Water Management and Conservation Plan

Draft

Prepared for:

The City of Amity

Date:

December 2024

Prepared by:

Oregon Association of Water Utilities

Contents

Req'd		WMCP Checklist	OAR Reference	Page No.
	WMCP Plan Elements			
✓		Notice of affected local government(s)	690-086-0125(5)	3
✓		Proposed WMCP update schedule	690-086-0125(6)	3
✓		Additional time to implement conservation benchmarks	690-086-0125(7)	4
	Water Supplier Description			
✓		Supplier's source(s)	690-086-0140(1)	4
✓		Current service area & population served	690-086-0140(2)	8
✓		Assessment of adequacy and reliability of existing water supplies	690-086-0140(3)	8
✓		Present and historic water use	690-086-0140(4)	10
✓		Water rights inventory table and environmental resource issues	690-086-0140(5)	6-7
✓		Customers served and water use summary	690-086-0140(6)	12
✓		Interconnections with other systems	690-086-0140(7)	13
✓		System schematic	690-086-0140(8)	14
✓		Quantification of system leakage	690-086-0140(9)	14
	Water Conservation Element			
		Progress report on implementation of conservation measures	690-086-0150(1)	15
✓		Water use measurement and reporting program	690-086-0150(2)	15
✓		Currently implemented conservation measures	690-086-0150(3)	16
✓		Annual water audit	690-086-0150(4)(a)	16
✓		Full metering of system	690-086-0150(4)(b)	17
✓		Meter testing and maintenance program	690-086-0150(4)(c)	17
✓		Rate structure	690-086-0150(4)(d)	17
✓		System Leakage exceeds 10 percent	690-086-0150(4)(e)	18
✓		2-yr. ID factors and remedies for water loss	690-086-0150(4)(e)(A)	17
✓		5-yr. Process	690-086-0150(4)(e)(B)	18
✓		Regular Schedule Leak Detection Replacement Program	690-086-0150(4)(e)(B)(i)	18
✓		Water Loss Control Program AWWA	690-086-0150(4)(e)(B)(ii)	18
✓		Public education program	690-086-0150(4)(f)	19
		>1,000 pop, propose expansion ext. permit, >7,500 pop – 5-yr.	690-086-0150(5)	20
		Technical and financial assistance programs	690-086-0150(5)(a)	20
		Retrofit/replacement of inefficient fixtures	690-086-0150(5)(b)	21
		Rate structure and billing practices to encourage conservation	690-086-0150(5)(c)	21
		Reuse, recycling, and non-potable opportunities	690-086-0150(5)(d)	21
		Other proposed conservation measures	690-086-0150(d)(e)	21
	Water Curtailment Element			
✓		Water supply assessment and description of past deficiencies	690-086-0160(1)	24
✓		Stages of alert	690-086-0160(2)	24
✓		Triggers for each stage of alert	690-086-0160(3)	25
✓		Curtailment actions	690-086-0160(4)	27
	Water Supply Element			
✓		Future service area and population projections	690-086-0170(1)	30
✓		Schedule to fully exercise each permit (*i.e., certification*)	690-086-0170(2)	31
✓		Demand forecast	690-086-0170(3)	33
✓		Comparison of projected need and available sources	690-086-0170(4)	33
		Analysis of alternative sources	690-086-0170(5) and (8)	35-37
		Maximum rate and monthly volume quantification	690-086-0170(6)	36
		Mitigation actions under state and federal laws	690-086-0170(7)	34
	Greenlight Water Request			
		Conservation measure schedule and cost effectiveness	690-086-0130(7)(a)	38
		Acquisition of New Water Rights	690-086-00170 (8) (a-c)	38
		Justification that selected source is most feasible and appropriate	690-086-0130(7)(b)	39
		Mitigation requirements	690-086-0130(7)(c)	39
✓		***Checked boxes required by all water suppliers.***		

The City of Amity

WATER MANAGEMENT CONSERVATION PLAN

Executive Summary:

A water management conservation plan (WMCP), is 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 the 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 Amity.

The WMCP is formed by building on the current resource usage 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 systems (PWS) (municipal) 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 financial 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 with 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 beneficial use towards certification will require public water systems additional time and resources. These actions are very different today than in the past as data collection should become a higher priority for operations. The accuracy from operations supports the necessary decisions to negotiate the water permitting and certification process.

Additional future costs for system upgrades and repairs will be required to meet 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 figure relating to 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 The City of Amity**,** as well as the projected needs in maximum volume of water. The percentages shown reveal the relativity of water used against the total available water. Assuming conditions remain consistent with water production and water sold, there are positive figures that the City of Amity will be using **sixteen (16) percent** of the allotted water rights during the timeframe of this WMCP.

Comparative Usage – Remaining Balance:

Table ES-1 Comparative Usage and Remaining Balance

Permits	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 %
NA	0.1448	0.1448	65.0	0.000	0.000	0	0.1448	100.0%
NA	0.1337	0.1337	60.0	0.000	0.000	0	0.1337	100.0%
S -3462	0.5000	0.5	224.4	0.000	0.000	0	0.5000	100.0%
S-5481	0.1300	0.13	58.3	0.000	0.000	0	0.1300	100.0%
G-4780	0.1100	0.11	49.4	0.000	0.000	0	0.1100	100.0%
G-1283	0.4500	0.45	202.0	0.000	0.000	0	0.4500	100.0%
S-13455	0.4750	0.475	213.2	0.000	0.000	0	0.4750	100.0%
LL - 1180	0.8912	0.8912	400.0	0.000	0.000	0	0.8912	100.0%
S - 39599	1.0000	0.475	213.2	0.303	0.38	63,393	0.098	20.7%
Total	2.9435	2.42	1485.39	0.303	0.38	63,393	0.098	4.06%

Key figures in blue show the development limitation, If applicable, and its unused portion available for future

Balance of permits show unused water (CFS) available for the future growth of the PWS

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

	0.38	16%	0.38 CFS necessary through 2045 with 2.04 CFS (915 GPM) available for the future

The table delivers two aspects relating to water rights, a) comparative view to resolve if the total permitted quantity of water meets the future needs of the public water system, b) to understand the balance of remaining (unused) quantity of total permitted water rights complements the projected need. The maximum allowed rate is the amount of water originally allocated, the development limitation is an adjusted amount of water a PWS can divert; that cannot be exceeded and is less than the maximum allowed rate.

Development limitation is a criterion placed on water under an extended permit as a condition to prevent 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 has yet to be diverted for beneficial use. Water being recorded and accounted for 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 and meeting State required measures to be considered. PWSs 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.

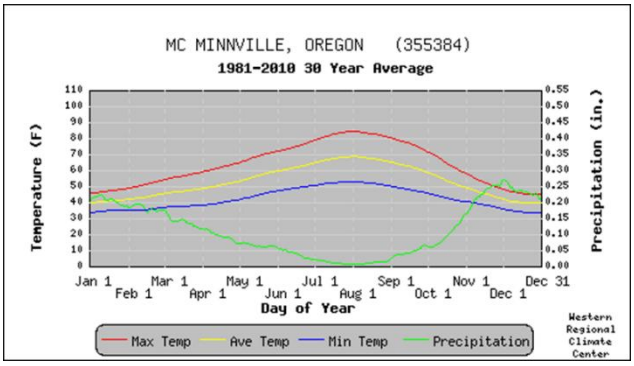
As the uncertainty of the future cannot guarantee the findings discovered in this WMCP, PWS is encouraged to seek professional advice from consultants, engineering firms and or water rights legal counsel for guidance relating to water permitting, certification and the Greenlight water process.

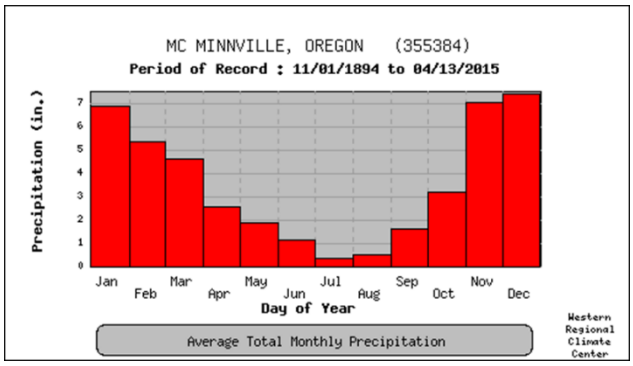
Introduction:

Situated in the southern edge of Yamhill County, the City of Amity was originally named from a dispute after two rival communities having an amicable settlement, establishing the town in 1848-49. The city was incorporated in 1880 and the service area is approximately 0.60 square miles of land and is coordinated with Yamhill County zoning development.[1]

The median household income for the Amity area is $86,790.00 while the average per capita income in Oregon is $75,657.00 [2] The current population, per Portland State University-Population Research Center (2023 Annual Population Report), is 1,826 while Yamhill County's population is 110,167.[3] Per Oregon drinking water data, Amity has 702 water service connections.

Weather related information is taken from the averages proven by the Western Regional Climate Center over a period of 1981 through 2010. Annual rainfall is 41.81 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 minimum temperature is 41^0 F, using the McMinnville weather station as having the most complete information.[5]





City of Amity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	45.9	50.8	55.8	62.1	68.8	74.9	82.9	82.7	76.7	64.9	53.1	46.6	63.8
Average Min. Temperature (F)	33.3	35.1	36.5	39	43.2	47.2	49.8	49.9	46.7	41.9	37.9	34.4	41.2
Average Total Precipitation (in.)	6.67	5.18	4.5	2.56	1.88	1.15	0.39	0.56	1.55	3.13	7.01	7.24	41.81

1 - https://en.wikipedia.org/wiki/Amity,_Oregon
2 - https://www.city-data.com/city/Amity-Oregon.html
3 - https://www.pdx.edu/population-research/population-estimate-reports
4 - https://yourwater.oregon.gov/inventory.php?pwsno=00041
5 - https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?or5384

Scope:

The scope 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 Amity. 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 Amity currently meets the criteria proven under OAR 690-086-0150(5), serving a population of 1,826 through 702 connections.

This WMCP is the second report sent to Water Resources Department, with the first WMCP completed in 2014 as part of the city's Water Master Plan. The next update for a WMCP is due in 2034, will be preceded by a progress report due in 2029.

Every five years, the City of Amity 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 dependent on both the monetary and available work force to complete the tasks. At a minimum the City of Amity will:

- *Supply educational information on water conservation to the customers served.*
- *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.*

This document has been compiled by the Oregon Association of Water Utilities with authorization from the City of Amity. 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 December 2024, the City of Amity 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. Comments were not received within the 30-day period. A copy of the notification letter and comments are included in Appendix A.

- Yamhill County Planning Department – Ken Friday – 503.434.7516
  - kfriday@co.yamhill.or.us
- Region 22 Water Master – Joel Plahn – 503.508.2394
  - joel.plahn@water.oregon.gov
- City of Sheridan – Kie Cottam – PW Director - 503.932.6599
  - kcottam@cityofsheridanor.com
- City of Willamina – Jeff Brown – PW Director – 503-437-6998
  - brownj@ci.willamina.or.us

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) says an updated plan to be sent to the Oregon Water Resources Department within no more than 10 years. This is based on the proposed schedule for implementing conservation measures, rate of growth or other expected changes by the water supplier. A “Progress Report” will be sent on or before the 5-year period (2029) 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 Amity to decide the progress of the management conservation plan.

All efforts towards management and conservation will be noted and kept for the progress report which will be given every five years by the City of Amity. The next progress report will be due by the end of 2029.

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 Amity is not requesting an extension of time to implement metering, or a benchmark set up in a previously approved water management conservation. The City of Amity is a fully metered water system, with new meters installed during the 2020-2021 years.

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 Amity supplies water to the community from the South Yamhill River, under three permits, with a total allowance of water at 2.36 cubic feet per second (CFS) or 1,062 gallons per minute (GPM). The city has additional certificates using either wells and springs with a total allowance of 1.46 CFS or 659 GPM. Neither the wells nor the springs are being used at this time due to poor water quality.

All source water is pumped to the water treatment plant (WTP) which provides a multi-step process (infiltration screen, pump station, strainer, and media filtration prior to storage. From the clear wells, water is pumped to three reservoirs and to the distribution system. The total capacity of the three reservoirs is 1.05 MG and they are connected hydraulically. The water then flows through ≈ 14 miles of various sized waterlines. The City of Amity does not have any interties or contractual agreements to supply water to other entities.

1.4.1 Points of Diversion

Table 1-1: POD Locations / Permitted Rates

Table 1-1: POD Locations / Permitted Rates								
Permit	Town-ship	Range	Section	Qtr Qtr	Notes		Rate [1] (CFS)	Rate (GPM)
GR-431	5 S	4 W	20	SE - SW	Well 1		0.1448	65
GR-431	5 S	4 W	20	SW - SW	Well 2		0.1337	60
2341	5 S	4 W	23	SW - SW	Spring		0.5000	224
3920	5 S	4 W	35	NE - NE	Spring		0.1300	58
42279	5 S	4 W	30	NW - NE	Well 4		0.1100	49
82452	5 S	5 W	25	NE - NE	Well 3		0.4500	202
S-13455	5 S	5 W	26	NE - NE	S Yam	Lot 1	0.4750	213
LL-1810	5 S	5 W	26	SE -NE	S Yam		0.8912	400
S-55335	5 S	5 W	26	NE - NE	S Yam	Lot 1	0.5000	224
	5 S	5 W	26	SE - NE	S Yam	DLC 69	0.5000	224
S-39599	5 S	5 W	26	NE -NE	S Yam		1.0000	449
Total							3.9435	2,170
GR-431 , registration number								
2341, 3920, 42279, 82452 - Certificates								
Yam - Yamhill River, Will - Willamette River								
S-13455 not to exceed 95 acre-feet (30.95 MG)								
LL-1810 - limited license (5-years) to from a new point of diversion								
1- Rate without development limitations.								

