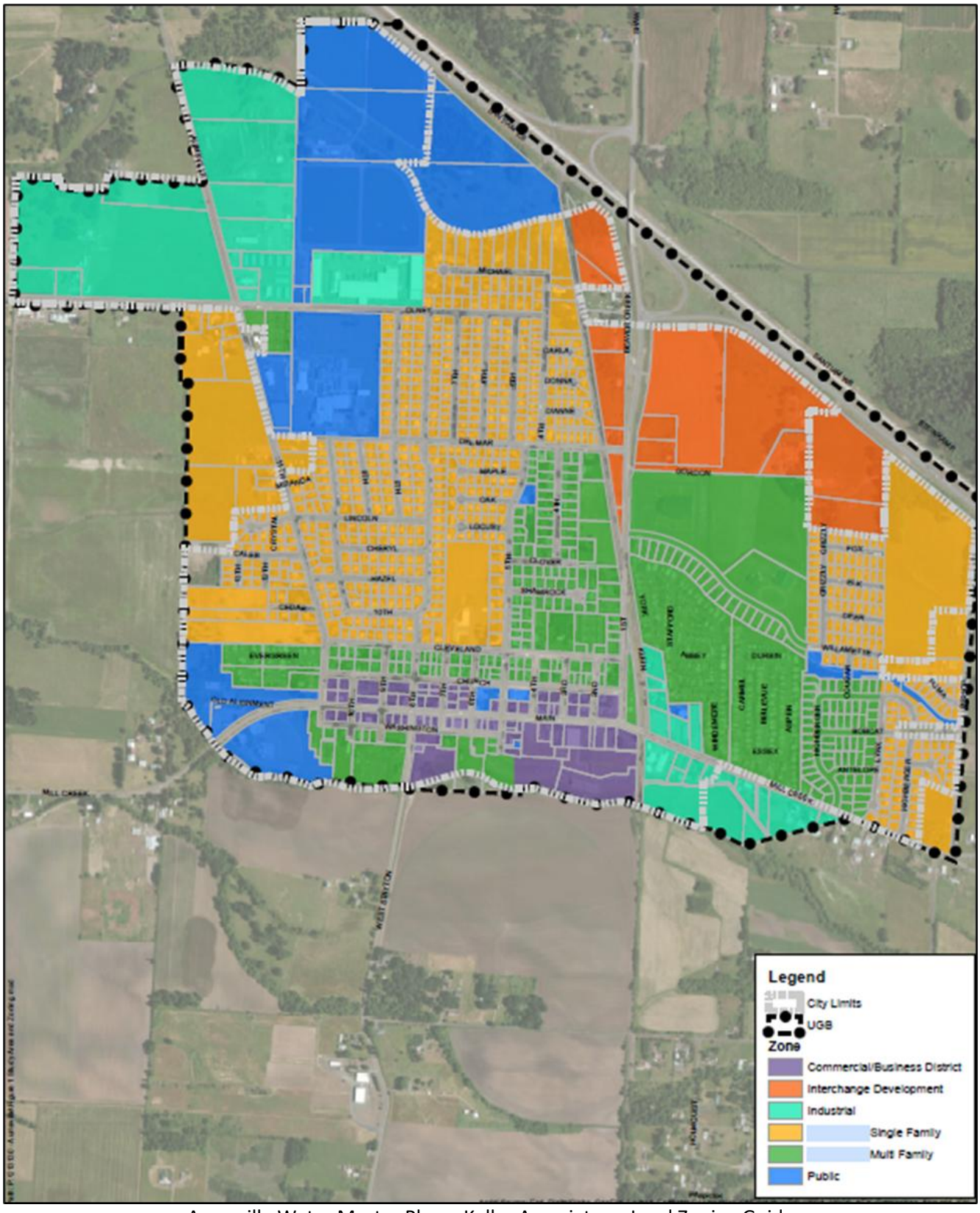
John Speckman

John Speckman
Associate Planner
Marion County Planning Department
5155 Silverton Rd NE
Salem, OR 97305

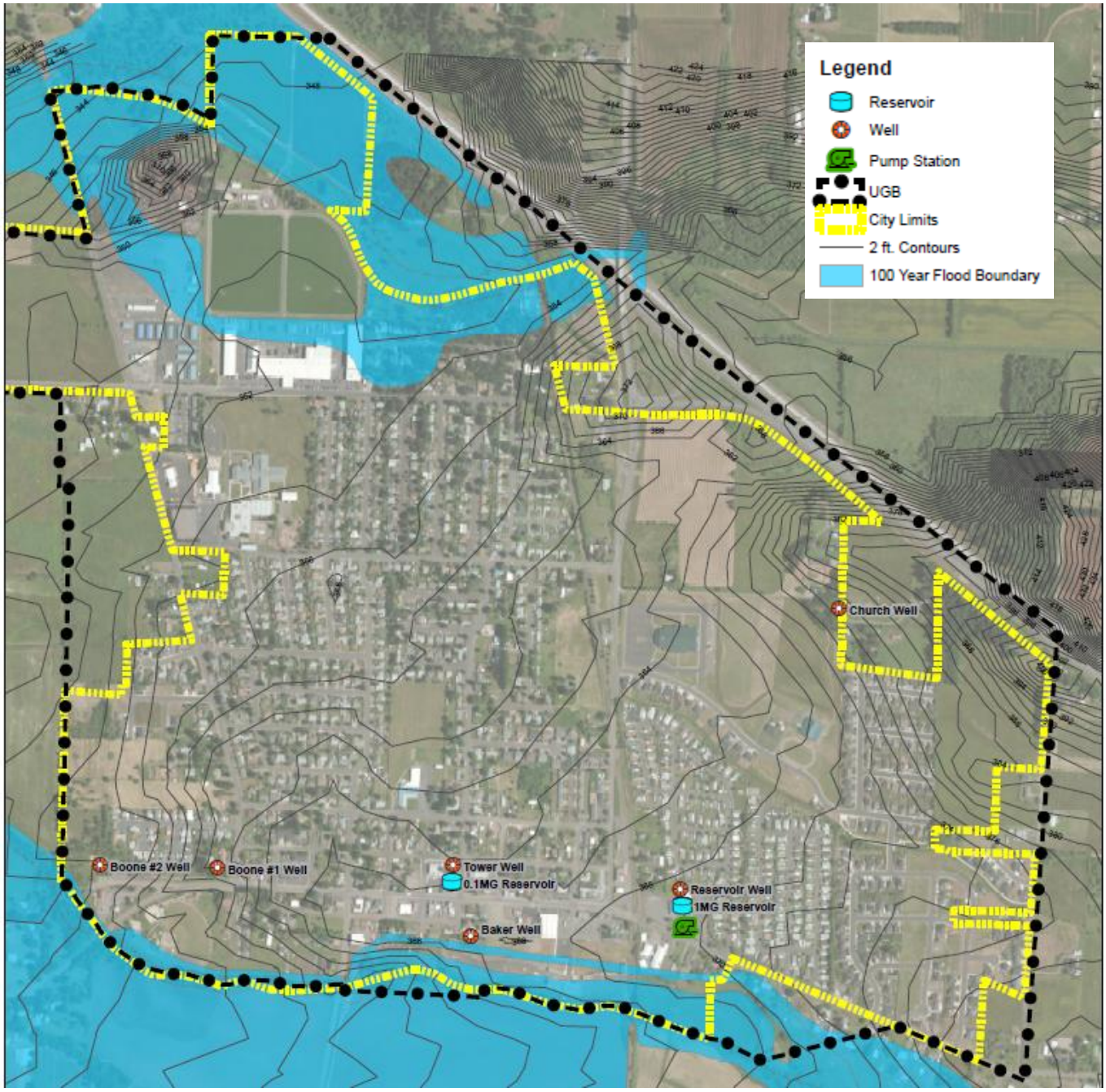
Appendix B: City Land Use Information

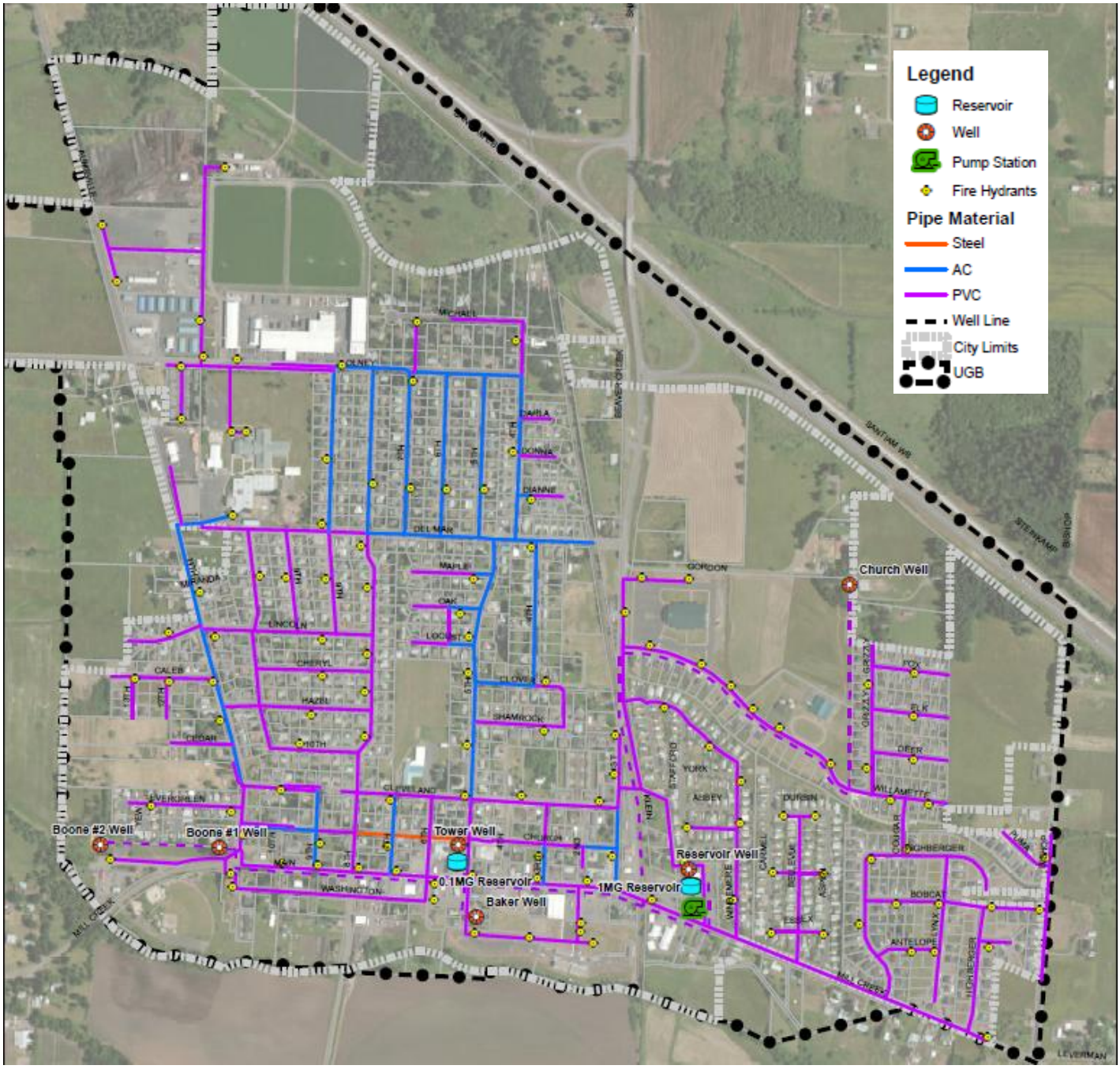


Red line showing urban growth boundary.