1.4.2 Storage Capacities

Table 1-2: Storage Reservoirs

Table: 1-2: Storage Reservoirs		
Reservoir	Storage Capacity (MG)	Elevation
1	0.20	350
2	0.60	350
3	0.25	350
Total Capacity	1.050	

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: The City of Amity 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 (Gallons) (5)(g)**	**Authorized Completion Date (5)(h)**
GR-431	NA	GR-417	4/30/1931	NA	Well 1, 2	M	0.1448	0.1448	0.000	0.000	0.000	0.000	NA
GR-431	NA	GR-417	7/31/1953	NA	Well 2	M	0.1337	0.1337	0.000	0.000	0.000	0.000	NA
S-5664	S -3462	2341	8/7/1917	NA	Spring	M	0.5000	0.5000	0.000	0.000	0.000	0.000	NA
S-8408	S-5481	3920	5/26/1922	NA	Spring	M	0.1300	0.1300	0.000	0.000	0.000	0.000	NA
G-5169	G-4780	42279	4/24/1970	NA	Well 4	M	0.1100	0.1100	0.000	0.000	0.000	0.000	NA
G-1410	G-1283	82452	3/6/1959	NA	Well 3	M	0.4500	0.4500	0.000	0.000	0.000	0.000	NA
S-17767	S-13455	61988	1/24/1939	13121	S Yam Riv	M	0.4750	0.475	0.000	0.000	0.000	0.000	NA
LL - 1180	NA	NA	12/9/2019	NA	S Yam Riv	M	0.8912	0.8912	0.000	0.000	0.000	0.000	3/4/2025
S-50474	S - 39599	NA	5/16/1973	13685	S Yam Riv	M	1.0000	0.4750	0.5322	100.456	6.974	0.232	10/31/2031
					Total		2.9435	2.4185	0.5322	100.4560	6.9742	0.2325	NA
GR-431, registration claim numbers, GR-417 is the certificate, Well 1 quantity of water claimed at 65 gallons per minute (GPM), Well 2 pumping at 60 GPM													
2341 - As Breeding Spring													
3920 - Matthew Spring Canyon Creek													
T-13121 - Approved APOD - 01-29-2020, Completion date 10-01-2025, COBU - due 10-01-2026													
S-13455 is limited to 0.475 CFS, limited again to 95 Acre-feet (30.95 MG) from April 1 through Sept 30													
LL - 1810 usage allowed November through June not to exceed 400 GPM													
S-39599 - 0.5250 CFS conditioned for fish persistence													
Certificate 61988 is cancelled due to transfer application 13121 - change in point of diversion													

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 Amity's water system serves an incorporated area in Yamhill County which encloses approximately 0.6 square miles in the northern area of Willamette Valley. The rural area is speckled with wineries and the community was supported by the timber industry. The population in Amity according to Portland State University – Population Research Center (PSU-PRC) is 1826 people.[1] Per the Water Master Plan, shows a build-out in population could reach 2,316 people. For city services, the number may be skewed higher in the future as the city provides water to customers outside the city limits, but in the urban growth boundary. Those customers outside the city limits are ≈ 6 percent of total connections. 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 looked at from two focus points, a) the ability to sustain flows in the South Yamhill River, 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 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 6.97 million gallons (MG) monthly. With the water treatment plant (WTP) system designed to firmly supply the City of Amity with the capacity of 230 GPM (0.51 CFS)(9.93 MG/month) or ≈ 30 percent more water than consumed, the city could see a 20 percent increase in population and have adequate water, being aligned with current usage averages. The WTP can be expanded with a third unit to support an additional 200 GPM capacity and eventual reduction in unaccounted water, the city is well positioned for the future.

Table 1-5 indicating a five-year average usage rate at 0.26 CFS (5.04 MG/month), and a peak demand at 0.303 CFS (5.8 MG/month) the community demand ranges from 116 to 136 GPM or ≈ 50 percent of treatment capacity. The City of Amity is steadfast in managing both the source 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 is allowed 2.3362 CFS (1,048 GPM) or 1.8412 CFS (826 GPM) with development limitations. This allowance of water should suffice during the timeline of this WMCP.

1 – April 2024 - https://docs.google.com/spreadsheets/d/1Yy7SZXoCRYlx17b-M8GCmgmMID-s8MLP/edit#gid=794754057 -

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**	
S - 39599	65.26	68.25	87.36	100.46	97.13	418.45	418,451,126	**Annual Average**	159.23	0.35
NA	Water production was applied solely to permit S-39599, no water was applied to other remaining permits.					0.00	-		0.00	0.00
NA						0.00	-		0.00	0.00
NA						0.00	-		0.00	0.00
Production	65.26	68.25	87.36	100.46	97.13	418.45	418,451,126	83.690	159.23	0.355
Oper Usage	3.05	2.20	2.19	6.42	5.07	18.92	18,915,000	3.783	9.00	0.020
Monthly Average (MG)	5.44	5.69	7.28	8.37	8.09	**6.97**		**Operations [B]**		
	Annual Water Sales (MG)					**Total Water Sales (MG)**	**Total Water Pumped**	**Operations Usage**	**Unaccounted Water**	
2023	42,118,315					42.12	65.26	3.05	-30.8%	
2022	44,057,758					44.06	68.25	2.20	-32.2%	
2021	44,958,470					44.96	87.36	2.19	-46.0%	
2020	44,806,830					44.81	100.46	6.42	-49.0%	
2019	41,508,540					41.51	97.13	5.07	-52.0%	

Table 1-4-1: Water Production, Sales Unaccounted Summary Averages								
2020-2016	**2023**	**2022**	**2021**	**2020**	**2019**	**Five Year Loss Ave ***		**-42.02%**
Max MG	65.26	68.25	87.36	100.46	97.13	Notes:		
Max CFS	0.28	0.29	0.37	0.43	0.41	A - Figures taken from Water Use Report timeframe coinciding with WMCP		
(5e) Allowed [C]	2.94	2.94	2.94	2.94	2.94	B - Line flush, PSI - flow testing, general operations,		
Allowed DL [D]	2.42	2.42	2.42	2.42	2.42	C - figures calculated in CFS without development limitations		
(5f) Max Inst [C]	0.53	0.53	0.53	0.53	0.53	D - figures calculated in CFS with development limitations		
(5f) Max Ann [E]	65.26	68.25	87.36	100.46	97.13	E - figures calculated in MG		
(5g) Ave Mo. [E]	5.44	5.69	7.28	8.37	8.09	* - Average loss calculated during the timeframe of this WMCP		
(5g) Ave Daily [E]	0.181	0.190	0.243	0.279	0.270			

1.7 Quantification of Present and Historical Use: OAR 690-086-0140 (4)

A quantification of the water delivered by the water supplier 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 both from an average monthly and annual quantity and the peak months for the past five-years. Highlighted are the months which the peak demand was created.

Table 1-5: City of Amity Water Usage

Table 1-5: City of AmityWater Usage								
	Total Gallons						Gallons	
Month	**2023**	**2022**	**2021**	**2020**	**2019**	**Mo. Averages**	**GPD**	**CFS**
January	2,974,820	3,268,920	2,994,600	3,030,820	3,138,330	3,081,498	99,403	0.15
February	3,239,520	3,191,290	2,970,940	2,904,380	2,963,090	3,053,844	98,511	0.15
March	2,488,490	2,890,010	2,402,920	2,693,240	2,876,000	2,670,132	86,133	0.13
April	2,848,223	3,356,930	3,280,790	3,381,480	3,015,810	3,176,647	102,472	0.16
May	2,964,280	2,718,970	4,391,900	3,292,560	2,852,490	3,244,040	104,646	0.16
June	4,414,014	3,501,270	4,181,820	3,913,260	4,031,000	4,008,273	129,299	0.20
July	5,077,699	4,873,340	**5,876,710**	5,439,410	**4,661,390**	5,185,710	167,281	**0.26**
August	**5,439,044**	**5,732,450**	4,686,260	5,203,330	4,376,510	5,087,519	164,114	0.25
September	3,757,959	5,055,690	4,659,180	**5,680,370**	3,900,640	4,610,768	148,734	0.23
October	3,175,259	3,144,058	2,986,450	3,260,080	3,682,540	3,249,677	104,828	0.16
November	2,439,737	3,440,480	3,087,560	3,169,790	2,712,860	2,970,085	95,809	0.15
December	3,299,270	2,884,350	3,439,340	2,838,110	3,297,880	3,151,790	101,671	0.16
Annual Averages - Million Gallons								
Annual Totals	42,118,315	44,057,758	44,958,470	44,806,830	41,508,540	3,624,165	120,806	0.19
Annual Daily Ave	115,393	120,706	123,174	122,423	113,722	119,084	119,084	0.18
Mo. Maximum	5,439,044	5,732,450	5,876,710	5,680,370	4,661,390	5,876,710	195,890	**0.303**
Peak Seasonal	August	July	July	July	August			
Peak Day Use	181,301	191,082	195,890	189,346	155,380	195,890		0.30
User Averages								
Population	1826	1810	1803	1765	1750			
Ave GPCD	63	67	68	**69**	65	67	69	
Peak GPCD	99	106	**109**	107	89	102	109	

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 Amity obtains its water through infiltration screens, raw water pump station on the South Yamhill River. The area is identified as the Yamhill Sub-Basin of the Willamette Basin. The hydrologic unit code 17090008 encompassing primarily Yamhill County with a very small portion in Polk County.

The area's surface waters are considered 303(d) listed with identified impairments and is considered a critical habitat for Chinook Salmon, Steelhead Trout. The area is considered an evolutionary significant unit (ESU) for both species and distinct population segment, (the population that is discrete from other populations yet significant to the entire species) [1], for Steelhead Trout. Appendix D maps show various descriptions associated with noted species.

Table 1-6: Endangered Species

Table 1-6: Endangered Species					
Species	**Ecoregion**	**ODFW Listing**	**Federal Listing**	**Area Designation**	**ESA Critical Habitat**
So Yamhill River					
Upper Willamette River - HUC 17090008					
Bull Trout	Upp Will	S	Threatened	SMU	No
Chinook Salmon - Fall	Upp Will	SC	Threatened	ESU / SMU	Yes -2018
Chinook Salmon - Spring	Upp Will	SC	Threatened	ESU / SMU	Yes -2019
Oregon Chub	Upp Will	S	Threatened	Range Wide	Yes - 2018
Pacific Brook Lamprey	Upp Will	S		Range Wide	No -2021
Pacific Lamprey	Upp Will	S		Range Wide	No - 2021
Steelhead Trout *	Upp Will	SC	Threatened	ESU / SMU	Yes - 2018
Western Brook Lamprey	Upp Will	S		Range Wide	Yes - 2021
Western River Lamprey	Upp Will	S		ESU / SMU	Yes - 2021
Upper Will - So. Yamhill River is a tributary to the Willamette River					
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					
* - Winter Steelhead,					

1 - https://www.fisheries.noaa.gov/laws-and-policies/glossary-endangered-species-act

The South Yamhill River, Salt Creek, specific from Willamina Creek to Salt Creek being water quality is limited and the water quality parameters are extensive. From 1998 through 2018 assessments of water quality have been performed for various pollutants and the impacts on fish for the total maximum daily load placed on the water sources. The Department of Environmental Quality published an Integrated Report 2022 for parameters of E. Coli, Chlorophyll-a, dissolved oxygen, pH, fecal coliform, temperature, phosphorus, and the range of metals (pertaining to aquatic life). The primary area is East Creek to the confluence with South Yamhill River. The list of species is in Table 1-6, Endangered Species.

The wells are in a limited groundwater restricted area as well as the Oregon Department of Environmental Quality management area. The area, classified as exempt uses are allocated under a limited license, essentially to establish a crop, which water is not required once the crop is established.
Appendix D is supplemental information relating to water quality limitations. Maps are shown to better explain geographically the locations of various points associated with 303d listed streams, fish habitats and distribution areas of the surface waters in HUC 17090008.

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 Amity serves an approximate population of 1,826 through 702 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. A small northerly section along the eastern side of Highway 99 is zoned commercial while an almost mirror image of light industrial is positioned along the western side of Highway 99.

Neither commercial nor industrial services make up a large portion of the service connections as a total of 35 commercial, industrial accounts, yet 15 accounts are considered large service connections, greater than 1.5-inch service. Typical commercial accounts are restaurants, medical clinics, and small office services to accommodate the citizens. Multiple schools are also served by the city of Amity. From Table 1-5, the typical GPCD equates to 69 gallons non-peak time and 109 gallons peak times. Table 3.3 Per Capita Water Demands, from the 2014 Water Master Plan, the document reviewed for the initial WMCP, estimates GPCD at 114 gallons and maximum month equaling 162 GPCD.

The primary usage for all water is single family residential customers at 87 + percent, while the commercial accounts consume 10- 12 percent. The single highest user is the school district.

Table 1-7: Water Use Characteristics

Table 1-7: Water Use Characteristics			
Classification	Million Gallon Consumption		
	Ave. Annual Gallons		43,489,983
	Peak Monthly Gallons		5,876,710
	Gallons per Capita Daily -GPCD		69
	Peak - GPCD		109
	Gallons per day MG	**# Connections**	**% of total gallons**
Ave Gallons per Day	0.1191		
Peak Gallons per Day	0.1959		
Residential	0.102	644	83
Commercial / Industrial	0.007	50	16
Operations [1]	0.01	NA	1
1 - Operations has not included repairs of leaks			

Table 1-8: Water Usage Comparison

Table 1-8 2023 vs 2013 Water Usage Comparison						
	2011	**2010**	**2009**	**2008**	**2007**	**GPCD**
Ave	105	114	108	106	127	112
Peak	364	398	298	305	436	360
	2023	**2022**	**2021**	**2020**	**2019**	
Ave	63	67	68	69	65	67
Peak	99	106	109	107	89	102
	-40%	-42%	-37%	-35%	-49%	-40%
GPCD - is calculated using total gallons sold divided by approximate population for the year						
Percentages show difference of the two snapshots in time, 40% less water than previous timeframe.						

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 Amity has no inter-ties with other water supply systems. The closest two water systems to the community will be the City of Sheridan to the west (9 miles) and the City of McMinnville approximately 6 miles north. Perrydale Water Association, similar in size to the City of Amity, a rural water supplier is approximately 7 miles to the south.

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 Amity's water system schematic was derived from their water master plan completed in 2014 by Keller Associates. The multi-page map illustrates raw water intake, water treatment plant, 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 Amity sends an annual water report to OWRD, recording the total gallons pumped from October through September of the preceding year. City of Amity also reads meters on a monthly basis, tracks operational usage of water due from line flushing. The repair of leaks has not been tracked as mentioned in the 2014 WMCP.

The City of Amity's annualized unaccounted-for water over the past five years is 42 percent. The five-year tracking of unaccounted-for water has been reduced from 52 percent (2019) to 30.8 percent in 2023. The Water Master Plan incorporating the approved WMCP in 2014 indicates a 42 percent unaccounted for water. Attributable to a higher level of water loss during the 2014 study was inaccurate meters and deteriorated distribution pipe. Through the leak detection performed in 2019/20, the operator discovered a substantial leak on the asbestos-concrete transmission line which was repaired in 2020. The operator estimated the leak was ≈1 million gallons per month. Raw water production has decreased substantially since this repair, from 100 MG annually to 65 MG in 2023.

The City of Amity, through normal operations and system reviews, line flushing, fire hydrant testing and small leak repair, estimates an approximate 4.0 MG of water are accounted for every year. Referencing table 1-4 on page 9, supplies information about non-revenue, loss water percentages for each year 2019 through 2023. With 43.4 MG annual average consumed over the five-year timeline, and with raw water production at 66 MG (2022-23), unaccounted for water is figured at 35 percent, showing the community is moving in the right direction.

New meters will better define actual consumption levels, which through experience will lower the actual unaccounted-for water 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.

The City of Amity, having 42 percent un-accounted water, has increased its focus on water consumption and production from a managerial perspective. The City of Amity 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 City of Amity is the second document sent to OWRD, as the first WMCP was approved in 2014. 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. From the 2014 WMCP, the city replaced meters, performed intermittent water audits, leak detection in 2019/20 with a major repair completed, provides dye tablets from city hall, and public education on the city's social media page. The new rate structure was completed and implemented in 2021 with emphasis on the consumption charge. Upon completion of this water management conservation plan, the City of Amity will review efforts made in meeting the benchmarks learned and supply a progress report in 2029.

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 Amity adheres to the measurement and reporting requirements found in the Oregon Administrative Rules Chapter 690, Division 85. Flow meters are placed at water intakes, wells, the outlet on the water treatment plant, and service connections on all customers.

Extensions of time for application LL-1180 have been given to the City of Amity for the authorized completion date of 03-04-2025, for the use of 400 gallons per minute (GPM) to authorize five years of water usage from a new point of diversion from November through

June. The city is continuing construction on the new intake and expects it to be fully functional in December 2024. The city adheres to all measurement and reporting requirements.

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 Amity has not implemented other conservation measures. The City of Amity has completed the following:

- Meter replacement
- Leak detection
- Rate structure changes using consumption as the basis for rate implementation.
- Updated billing software
- Use of city website for conservation ideas

The city of Amity 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 (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 Amity 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), but currently all usage is metered.

The operational procedures with WTP realized the filter backwash procedure was occurring too frequently. The replacement of the intake pump reduced the sediment uptake during raw water pumping, reducing the turbidity levels thus reducing the need to perform a filter backwash. It is the reduction in backwash times that will reduce the overall unaccounted-for water. Tracking this water estimates an additional ten percent reduction in unaccounted-for water.

Benchmark: These operational procedures (review figures for production, consumption, distribution system inspections, operational efficiencies) will be ongoing annually as one in the set of benchmarks for this WMCP.

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 Amity is a fully metered water system which includes meters on both the raw water sources (surface water intake) and consumer connections. Currently, the water system is considered fully metered. Production meters are read daily, and consumers' meters are read monthly.

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

A meter testing and maintenance program.

The City of Amity biggest effort towards conservation is the replacement of customer meters in 2021-22. Newer meters have a minimal test and maintenance requirement, as the meters have no moving parts, the electronics are battery operated. 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. Source meters are tested when a divergence is discovered during monthly water production data is reviewed.

The main benchmark the City of Amity will employ is the continuation of monthly data review on both the source and customer meters. The city will add information pertaining to water conservation on the water bills.

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 Amity has in place an increased block rate structure for water usage, which was implemented in 2024. Water rates and authorized charges are set by the 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 Amity currently has a five-year annual unaccounted for water loss average at 42 percent. The five-year timeframe shows a 12 percent reduction of unaccounted for water due to leak detection, finding an annual estimated leak at 10 MG. The 30 percent water loss in 2023 will likely be reduced further with the installation of new water meters in the past few years. The Water Master Plan estimated in 2014 water loss at 43 percent, which OAR 690-086-0150(5) mandates system leakage is reduced to 15 percent with an eventual goal towards ten percent. The primary source of unaccounted-for water were inaccurate meters, leaking pipes and overflow automation inoperative.

The City of Amity has presumed the potential factors for water loss coincides with the points in the 2014 Water Master plan, i.e., failing infrastructure in areas of asbestos-cement piping, meters and operational procedures (new procedures to track line flush, hydrant test), tracking water loss estimating leak repairs. The area of focus will be creating a unit of measure for each leak repaired, quantifying the total annual gallons from leaks, and applying those figures to the unaccounted-for water measurement. The overflow mechanism was repaired in 2021.

The City of Amity will apply the following benchmarks during the 2024-2026 fiscal years.

- *Verify production meters annually and calibrate if greater than 3 percent variation.*
- *Review proper application of meters for classification of user – initially.*
- *Continue to review billing software for accuracy. It started in 2021.*
- *Perform annual leak detection in areas noted by Public Works Supervisor.*
- *Review river intake and WTP operations for water use increases and adjust WTP to reduce operational water.*

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 Amity has consistently looked at methods to sustain or improve on lowering water loss. Changes in system operations, looking at main distribution lines, flow testing will supply more information as it relates to water loss. Both apparent and real losses are considered when approaching a properly operated water system.

The goal with this WMCP is to implement actions that are feasible from two perspectives, a) time of personnel, and b) monetary availability. With activities stated in the above subsections, the City of Amity through 2024-25 will discern the results of the benchmarks implemented.

Multiple leaks repaired over the past three years have reduced total water extracted from the Yamhill River, reducing the water each year from 100, to 87 to 65 MG. Reducing water loss another 10 percent to 20 percent total is the goal through 2026, then creating an annual leak detection program. The leak detection program will be performed in areas adjacent where the most leaks have been discovered. The detailed for pipeline replacement will track the findings of the leak detection program with reference to old steel pipe and smaller diameter pipe or those areas mentioned in the 2014 Water Master Plan. The water loss control program actions will be highlighted in Table 2-1, Water Loss Activity Matrix. Those activities correspond to the ability for the city to conduct said activities.

The two-step benchmark approach will be to implement routine leak detection, with costs associated with contracted services for leak detection, beginning in 2025. Priority line replacement (repair bands) will continue annually while unaccounted for water remains above 10 percent. The second approach will perform those tasks highlighted in Table 2-1 on page 23.

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 Amity supplies information on drinking water in the annual Consumer's Confidence Report. The city of Amity highlights fun facts pertaining to both indoor and outdoor water activities. The city's current communications encourage efficient water use and using low flow household fixtures and best practices for outdoor watering.

The City of Amity 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 Amity will continue to support the education of its community regarding water conservation by using an effective approach to the city's website and free brochures found at city hall.

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 Amity does propose to expand or start diversion of water under an extended permit for the primary reasons; a) the City of Amity water supplies are speculated to be adequate utilizing the existing permit and certificates, b) the City of Amity does not serve a population greater than 7,500, c) the City of Amity has been managing the existing water sources in compliance with various regulations pertaining to stream flow dependent species established by both State and Federal Agencies. Permit S-39599 describes the minimum fish flow needs (persistence target flows) in the South Yamhill River.

Certificate 61988 will share the allocation of water with Permit S-39599 and apply raw water pumped, providing 0.95 CFS (426 GPM) which is adequate to meet the future demand.

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

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

The City of Amity, serving a population of less than 2,000 population is challenged to support financially, conservation programs when dollars are better used elsewhere. With their website, the city provides technical or financial ideas pertaining to behaviors in water use. The City of Amity does not have allocated funds to support water rebate program for conservation equipment. Ideas for implementation for the 2024-2029 fiscal years will include dialogue with the larger (commercial) water users about:

- *Annual meetings on conservation ideas at their facilities.*
- *Water saving equipment.*
- *Ground maintenance and drought tolerant plants.*
- *Look at irrigation schedules for efficiency, xeriscaping.*

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 ultimately offers considerable water saving potential in the home and business. The City of Amity currently provides dye tablets to assess toilet leaks and will keep a small basket of aerators (25 items) and low flow shower heads (efficient fixtures) (25 items) for its citizens in addition to the dye tablets.

The primary effort towards using water conservation devices will be found in brochures and links on the city's website. The City of Amity 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 dye tablets, 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, it explains the rate structure in effect in January 2021. This structure is aligned to better support water conservation. Currently the rate structure is a base rate (including 200 cubic feet or 1,496 gals) for the monthly service and extra water is charged using an increased block rate. Each block of water consumed is measured in 100 cubic feet, with various levels ranging from $5.00 to $8.40 per unit. See appendix E Water Rates Table 2024.

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

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

For the City of Amity the design of the wastewater system as part of the water reuse and recycling. The City of Amity irrigates ≈ 14.0 acres for hay production located in Township 3-S Range 3W, Section 36, lot 1700, which is owned by the city. The irrigation site is buffered with 70-75 strips of land. Total effluent applied to the acreage each year is ≈ 8.15 MG.

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 Amity has not found any other conservation measures that would improve water use efficiency. The efforts and benchmarks completed over the next five years will be as follows:

- *Implement production meter (source) calibration / accuracy tests.*
- *Perform annual leak detection in areas chosen by Public Works Director.*
- *Review operational procedures at WTP to increase efficiency.*
- *Review monthly usage of customer billing for discrepancies.*
- *Track water use characteristics (GPCD) for increases as billing is completed monthly.*
    - *Initiated by the new meters able to discern abnormal water flows.*
- *Review proper application of meters for classification of user – initially -2025.*
- *Work with commercial entities to ways to reduce water consumption.*
- *Continue to review billing software for accuracy. Started in 2021*
- *Promote conservation through the city's webpage and handouts placed in conspicuous places, i.e., library, post office, bulletin boards in public facilities to educate the public, simple reminders.*
- *Provide low-flow devices to citizens, continue with dye testing tablets.*
- *Maintain a water rate structure based on consumption.*

The City of Amity will apply the following benchmarks during the 2024-2026 fiscal years.

In the table on the following page, are activities coordinated with the above bullet items based on a timeline from short-term though long-term approach in conservation. Actions taken by the City of Amity 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 - New 2021	**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,					
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. Generally, 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, depending 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 source(s) within the past 10 years. Their single water source (Yamhill River) can be subjected to contamination, the intake can be obstructed delaying water production and with the wells unable to provide potable water for treatment, the community could be considered vulnerable. The lack of an alternative water source is a limiting factor. With just over 1 MG of storage and daily demand at 0.12 MG, the city could curtail minimum usage to the community to maintain six days of supply during a water shortage, or a mechanical interruption. Figures assume reservoirs are operating at 80 percent.

During a drought declaration by the Governor, the City of Amity notifies its customers of the impending conditions and asked its constituents for voluntary reduction in water usage or move towards a mandatory water reduction. If consumption figures exceed water production by for more than three days, the city will implement level alert one.

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 Amity 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 this plan to be activated 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 heat weather, consumption of more water, or a decline is production capabilities for the WTP.
- 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 Amity 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 are diminishing more rapidly.
    - Customer usage increases, or major leaks are 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 or any action that may reduce flow capacity below 80%
♦ Decline or impedance of river flows
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 the water system is reduced to 80% of full flow
♦ Primary supply production capacity is reduced to less than 75% capacity
Serious Alert Level
♦ Water use reaches 90% of capacity (water production) for three consecutive days
♦ Pumping capacity is reduced to 70% of normal production
♦ Normal flow in the water system is reduced to 70% of full flow
♦ The area is declared a severe drought 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
♦ Normal flow is reduced to 50% in water system
♦ A natural disaster that incapacitates the water system, or contaminates the water source
♦ Intentional act causing long-term disabling of the water system or sustained deficit of water
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 carried out by the City of Amity City Administrator with aid from the Public Works Director. A brief mention of curtailment actions by the city is in ordinance 500.

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 Amity's policies, will issue a general request for a voluntary reduction in water use by all water users. The request will be made at a time when there is a strong sign that the city's water supply or production capabilities will be reduced below 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 in use, and a warning that mandatory cutbacks will be necessary if the voluntary measures do not sufficiently reduce water usage by 5-10 percent. Also, said will be the time frame for the voluntary reduction will be set up, showing the date and time when 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 Amity will put in place the following:
♦ No flushing of system line unless essential.
♦ Implement schedules for irrigation of lawns and landscape.
♦ Commercial use to be reduced by 10% and residential use by 20%.
♦ Washing of vehicles will be prohibited.
The goal is to support 85% flow rates using a 20% overall reduction in usage.
Critical Level Action (4)
The City of Amity 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's allotment.
♦ Bulk water sales/usage will be stopped until further notice
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 a minimum of 70 gallons per person per day.
♦ Distribution points are set up to provide a minimum of 70 gallons per person per day

Table 3-3: Action Levels of Curtailment

Table 3-3: Curtailment Goals			
Water Curtailment and Reduction Goals			
Shortage Condition	Level	Reduction Usage 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 - 85%	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 area of service for the City of Amity has been recognized under the Yamhill County's Comprehensive Land Use Plan. The Portland State University-Population Research Center (PSU-PRC), Coordinated Population Forecast shows predictions for Yamhill County, its UGBs and areas outside the UGBs. The 2023 statistics forecast found the county's growth through 2045, using the average annual growth rate (AAGR) would average one percent annually over the twenty-five-year period. For the City of Amity, considered by Yamhill County's forecast, the AAGR is 0.7 percent through 2045.[1] The area within the city of Amity UGB, with current available land will suffice for a total population of 2,312 [2] per the estimates found in the Water Master Plan. The Water Master plan was used and approved the WMCP by OWRD in 2014.