Aumsville Water Master Plan – Keller Associates – Land Zoning Guide


Legend
Reservoir
Well
Pump Station
UGB
City Limits
2 ft. Contours
100 Year Flood Boundary
Church Well
Boone #2 Well
Boone #1 Well
Tower Well
0.1MG Reservoir
Baker Well
Reservoir Well
1MG Reservoir


Legend
Reservoir
Well
Pump Station
Fire Hydrants
Pipe Material
Steel
AC
PVC
Well Line
City Limits
UGB
Church Well
Boone #2 Well
Boone #1 Well
Tower Well
0.1MG Reservoir
1MG Reservoir
Reservoir Well
Baker Well
MICHAEL
CLINE
DARLA
DONNA
DIANNE
DEL MAR
MAPLE
OAK
LOCUST
LINCOLN
CHERYL
CLOVER
HAZEL
SHAMROCK
CLEVELAND
EVERGREEN
MAIN
WASHINGTON
CHURCH
GORDON
YORK
ABBEY
DURBIN
WILLAMETTE
FOX
ELK
DEER
HIGHBERGER
BOBCAT
ANTELOPE
ESSEX
BELLEVUE
CARMEL
MILL CREEK
LEVERMAN
SANTIAM HWY
STEINKAMP

Appendix C – Water Permits, Extensions, and Certificates


Claim GR_3543.pdf


GR_3543 T_13940 Amended applicatio


GR_3543 T_13940 Amended applicatio


Permit G_6400.pdf


Permit G_6400 Cert 65917.pdf


Permit G_6400 Cert 65917 Map.pdf


Permit G_10223.pdf


Permit G_10223 Cert 96097.pdf


Permit G_10223 Cert 96097.pdf


Permit G_11891.pdf


Permit G_11891.pdf


Permit G-11891 Cert 89924 T-13938 Amer


Permit G_11891.pdf


Permit G_13679 A well.pdf


Permit G_13679 A well Ext of Time.pdf


Permit G-11891 Cert 89924 T-13938 Amer

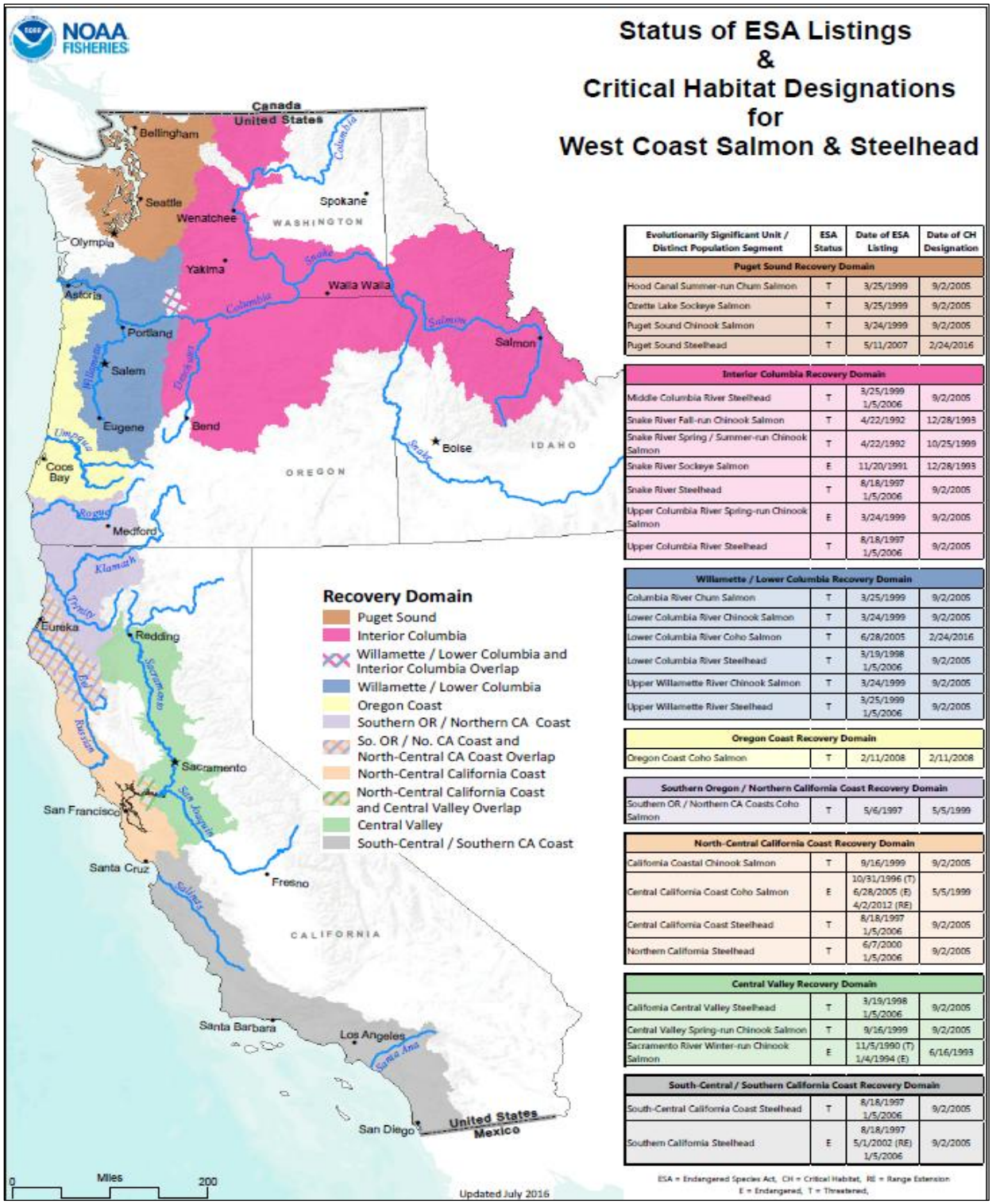

Permit G-11891 Cert 89924 T-13938 Amer


Permit G-1051 Cert 96098 Map.pdf

Actual permits and certificates are electronically filed with the State of Oregon Water Resources Department and can be viewed with the following link:

https://apps.wrd.state.or.us/apps/wr/wrinfo/wr_query.aspx?SearchType=Name&name_last=&name_company=Aumsville&basin_nbr=&start_priority=&end_priority=&use_category=&wr_type=&view_canceled_rights=False

Appendix D: Environmental Information

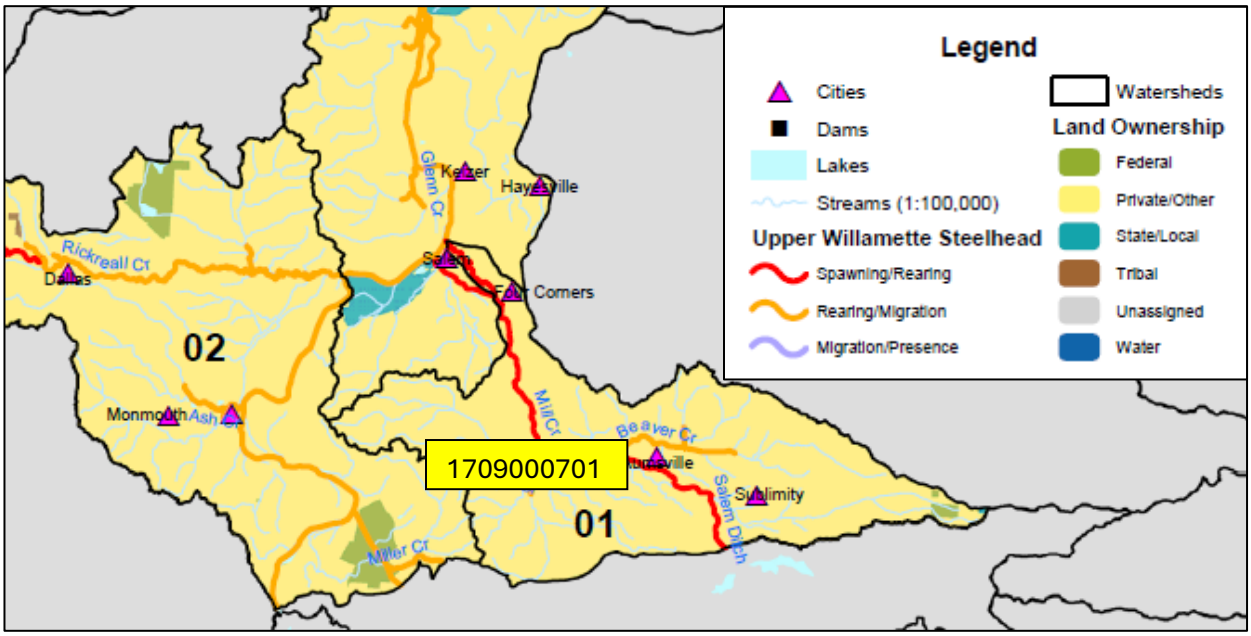


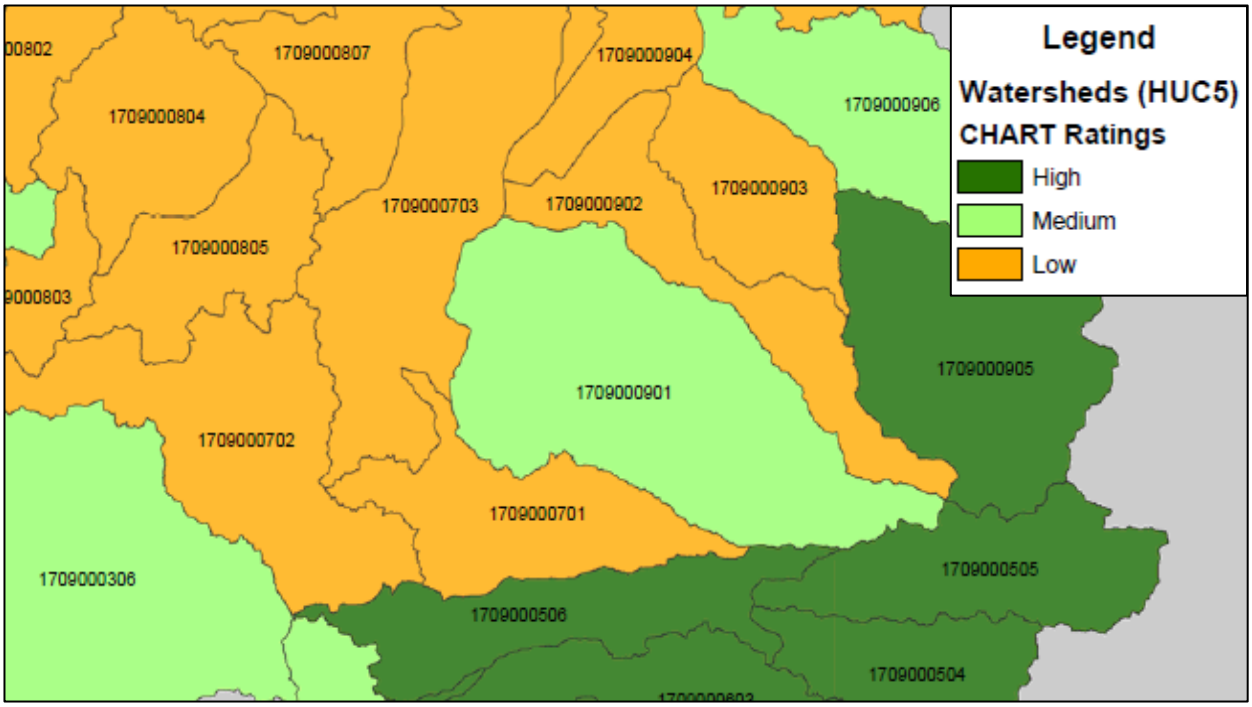
Evolutionarily Significant Unit / Distinct Population Segment	ESA Status	Date of ESA Listing	Date of CH Designation
Puget Sound Recovery Domain			
Hood Canal Summer-run Chum Salmon	T	3/25/1999	9/2/2005
Ozette Lake Sockeye Salmon	T	3/25/1999	9/2/2005
Puget Sound Chinook Salmon	T	3/24/1999	9/2/2005
Puget Sound Steelhead	T	5/11/2007	2/24/2016
Interior Columbia Recovery Domain			
Middle Columbia River Steelhead	T	3/25/1999 1/5/2006	9/2/2005
Snake River Fall-run Chinook Salmon	T	4/22/1992	12/28/1993
Snake River Spring / Summer-run Chinook Salmon	T	4/22/1992	10/25/1999
Snake River Sockeye Salmon	E	11/20/1991	12/28/1993
Snake River Steelhead	T	8/18/1997 1/5/2006	9/2/2005
Upper Columbia River Spring-run Chinook Salmon	E	3/24/1999	9/2/2005
Upper Columbia River Steelhead	T	8/18/1997 1/5/2006	9/2/2005
Willamette / Lower Columbia Recovery Domain			
Columbia River Chum Salmon	T	3/25/1999	9/2/2005
Lower Columbia River Chinook Salmon	T	3/24/1999	9/2/2005
Lower Columbia River Coho Salmon	T	6/28/2005	2/24/2016
Lower Columbia River Steelhead	T	3/19/1998 1/5/2006	9/2/2005
Upper Willamette River Chinook Salmon	T	3/24/1999	9/2/2005
Upper Willamette River Steelhead	T	3/25/1999 1/5/2006	9/2/2005
Oregon Coast Recovery Domain			
Oregon Coast Coho Salmon	T	2/11/2008	2/11/2008
Southern Oregon / Northern California Coast Recovery Domain			
Southern OR / Northern CA Coasts Coho Salmon	T	5/6/1997	5/5/1999
North-Central California Coast Recovery Domain			
California Coastal Chinook Salmon	T	9/16/1999	9/2/2005
Central California Coast Coho Salmon	E	10/31/1996 (T) 6/28/2005 (E) 4/2/2012 (RE)	5/5/1999
Central California Coast Steelhead	T	8/18/1997 1/5/2006	9/2/2005
Northern California Steelhead	T	6/7/2000 1/5/2006	9/2/2005
Central Valley Recovery Domain			
California Central Valley Steelhead	T	3/19/1998 1/5/2006	9/2/2005
Central Valley Spring-run Chinook Salmon	T	9/16/1999	9/2/2005
Sacramento River Winter-run Chinook Salmon	E	11/5/1990 (T) 1/4/1994 (E)	6/16/1993
South-Central / Southern California Coast Recovery Domain			
South-Central California Coast Steelhead	T	8/18/1997 1/5/2006	9/2/2005
Southern California Steelhead	E	8/18/1997 5/1/2002 (RE) 1/5/2006	9/2/2005