Noted in the Water Master Plan, build-out of the UGB will occur by 2026. The City of Amity, with current population at 1826 is not expected to reach saturation development by 2026, but the figures from PSU-PRC estimate the saturation to occur in 2049, five-years beyond the timeline of the WMCP, obtaining an estimated population of 2,294 people. The figures utilized predict a total population increase of 422 people or 17 people annually.

Maps showing the current and future service area can be found on pages 43-45.

1 -https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1071&context=opfp

2 – The City of Amity Water Master Plan 2014 – Keller Associates

Table 4-1: Population Forecast

Table 4-1: Population Forecast						
YEAR	**2024**	**2029**	**2034**	**2039**	**2044**	**2049**
Yamhill County [1]	110,167	117,109	122,229	126,668	130,505	133,928
Population + -	6942	5120	4439	3837	3423	Average [2]
% change *	6.3%	4.4%	3.6%	3.0%	2.6%	0.80%
Outside UGB [1]	23,831	24,370	24,709	24,799	24,661	24,342
Population + -	539	339	90	-138	-319	Average [2]
% change	0.4%	0.3%	0.1%	-0.1%	-0.3%	0.02%
Population						
Amity [1]	1,872	1,986	2,089	2,174	2,242	2,294
Population + -	114	103	85	68	52	Average [2]
	1.15%	0.99%	0.78%	0.61%	0.45%	0.16%
Note:						
1- https://docs.google.com/spreadsheets/d/1Q_jk6K843vgAsaB8XXE7m2RYOwyeNBymgrUjgwvMJmU/edit?gid=1255840128#gid=1255840128						
1 - Google docs provided by PSU-PRC's webpages						
2 - Figures from PSU-PRC reports 2023, percentage of change is converted to annual estimates from 5-year estimates						

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 the population forecast due to various factors that may distort the final outcomes. Using data compiled by PSU-PRC prediction for population estimates were factored to year 2044, based on annual growth of 0.16 percent annually, which will be applied for future predictions. The second figure implemented in the forecast equation will be the peak demand of 109 GPCD that is taken from the user averages in Table 1-5, calculated as peak demand over a single month, July 2021. Current Permit Usage is shown in Table 4-2.

Carrying the estimated population to the year 2044, a total population served is estimated at 2,242[1] users, which was taken directly from the PSU-PRC forecast. Using the estimate of 2,242 population and the peak demand of 109 GPCD, this will require an approximate peak water demand at 0.244 MGD or 0.38 CFS.

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

The year 2020 recorded a total pumped gallonage at 100.46 MG, which is 35 percent higher than 2023. The maximum single month during the five-year timeframe is 5.87 MG or 0.303 CFS of required water. An average monthly usage of 3.6 MG (0.19 CFS) over the five-year period standardizes community requirements. These figures represent a snapshot of a single year, substantiated in Table 1-5. It is these amounts of water that the projected water usage will assist in determining the estimated schedule to fully exercise each of the water rights.

Table 4-2, Current Permit Usage represents what has transpired over the past five years. Note, the total water allocated to permit S-39599 could be utilized over the two Yamhill River rights, one permit (S-39599) and one certificate (61988). Overallocation of permit S-39599 was unintentional as the reporting procedures were following previous reports. Permit LL-1180 Is limited in time, allowed while change of the point of diversion is completed.

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)	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)	% total Allowance
NA	GR-417	4/30/1931	Well 1, 2	M	0.1448	0.1448	0.000	0.0%
NA	GR-417	7/31/1953	Well 2	M	0.1337	0.1337	0.0000	0.0%
S -3462	2341	8/7/1917	Spring	M	0.5	0.5000	0.0000	0.0%
S-5481	3920	5/26/1922	Spring	M	0.13	0.1300	0.0000	0.0%
G-4780	42279	4/24/1970	Well 4	M	0.11	0.1100	0.0000	0.0%
G-1283	82452	3/6/1959	Well 3	M	0.45	0.4500	0.0000	0.0%
S-13455	61988	1/24/1939	S Yam Riv	M	0.475	0.4750	0.0000	0.0%
NA	NA	12/9/2019	S Yam Riv	M	0.8912	0.8912	0.0000	0.0%
S - 39599	NA	5/16/1973	S Yam Riv	M	1.000	0.4750	0.5322	112.0%
Totals					3.8347	3.3097	**0.5322**	16.1%

Shaded cells are indicating development limitations associated with permit, certificate

Certificate 61988, same water source as Permit S-39599, could have had water applied to determine diversion amounts

If water had been applied to Certificate 61988, total water diverted for each right would be 0.266 CFS

In preparing a schedule that proves to fully exercise each water right, the City of Amity 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.

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.

The forecasted rate at which City of Amity 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. Total water needed in the future:

- Population Forecast – (2042) 2,242
- Peak Demand – gallons per capita daily 109
- Total gallons per day - 0.244 MG
- Total CFS - 0.38

Table 4-3: Water Demand Projections

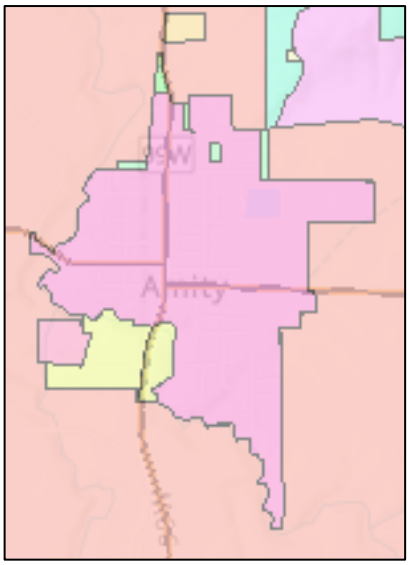
Table 4-3: Water Demand Projections					
Amity	Projected Year				
	2024	2029	2034	2039	2044
Populations	1,872	1,986	2,089	2,174	2,242
Ave GPCD	**69**		Peak GPCD	**109**	
	Million Gallons per Month				
Ave. Month Demand	3,624,165	4,132,558	4,346,885	4,523,756	4,665,254
CFS	0.19	0.21	0.22	0.23	**0.24**
Max Month Peak Demand	5,876,710	6,473,181	6,808,900	7,085,950	7,307,589
CFS	0.303	0.334	0.351	0.365	**0.38**

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. Displaying the “allowed rate with development limitations” at 2.42 CFS (1,081 GPM) and comparing the peak usage against the allowed rates shows 16 percent of total allowed diversions to supply the community.

Through the year 2044, consistent with the figures discovered throughout this WMCP, the City of Amity will require 16 percent of the existing water rights or 0.38 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 usage. The zoning map (insert) surrounding the City of Amity is farm use, extended farm use which at some point could be converted to rural residential or annexed as a UGB expansion.



Comparison of both average and peak demands currently and projected 20-years show the increase required by the city of Amity and shown in Table 4-4: Applied Permit Forecasts.

Table 4-4: Applied Permit Forecasts

Table 4-4: Applied Permit Forecasts

Permit	Certificate	Allowed Rate Development Limitations	Daily Usage CFS [1]	Peak Daily Usage CFS [1]	2024	2029	2034	2039	2044	Total % each permits
Population					1,872	1,986	2,089	2,174	2,242	
GPCD Peak Demand					**109**					
Projected Water Usage (CFS)*					0.31	0.33	0.35	0.37	0.38	
NA	GR-417	0.1448	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
NA	GR-417	0.1337	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
S -3462	2341	0.5000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
S-5481	3920	0.1300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
G-4780	42279	0.1100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
G-1283	82452	0.4500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
S-13455	61988	0.4750	0.00	0.00	0.16	0.17	0.18	0.18	0.19	
LL - 1180	NA	0.8912	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
S - 39599	NA	0.4750	0.26	0.303	0.16	0.17	0.18	0.18	0.19	
Totals		**2.42**	**0.26**	**0.303**	0.31	0.33	0.35	0.37	0.38	**16%**

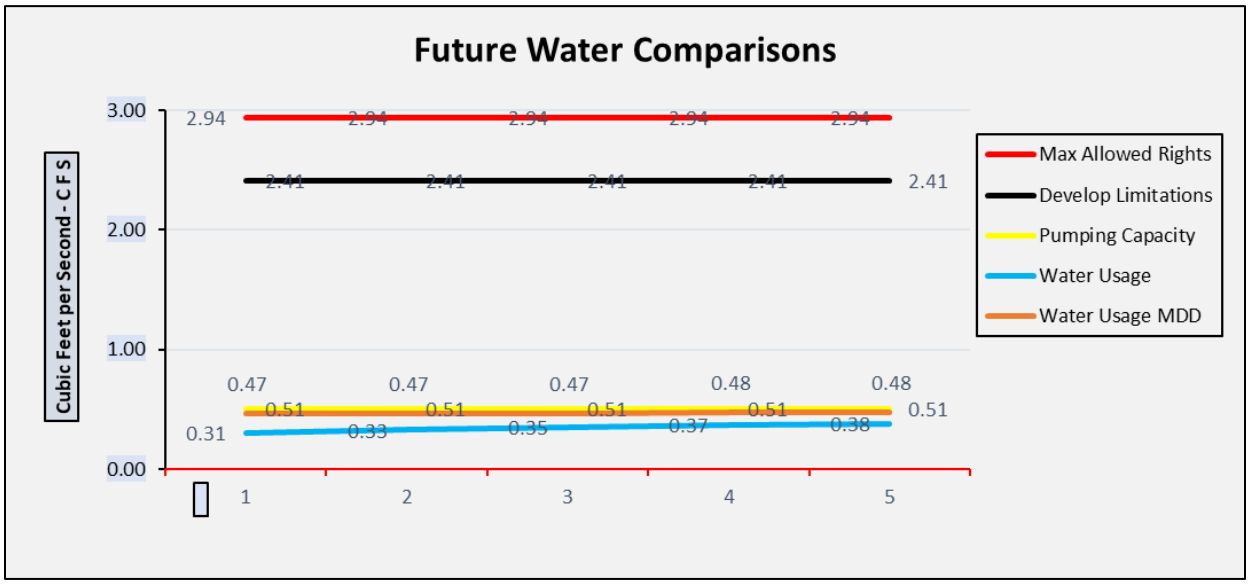
Grey shaded cells are indicating development limitations as noted under "Allowed Rate"

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, provides the comparison of the projected required water for City of Amity which is 0.38 CFS, (170 GPM) based on peak demand for the year 2044. The city of Amity's projected use at 0.38 CFS from the total available source of water, and their reliability are deemed adequate.

Chart 4-1: Future Water Requirements:



The City of Amity has situated itself with a water source that may be interrupted due to low stream flows, contamination as it relates to both quantities and qualities of water. The city already has in place information relating to more storage capacity and a WTP plant upgrade, when another filter process is put in place, giving an added 200 GPM in production capabilities. Keeping the highest quantity of water in storage is a means to mitigate any situation related to the Yamhill River.

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 likely environmental impacts. The analysis shall consider the extent to which the projected water needs can be satisfied through: (a) implementation of conservation measures identified under OAR 690-086-0150.

Through implementation of conservation steps, i.e., review of consumption cycles, rate settings, consumer informational packets, leak detection - repairs, and meter calibration, the City of Amity has named conservation measures that are both practical and possible at this time.

It is the goal of the City to reduce the quantity of raw water from the source by implementing conservation measures. Alternative water sources, a review of well logs with the service and surrounding areas, indicates groundwater is prone to low producing wells, yet some wells in the UGB and east of the community have produced 100 plus GPM. Surface water permit S-39599 for the first 0.475 CFS (213 GPM) is not and will not be conditioned for maintaining fish persistence. This 0.475 CFS seems adequate in meeting the needs of the community for the

duration of the WMCP through the year 2044. The City of Amity will monitor all production water and delivery methods to retain the current water permits 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 Amity has no emergency inter-tie with any other entity as the distance to create an inter-tie is not financially feasible. The city of Amity 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.

At this time, the City of Amity has not developed any other conservation measures that will affect the cost of supplying water. The primary focus in conservation efforts is to reduce the demand on their existing raw water supplies through decreasing the unaccounted-for water, reducing the strain on and retaining current 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 permits and certificates is necessary for existing or future needs. Table 4-5 below shows usage rates as they relate to the permit(s) or certificate(s).

Table 4-5 shows the development limitations at 2.42 CFS (1,086 GPM) and with current average daily usage (0.31 CFS) (139 GPM) and the future peak demand (0.38 CFS)(170 GPM) the City of Amity will continue to put forth an effort to manage the water usage in a responsible manner. The figures prove production, usage and unaccounted for water are a work in progress. Enhanced routine methods will be implemented for two purposes, a) to reduce the overall percentage of unaccounted-for water, b) to recognize areas of apparent losses. The two methods will more accurately define the balance of water during the update of this WMCP.

Another consideration discovered is the multitude of other permits allowed to the City of Amity, those not associated with the Yamhill River. Totaling 1.47 CFS (695 GPM), the certificates and registrations should be considered in the future to use in developing additional water sources. The Yamhill River certificate and permit total 0.95 CFS (426 GPM).