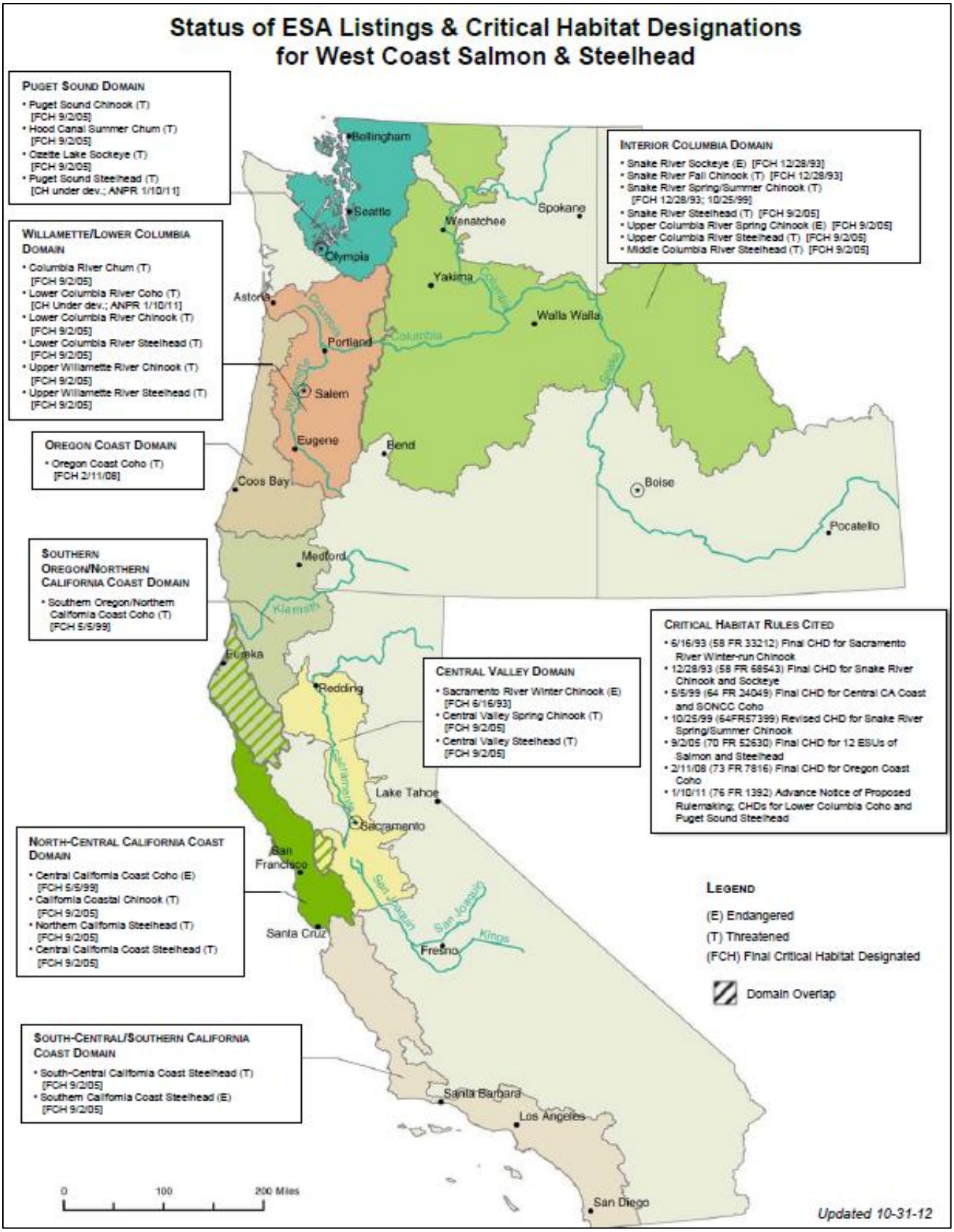
ESA = Endangered Species Act, CH = Critical Habitat, RE = Range Extension
E = Endangered, T = Threatened,

Willamette / Lower Columbia Recovery Domain			
Columbia River Chum Salmon	T	3/25/1999	9/2/2005
Lower Columbia River Chinook Salmon	T	3/24/1999	9/2/2005
Lower Columbia River Coho Salmon	T	6/28/2005	2/24/2016
Lower Columbia River Steelhead	T	3/19/1998 1/5/2006	9/2/2005
Upper Willamette River Chinook Salmon	T	3/24/1999	9/2/2005
Upper Willamette River Steelhead	T	3/25/1999 1/5/2006	9/2/2005

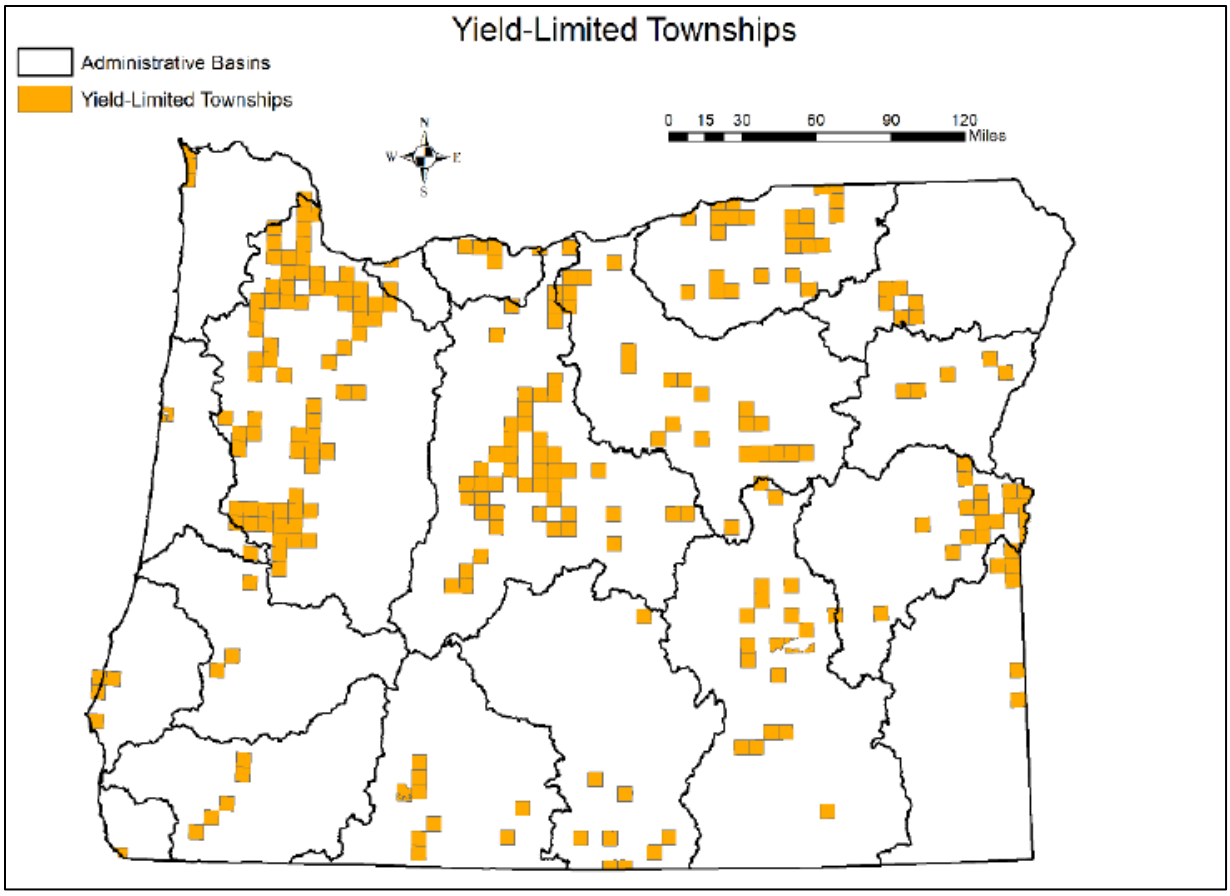
Upper Willamette Winter Steelhead Distribution
Middle Willamette Distribution (17090007)