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 (CFS)**	**Monthly Maximum Quantity Allowed (MG)**
GR-417	0.1448	0.1448	64.99	0.00	2.81
GR-417	0.1337	0.1337	60.00	0.00	2.59
S -3462	0.50	0.50	224.40	0.00	9.69
S-5481	0.13	0.13	58.34	0.00	2.52
G-4780	0.11	0.11	49.37	0.00	2.13
G-1283	0.45	0.45	201.96	0.00	8.72
S-13455	0.475	0.475	213.18	0.00	9.21
LL - 1180	0.8912	0.8912	399.97	0.00	17.28
S - 39599	1.0000	0.475	213.18	0.53	9.21
Total	2.94	2.42	1085.42	0.53	64.17
1- No development limitations, 2- With development limitations, Maximum Rate Allowed figured using development limitation					

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

City of Amity will be expanding or begin initial diversion under their existing permits and certificates. The City of Amity has followed both Federal and State rules under the Safe Drinking Water Act. Rules are in place and followed as it relates to stream flow management and minimum fish persistence target flows. The wells are in an area that is considered a “limited groundwater” location. Regarding the Clean Water Act, actions are required by City of Amity for the discharge of wastewater effluent follow the rules implemented by the State of Oregon Department of Environmental Quality (DEQ) and the limits of discharge to the receiving surface waters.

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 Amity to attain new water rights within the next 20-years, as the city is currently forecasted to use 0.38 CFS of 2.42 CFS (with development limitations) or 16

percent through the year 2044, or when it is assumed, saturation is completed with a total population of 2,294 full-time residents.

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 Amity is charged with the conservation and management of the State's water. Through a series of steps outlined in section 2, the City of Amity currently meets all the requirements in the following manner. Annual Water audit, full metered system (replacement of new meters in 2021), leak detection and repair, rate structure that encourages conservation and a public education program. Pending on results of upcoming years water loss reports (2029), such evidence will guide the City Council to add steps if necessary.

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 Amity, for several reasons, is strategically found between two larger municipalities, but relating to regional water management and interconnections, it is physically unlikely to develop an inter-tie with any entity due to associated cost. The City of Amity'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 Amity 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 are proven adequate in terms of both quantity and quality both 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 Amity 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 Amity 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 public education will begin a new era of water control and management.

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 Amity's sources are the most feasible and appropriate supply. The City of Amity has not considered an alternative supply source. An increase in capacity has been considered on the storage component, which mitigates the need for additional water. The City of Amity's personnel are aware of production capacities, aesthetics in water quality, and flows in the Yamhill River and its tributaries. The City of Amity uses this information for the best management of both the quantity and quality of water, making the current source the most feasible and appropriate supply. Review of wells throughout the area has provided inconsistent information regarding production capacities, yet some wells could become an optional source for the city, if necessary.

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 Yamhill River, which is listed in the 2022 Integrated Assessment Report. The river was reviewed for many assessments and labeled as having an Environmental Protection Agency approved plan for total maximum daily loads (TMDL), the amount of a pollutant that can be present in a water body.

The City of Amity is not required to submit a TMDL implementation plan.[1] The status of the Yamhill River is listed as a category 5, spanning from river miles zero to 11.2 or as it intersects with the Willamette River, twelve miles eastward of the Amity service boundaries. Appendix D provides additional information. This plan contains information proving any concerns identified under OAR 690-086-0140(5)(i) are relevant to the water sources used by the City of Amity, who is in compliance with the mitigation requirements.

1 - https://www.oregon.gov/deq/FilterDocs/chpt14wqmp.pdf

Greenlight Water Worksheet

*(**NOTE**: Water suppliers are encouraged to include this worksheet as part of their WMCP. Use additional sheets as necessary.)*

1. 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*)**
S-39599	1.00 CFS – 448 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?

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 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*)**
S-39599	0.475 CFS – 213 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.

If **YES**, Items **A** and **B** below must be addressed in the water supplier's WMCP being prepared for submittal:

A. 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

Appendices A: Notice of WMCP

To:

- Yamhill County Planning Department – Ken Friday – 503.434.7516
    - kfriday@co.yamhill.or.us
- Region 22 Water Master – Joel Plahn – 503.508.2394
    - joel.plahn@water.oregon.gov
- City of Sheridan – Kie Cottam – PW Director - 503.932.6599
    - kcottam@cityofsheridanor.com
- City of Willamina – Jeff Brown – PW Director – 503-437-6998
    - brownj@ci.willamina.or.us

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.

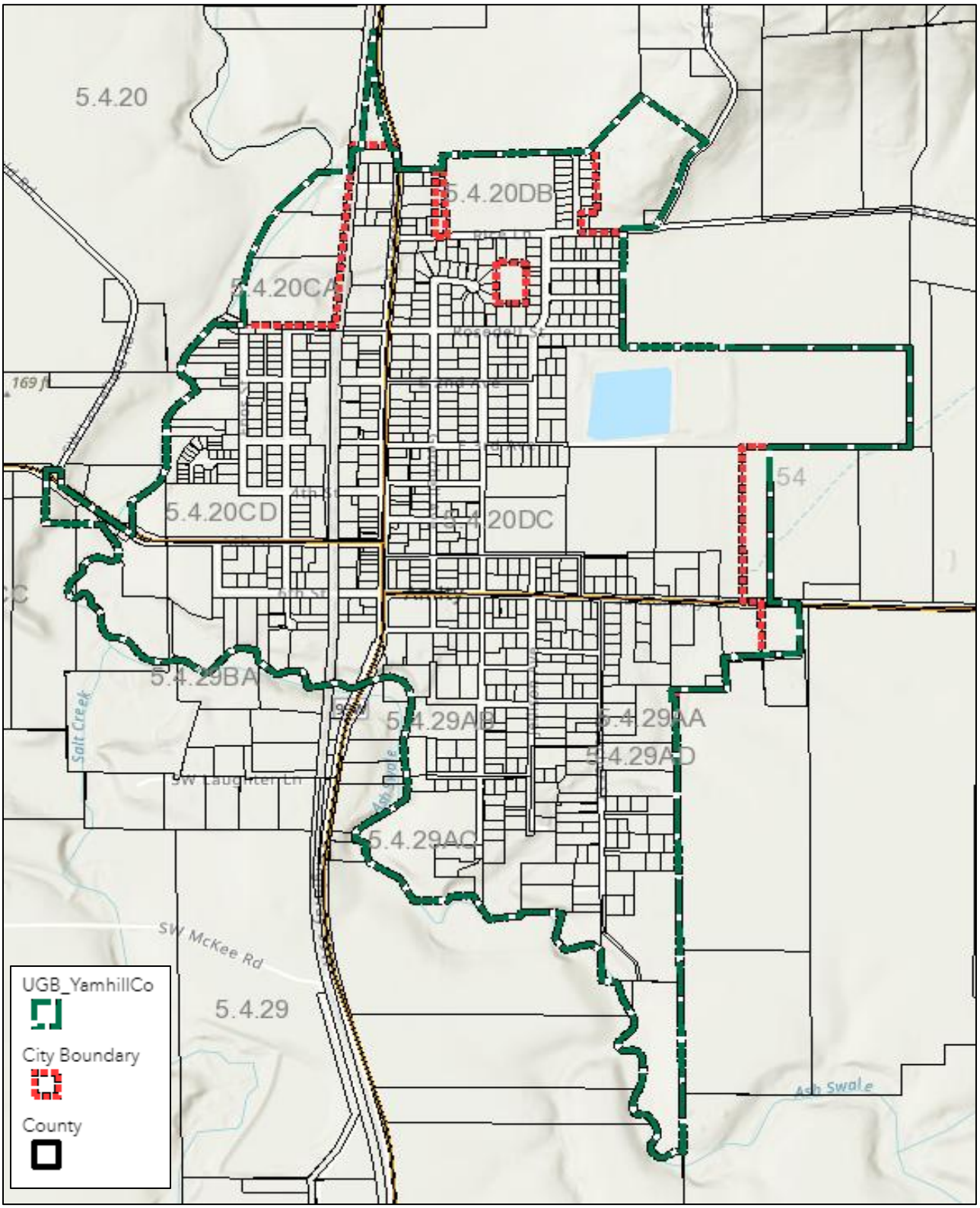
Please provide a reply within thirty (30) days or sooner of receiving this e-mail so we may move forward with this project. We appreciate the time spent under review. Please send any questions or comments to Nathan Frarck, City Administrator at nfrarck@ci.amity.or.us

Sincerely,

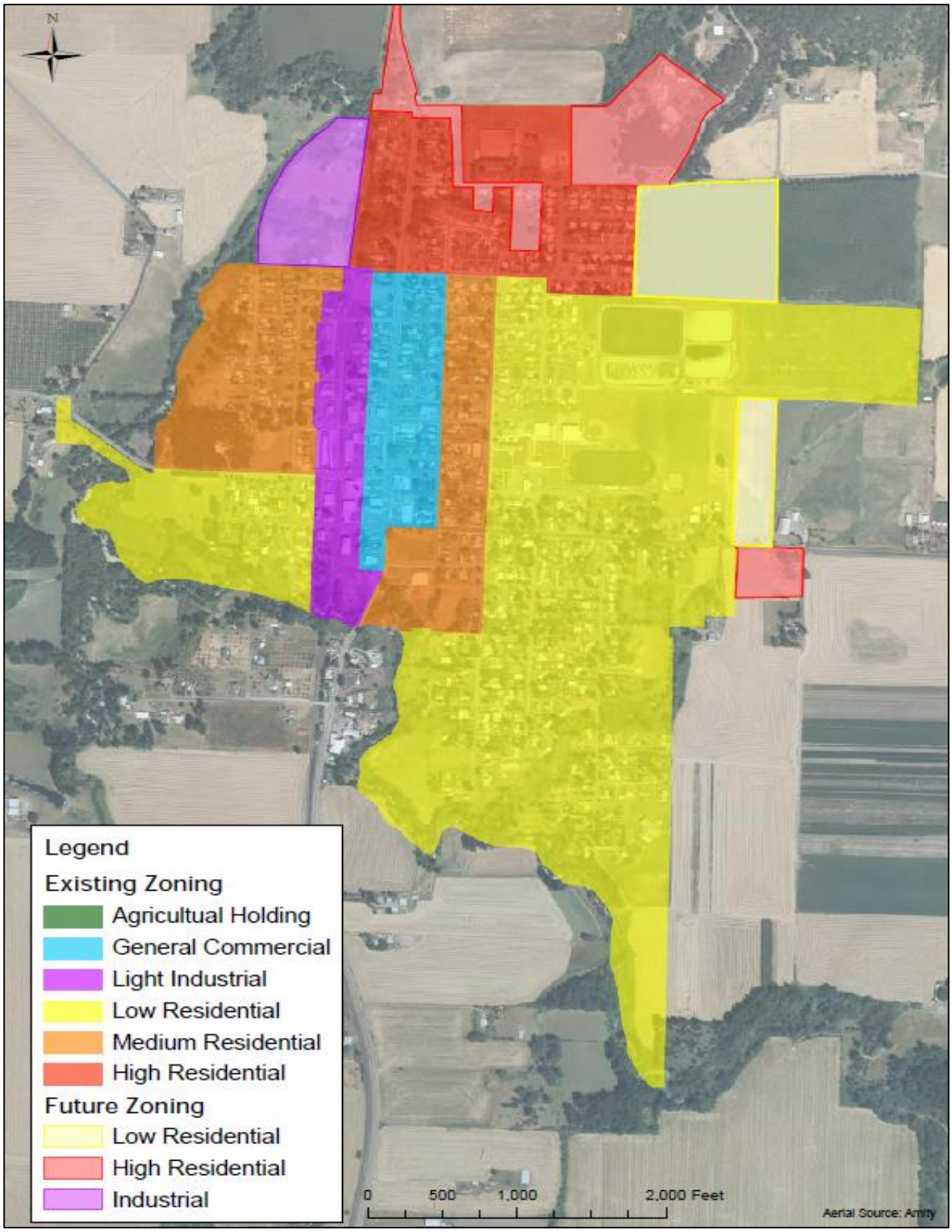
Nathan Frack – City Administrator

City of Amity

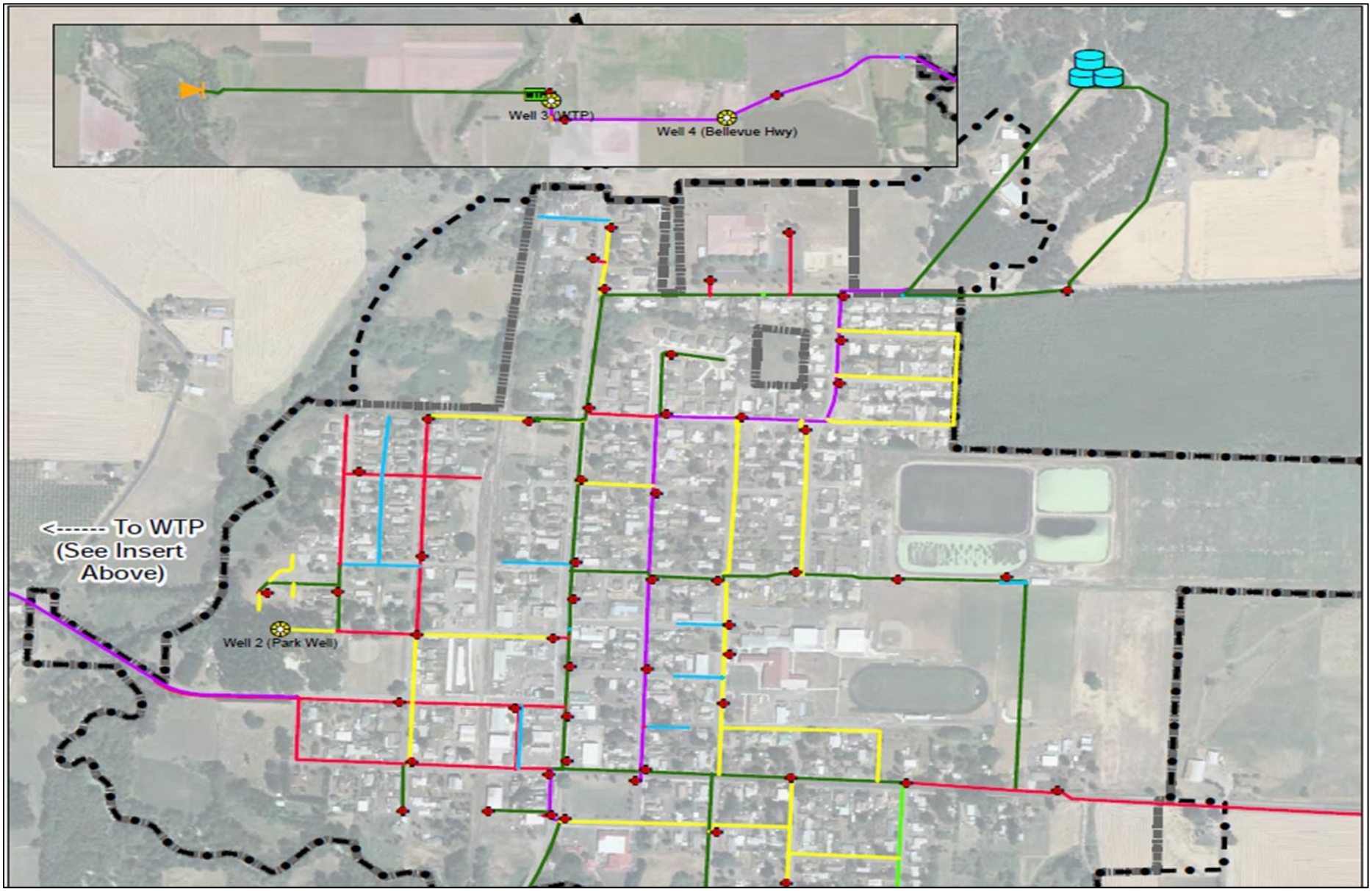
Appendix B: City Land Use Information



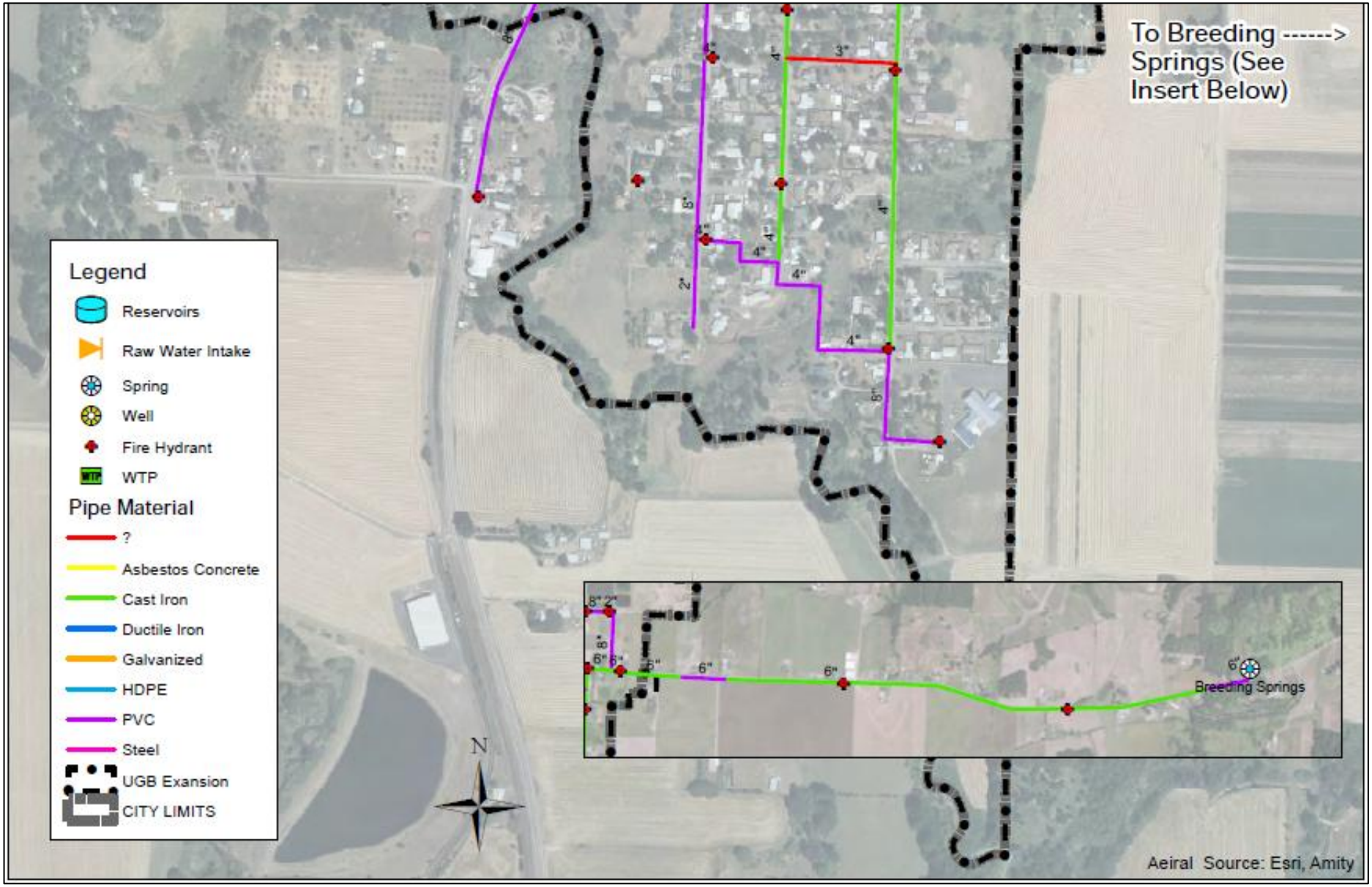
Map provided by Yamhill County - https://www.yamhillcountymaps.com/.



Attributed to Water Master Plan – Keller Associates


Well 3 (WTP)
Well 4 (Bellevue Hwy)
<------ To WTP
(See Insert
Above)
Well 2 (Park Well)