Status of ESA Listings & Critical Habitat Designations for West Coast Salmon & Steelhead
Puget Sound Domain
• Puget Sound Chinook (T) [FCH 9/2/05]
• Hood Canal Summer Chum (T) [FCH 9/2/05]
• Ozette Lake Sockeye (T) [FCH 9/2/05]
• Puget Sound Steelhead (T) [CH under dev.; ANPR 1/10/11]
Willamette/Lower Columbia Domain
• Columbia River Chum (T) [FCH 9/2/05]
• Lower Columbia River Coho (T) [CH Under dev.; ANPR 1/10/11]
• Lower Columbia River Chinook (T) [FCH 9/2/05]
• Lower Columbia River Steelhead (T) [FCH 9/2/05]
• Upper Willamette River Chinook (T) [FCH 9/2/05]
• Upper Willamette River Steelhead (T) [FCH 9/2/05]
Oregon Coast Domain
• Oregon Coast Coho (T) [FCH 2/11/08]
Southern Oregon/Northern California Coast Domain
• Southern Oregon/Northern California Coast Coho (T) [FCH 5/5/99]
North-Central California Coast Domain
• Central California Coast Coho (E) [FCH 5/5/99]
• California Coastal Chinook (T) [FCH 9/2/05]
• Northern California Steelhead (T) [FCH 9/2/05]
• Central California Coast Steelhead (T) [FCH 9/2/05]
South-Central/Southern California Coast Domain
• South-Central California Coast Steelhead (T) [FCH 9/2/05]
• Southern California Coast Steelhead (E) [FCH 9/2/05]
Interior Columbia Domain
• Snake River Sockeye (E) [FCH 12/28/93]
• Snake River Fall Chinook (T) [FCH 12/28/93]
• Snake River Spring/Summer Chinook (T) [FCH 12/28/93; 10/25/99]
• Snake River Steelhead (T) [FCH 9/2/05]
• Upper Columbia River Spring Chinook (E) [FCH 9/2/05]
• Upper Columbia River Steelhead (T) [FCH 9/2/05]
• Middle Columbia River Steelhead (T) [FCH 9/2/05]
Central Valley Domain
• Sacramento River Winter Chinook (E) [FCH 6/16/93]
• Central Valley Spring Chinook (T) [FCH 9/2/05]
• Central Valley Steelhead (T) [FCH 9/2/05]
Critical Habitat Rules Cited
• 6/16/93 (58 FR 33212) Final CHD for Sacramento River Winter-run Chinook
• 12/28/93 (58 FR 68543) Final CHD for Snake River Chinook and Sockeye
• 5/5/99 (64 FR 24049) Final CHD for Central CA Coast and SONCC Coho
• 10/25/99 (64FR57399) Revised CHD for Snake River Spring/Summer Chinook
• 9/2/05 (70 FR 52630) Final CHD for 12 ESUs of Salmon and Steelhead
• 2/11/08 (73 FR 7816) Final CHD for Oregon Coast Coho
• 1/10/11 (76 FR 1392) Advance Notice of Proposed Rulemaking; CHDs for Lower Columbia Coho and Puget Sound Steelhead
Legend
(E) Endangered
(T) Threatened
(FCH) Final Critical Habitat Designated
Domain Overlap
Bellingham
Seattle
Olympia
Spokane
Wenatchee
Yakima
Astoria
Walla Walla
Portland
Salem
Eugene
Bend
Coos Bay
Boise
Pocatello
Medford
Klamath
Eureka
Redding
Lake Tahoe
Sacramento
San Francisco
Santa Cruz
Fresno
Santa Barbara
Los Angeles
San Diego
0
100
200 Miles
Updated 10-31-12

Aumsville draws water from a State administrative area labeled as groundwater restricted, with a concern rating as “yield-limited”. Groundwater was considered as Yield-Limited if the only problematic information in the Township was a median yield on well tests that is below a threshold considered necessary for irrigation from a well. [1]

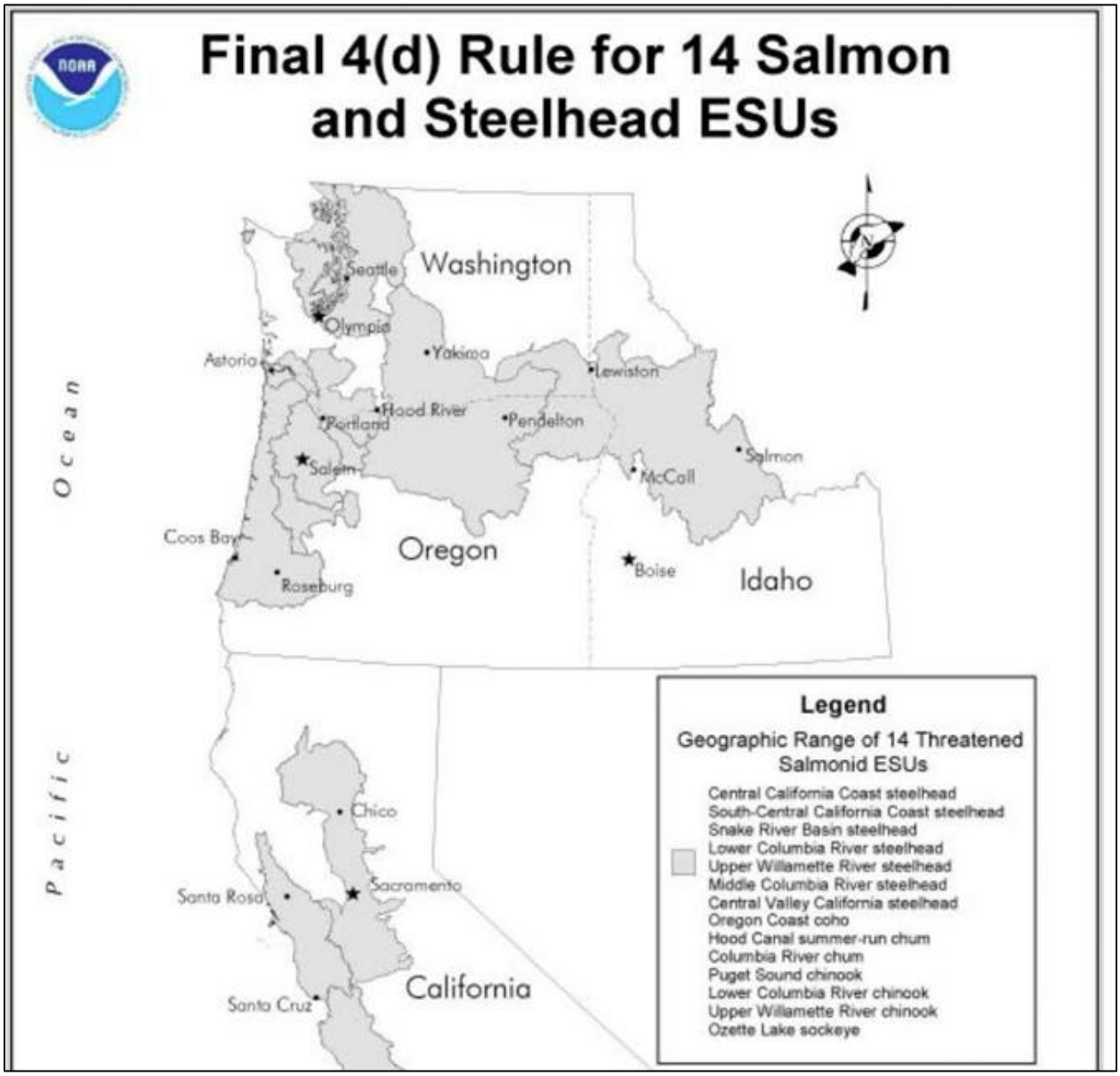


Low yielding wells are typically assessed for sufficient water quantity relating to “irrigation” use, which the City of Aumsville is specifically responsible for serving water under a quasi-municipal beneficial use.