Distribution System – Main City with urban growth boundary



Appendix C – Water Permits, Extensions, and Certificates


Permit G_1283.pdf


Permit G_1283.pdf


Permit G_4780 Cert 42279.pdf


Permit G_4780.pdf


Permit S_3462 Cert 2341.pdf


Permit S_3462 Certificate 2341.pdf


Permit S_5481 Cert 3920.pdf


Permit S-13455 Cert 61988 T-13121 Preli


Permit S-13455 Cert 61988 T-13121 FO A


Permit S-13455 Cert 61988 T-13121 Preli

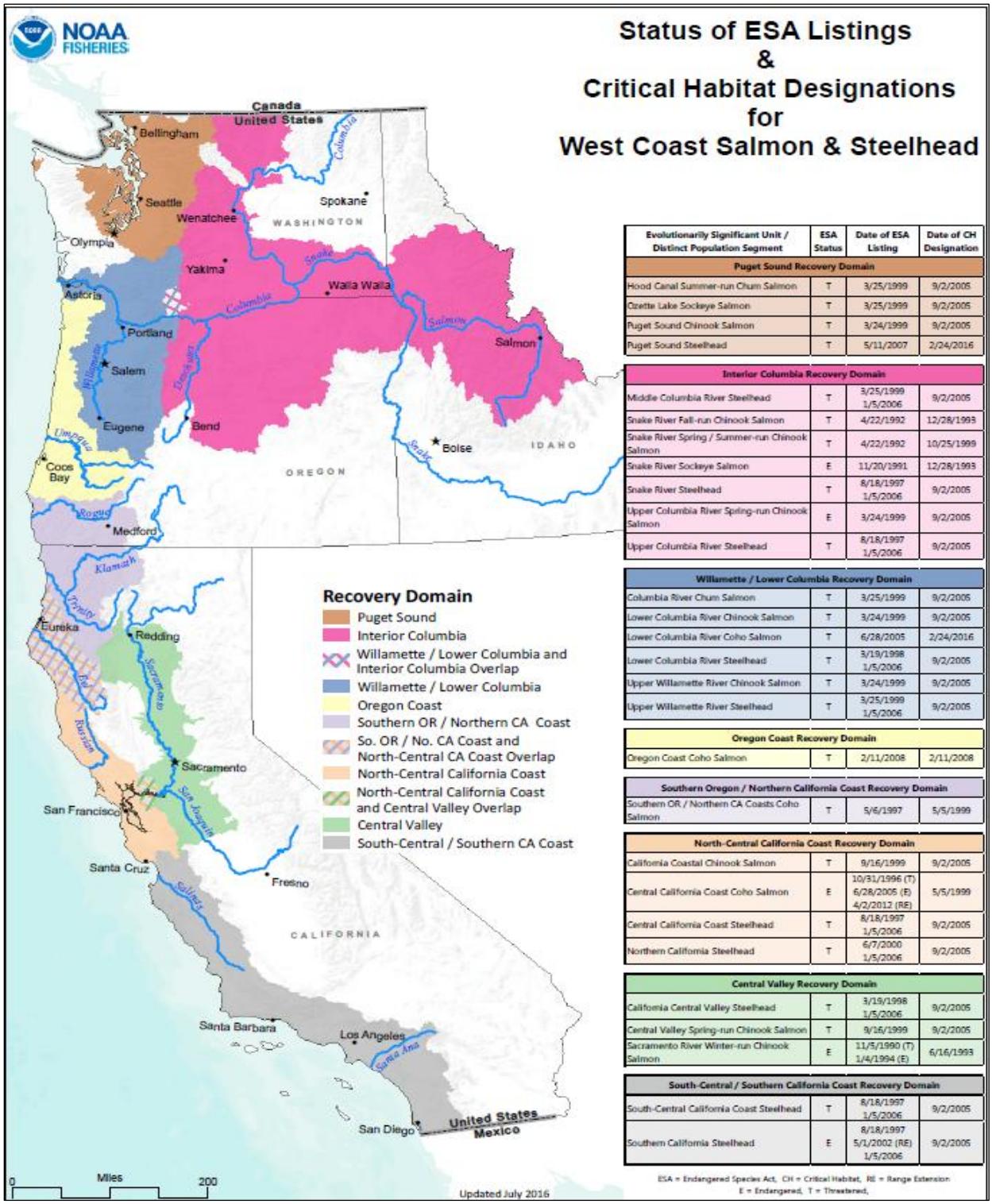

Permit S-13455 Cert 61988 T-13121 Preli


Permit S-39599 Ext Final Order.pdf


Permit S-55335.pdf


Permit S-55335.pdf

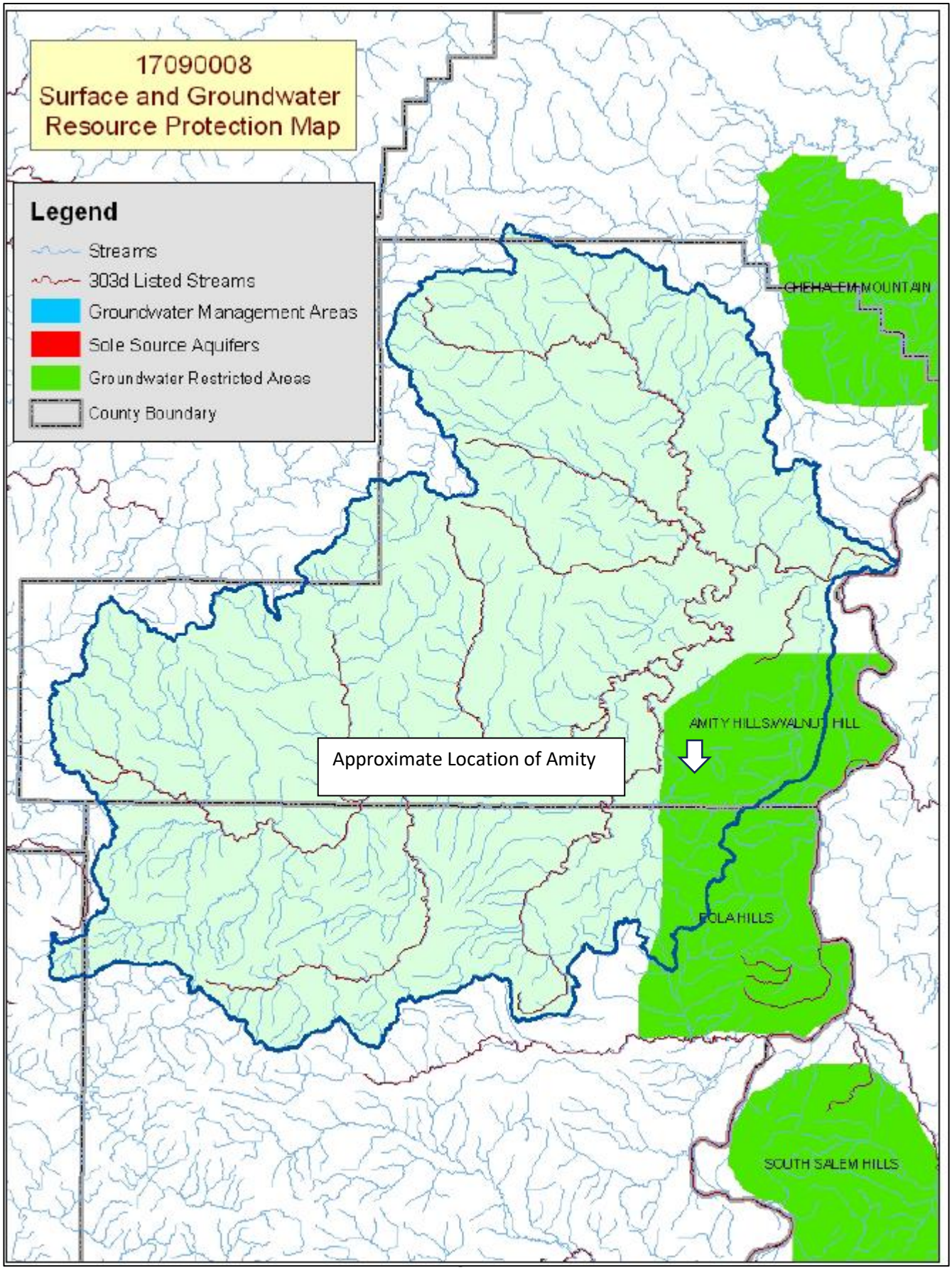
Appendix D: Environmental Information



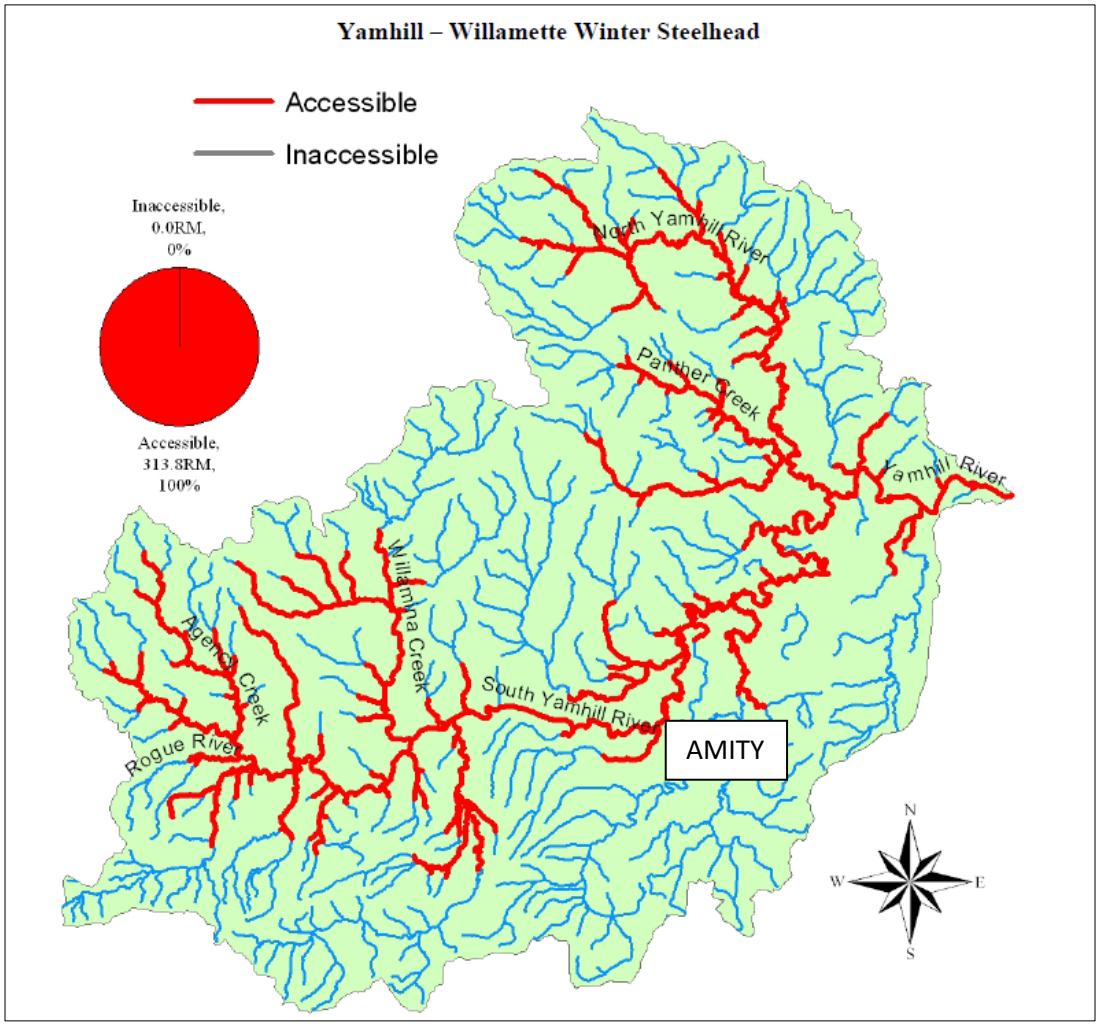
Evolutionarily Significant Unit / Distinct Population Segment	ESA Status	Date of ESA Listing	Date of CH Designation
Puget Sound Recovery Domain			
Hood Canal Summer-run Chum Salmon	T	3/25/1999	9/2/2005
Ozette Lake Sockeye Salmon	T	3/25/1999	9/2/2005
Puget Sound Chinook Salmon	T	3/24/1999	9/2/2005
Puget 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

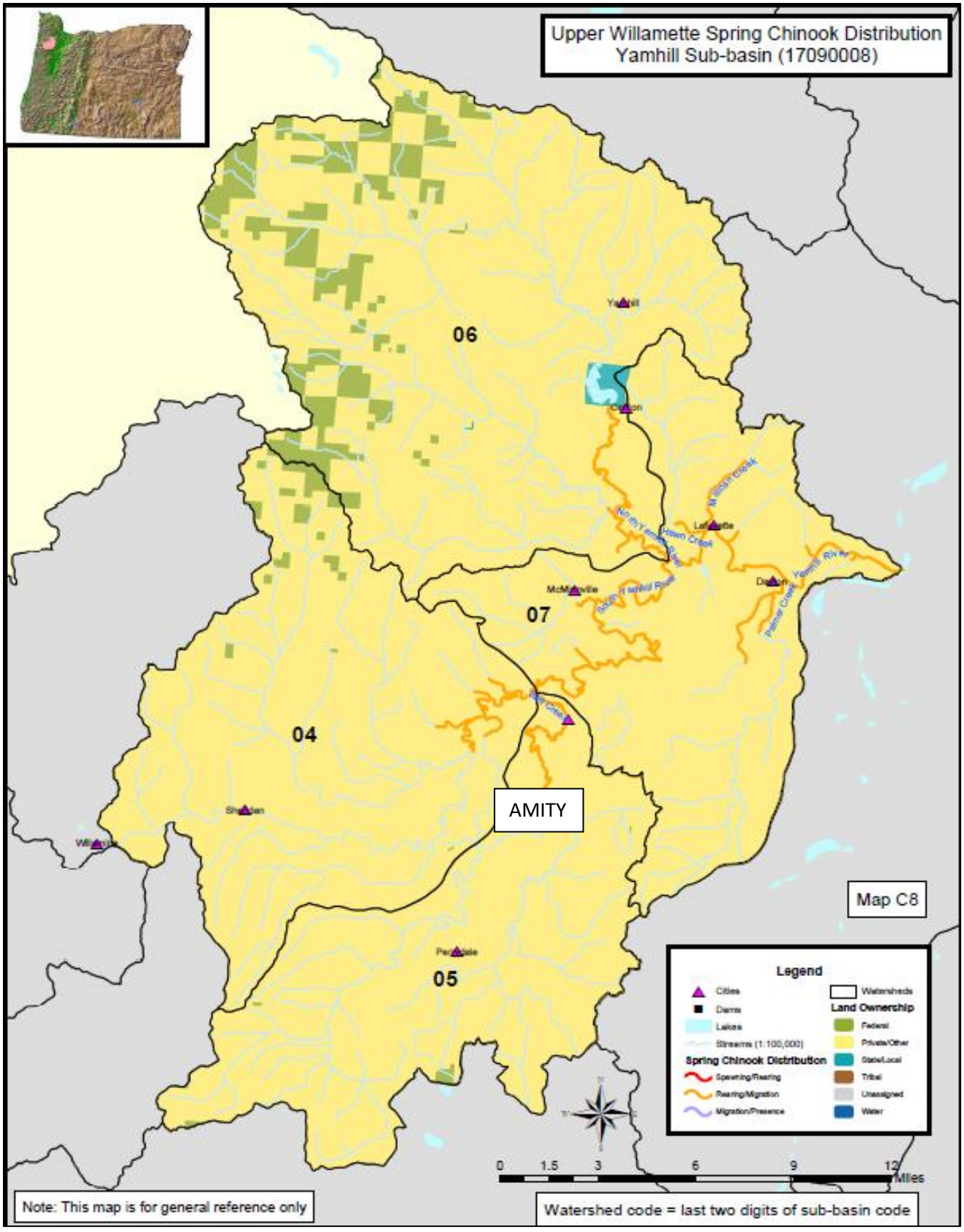
ESA = Endangered Species Act, CH = Critical Habitat, RE = Range Extension
E = Endangered, T = Threatened,

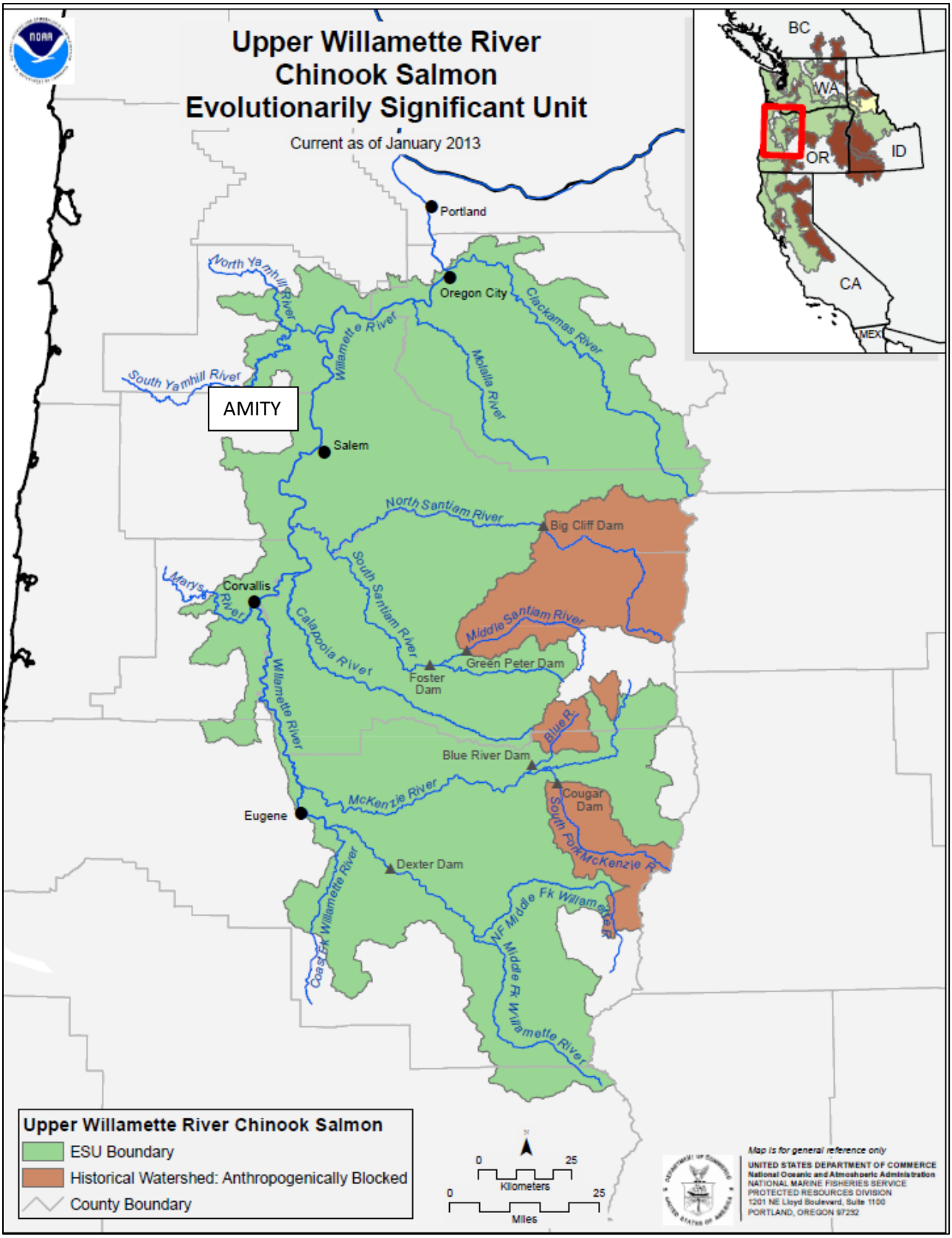
Willamette / Lower Columbia Recovery Domain			
Columbia River Chum Salmon	T	3/25/1999	9/2/2005
Lower Columbia River Chinook Salmon	T	3/24/1999	9/2/2005
Lower Columbia River Coho Salmon	T	6/28/2005	2/24/2016
Lower Columbia River Steelhead	T	3/19/1998 1/5/2006	9/2/2005
Upper Willamette River Chinook Salmon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