1 - 2021 Oregon GW Resource Concerns Assessment

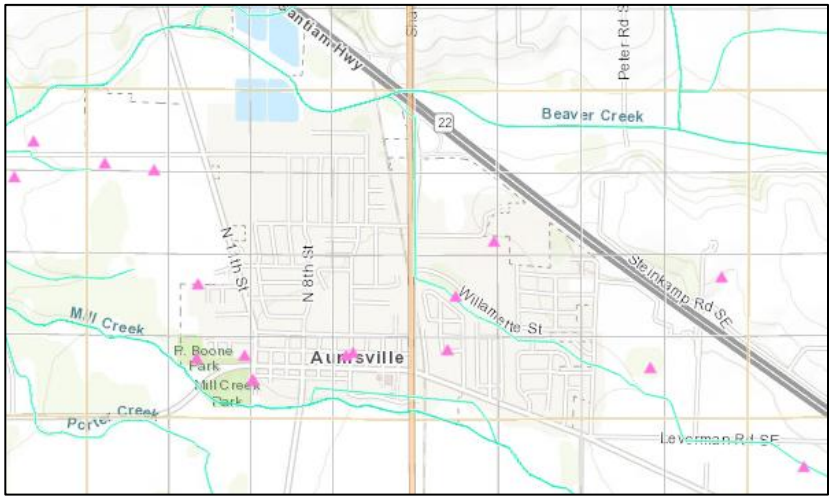
www.oregon.gov/owrd/WRDReports/2021_Groundwater_Resource_Concerns_Report.pdf

ESU Map for Salmon and Steelhead



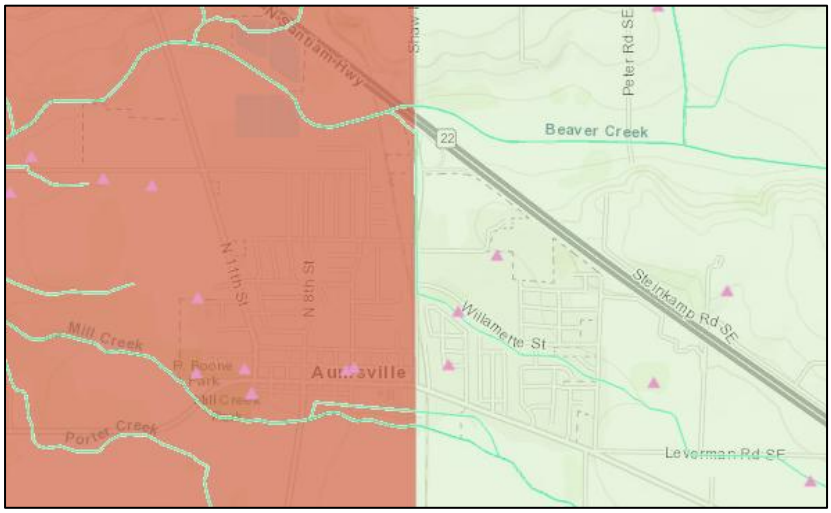
The area where the City of Aumsville draws water from the five wells is considered classified as a “groundwater” restricted area.

Aumsville community with wells and surface water.



Streams showing ODFW Fish Habitat Distribution

GW Restricted Area west half of community



Appendix E: Water Rates

Water Service Charges

Residential

	Gallons Included	Minimum Service Charge Inside City Limits	Outside City Limits	Consumption Charge Per 1000 Gallons over Base
Single User Domestic	7,000	$48.36	$96.72	$4.55
Single User - Senior Rates	7,000	$36.28	$72.56	$4.55

Commercial, Industrial, Public Agency & Non-Profit Rates

Single User Meters

Meter Size	Gallons Included	Minimum Service Charge Inside City Limits	Outside City Limits	Consumption Charge Per 1000 Gallons over Base
3/4" or less	7,000	$48.36	$96.72	$4.55
1"	11,690	$80.77	$161.54	$4.55
1 1/2"	16,800	$116.13	$232.26	$4.55
2"	37,310	$257.91	$515.82	$4.55
3"	70,000	$483.93	$967.86	$4.55
4"	116,620	$806.24	$1,612.48	$4.55
6"	233,240	$1,612.55	$3,225.10	$4.55
8"	373,170	$2,580.00	$5,160.00	$4.55
10"	670,810	$4,637.84	$9,275.68	$4.55

Commercial, Industrial, Public Agency & Non-Profit Rates

Multiple-User Meters

For base rate charges, use the ***higher of Minimum Service Charge or [Per User Rate x Total Users]***

Meter Size	Gallons Included (Per User)	Minimum Service Charge Inside City Limits	Per User Inside City Limits	Minimum Service Charge Outside City Limits	Per User Outside City Limits	Consumption Charge Per 1000 Gallons over Base
3/4" or less	7,000	$48.36	$48.36	$96.72	$96.72	$4.55
1"	7,000	$80.77	$48.36	$161.54	$96.72	$4.55
1 1/2"	7,000	$116.13	$48.36	$232.26	$96.72	$4.55
2"	7,000	$257.91	$48.36	$515.82	$96.72	$4.55
3"	7,000	$483.93	$48.36	$967.86	$96.72	$4.55
4"	7,000	$806.24	$48.36	$1,612.48	$96.72	$4.55

Resolution 7-23

Appendix F: Water Recycle – Reuse Information

The Recycled Water Use Plan for the City of Aumsville was developed by Westech Engineering, Inc. with a final report completed in December 2021. The report is available through the City of Aumsville Public Works Department.