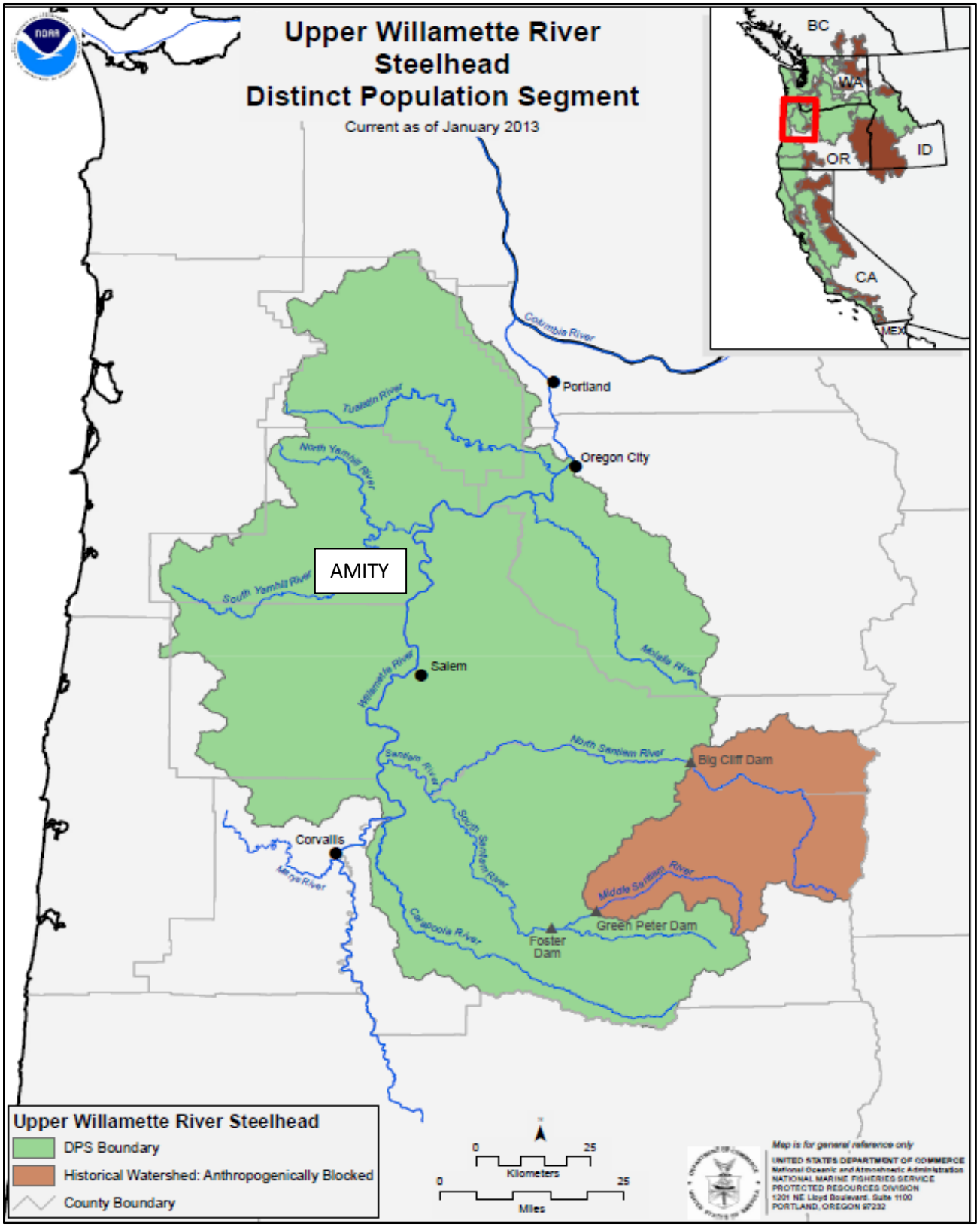

17090008
Surface and Groundwater
Resource Protection Map
Legend
Streams
303d Listed Streams
Groundwater Management Areas
Sole Source Aquifers
Groundwater Restricted Areas
County Boundary
CHEHALEM MOUNTAIN
AMITY HILLS/WALNUT HILL
Approximate Location of Amity
EOLA HILLS
SOUTH SALEM HILLS

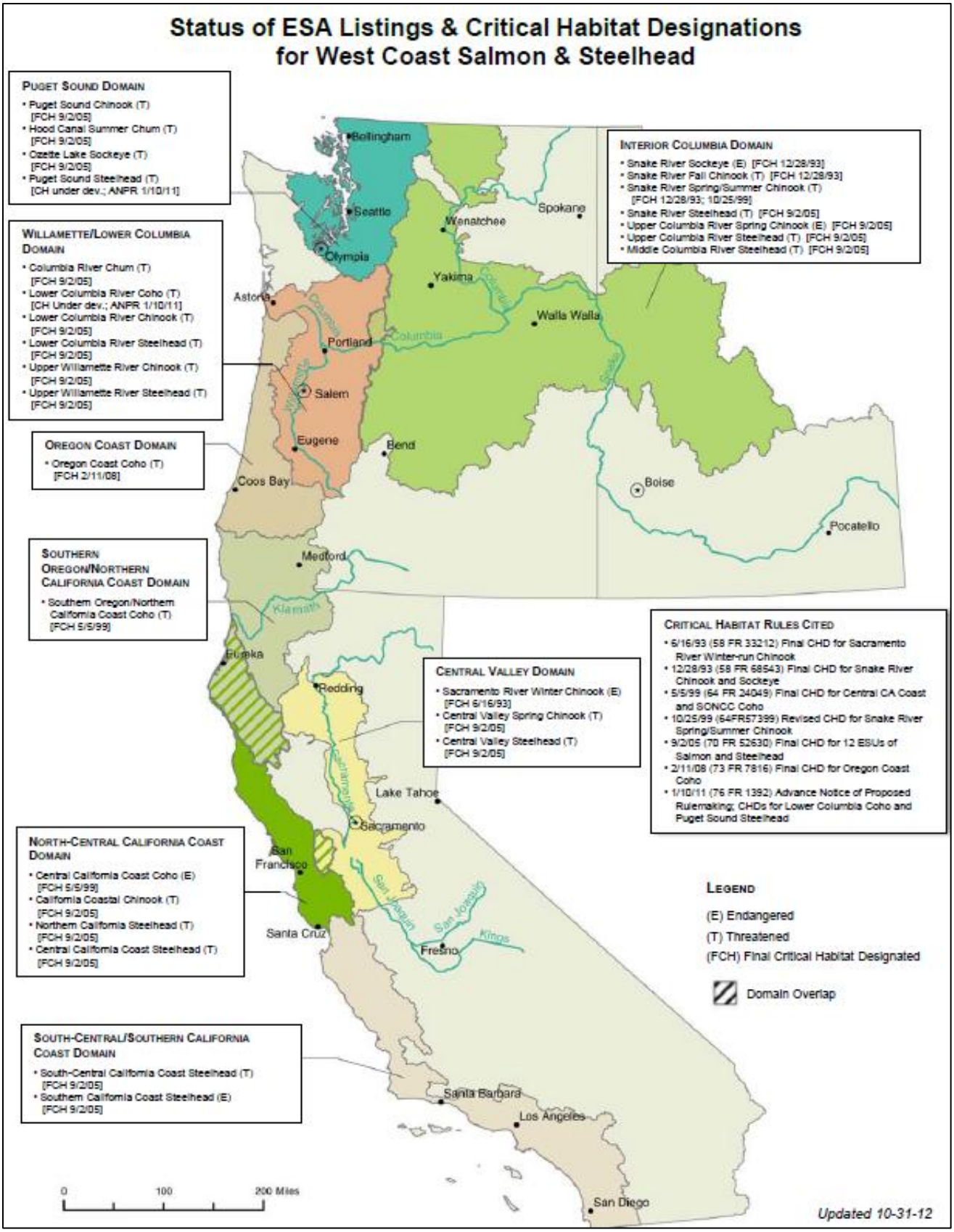
Amity Hills – Groundwater Limited Area proximity to City Amity 2.0-2.5 miles




Upper Willamette Spring Chinook Distribution
Yamhill Sub-basin (17090008)
06
07
04
05
AMITY
McMinnville
Dayton
Lafayette
Yamhill
Willamina Creek
Haworth Creek
Palmer Creek
Yamhill River
Map C8
Legend
Cities
Dams
Lakes
Streams (1:100,000)
Spring Chinook Distribution
Spawning/Rearing
Rearing/Migration
Migration/Presence
Watersheds
Land Ownership
Federal
Private/Other
State/Local
Tribal
Unassigned
Water
0 1.5 3 6 9 12
Miles
Note: This map is for general reference only
Watershed code = last two digits of sub-basin code


Upper Willamette River
Chinook Salmon
Evolutionarily Significant Unit
Current as of January 2013
BC
WA
OR
ID
CA
MEX
Portland
Oregon City
North Yamhill River
Willamette River
Clackamas River
Molalla River
South Yamhill River
AMITY
Salem
North Santiam River
Big Cliff Dam
Mary's River
Corvallis
South Santiam River
Calapooia River
Middle Santiam River
Green Peter Dam
Foster Dam
Willamette River
Blue R.
Blue River Dam
McKenzie River
Cougar Dam
South Fork McKenzie R.
Eugene
Dexter Dam
Coast Fk Willamette River
NF Middle Fk Willamette R.
Middle Fk Willamette River
Upper Willamette River Chinook Salmon
ESU Boundary
Historical Watershed: Anthropogenically Blocked
County Boundary
0
25
Kilometers
0
25
Miles
Map is for general reference only
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
PROTECTED RESOURCES DIVISION
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232


Upper Willamette River
Steelhead
Distinct Population Segment
Current as of January 2013
BC
WA
OR
ID
CA
MEX
Columbia River
Portland
Oregon City
Tualatin River
North Yamhill River
South Yamhill River
AMITY
Willamette River
Salem
Molalla River
North Santiam River
Big Cliff Dam
Santiam River
South Santiam River
Middle Santiam River
Green Peter Dam
Foster Dam
Calapooia River
Corvallis
Marys River
Upper Willamette River Steelhead
DPS Boundary
Historical Watershed: Anthropogenically Blocked
County Boundary
0
25
Kilometers
0
25
Miles
Map is for general reference only
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
PROTECTED RESOURCES DIVISION
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232


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

Yamhill River Area 2022 Integrated Water Quality Report:

AU_Name	AU_Description	Pollutant	Parameter category	Year Assessed	Year listed
Salt Creek	Hoekstre Slough to Ash Swale	E. coli	2	2018	
Salt Creek	Hoekstre Slough to Ash Swale	pH	2	2018	
Salt Creek	Hoekstre Slough to Ash Swale	Alkalinity	2	2018	
Salt Creek	Hoekstre Slough to Ash Swale	Ammonia	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	E. coli	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	pH	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Alkalinity	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	BHC Gamma (Lindane)	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Chlordane	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Chlorpyrifos	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	DDT 4,4'	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Dieldrin	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Endrin	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Guthion	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Heptachlor	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Heptachlor Epoxide	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Malathion	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Methoxychlor	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Polychlorinated Biphenyls (PCBs)	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Pentachlorophenol	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Ammonia	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Endosulfan	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Acenaphthene	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Aldrin	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Anthracene	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Benz(a)anthracene	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Benzo(a)pyrene	3D	2018	

Salt Creek	Ash Swale to confluence with South Yamhill River	Benzo(b)fluoranthene 3,4	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Benzo(k)fluoranthene	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	BHC Alpha	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	BHC Beta	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	BHC Gamma (Lindane)	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Butylbenzyl Phthalate	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Chlordane	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Chlorophenoxy Herbicide (2,4-D)	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Chlorophenoxy Herbicide (2,4,5,TP)	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Chrysene	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	DDD 4,4'	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	DDE 4,4'	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	DDT 4,4'	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Dibenz(a,h)anthracene	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Dieldrin	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Diethyl Phthalate	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Dimethyl Phthalate	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Dinitrotoluene 2,4	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Endosulfan Alpha	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Endosulfan Beta	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Endosulfan Sulfate	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Endrin	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Endrin Aldehyde	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Ethylhexyl Phthalate bis 2	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Fluoranthene	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Fluorene	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Heptachlor	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Heptachlor Epoxide	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Hexachlorobenzene	3D	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Hexachlorocyclopentadiene	3	2018	

Salt Creek	Ash Swale to confluence with South Yamhill River	Isophorone	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Methoxychlor	2	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Pentachlorophenol	3	2018	
Salt Creek	Ash Swale to confluence with South Yamhill River	Pyrene	3	2018	
South Yamhill River	North Yamhill River to Salt Creek	E. coli	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Chlorophyll-a	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Dissolved Oxygen	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	pH	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Alkalinity	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Arsenic, Inorganic	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Chloride	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Cadmium	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Lead	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Nickel	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Silver	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Zinc	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Ammonia	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Aluminum	3B	2022	
South Yamhill River	North Yamhill River to Salt Creek	Arsenic, Inorganic	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Copper	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Nickel	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Selenium	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Zinc	2	2022	
South Yamhill River	North Yamhill River to Salt Creek	Antimony	2	2018	
South Yamhill River	North Yamhill River to Salt Creek	Barium	2	2018	
South Yamhill River	North Yamhill River to Salt Creek	Thallium	3D	2018	
South Yamhill River	North Yamhill River to Salt Creek	Copper	2	2022	
South Yamhill River	Willamina Creek to Salt Creek	Fecal Coliform	5	1998	1998
South Yamhill River	Willamina Creek to Salt Creek	Dissolved Oxygen	5	2018	2012
South Yamhill River	Willamina Creek to Salt Creek	Temperature	5	1998	1998

South Yamhill River	Willamina Creek to Salt Creek	Temperature	5	2010	2010
South Yamhill River	Willamina Creek to Salt Creek	Phosphorus	4A	1998	1998
Salt Creek	Ash Swale to confluence with South Yamhill River	Fecal Coliform	5	2002	2002
Salt Creek	Ash Swale to confluence with South Yamhill River	Chlorophyll-a	5	2018	1998
Salt Creek	Ash Swale to confluence with South Yamhill River	Dissolved Oxygen	5	2018	2012
Salt Creek	Ash Swale to confluence with South Yamhill River	Dissolved Oxygen	5	2018	2012
Salt Creek	Ash Swale to confluence with South Yamhill River	Temperature	5	2018	2018
Salt Creek	Ash Swale to confluence with South Yamhill River	Phosphorus	4A	1998	1998

Appendix E: Water Rates

EFFECTIVE NOVEMBER 1, 2024.

- **Water:**

1. **Standard Water Services Base Rate and Allowance**

Meter Size	Effective Rates*			Allowances (Units)	Gallons
	Residential	Commercial	Outside		
5/8" – 3/4"	$62.07	$69.82	$74.48	2	2000
1"	$86.89	$86.89	$104.28	2.8	2800
1 ½"	$111.72	$111.72		3.6	3600
2"		$179.99		5.8	5800
3"		$682.63		22	22000
*Effective Rates will automatically increase by CPI every January 1st, starting 1/1/25					

2. **Water Service Tiers for consumption**

Tier Levels	Per Unit			Usage (Units)
	Residential	Commercial	Outside	
One	$6.00	$6.00	$7.00	2.1
Two	$7.00	$7.00	$8.20	4.1
Three	$8.00	$8.00	$9.40	8+
*Usage is based on 5/8" & ¾" meters, larger meters will be based on set ratios of these tiers. See City for further information. *Consumption Rates will automatically increase by CPI every January 1st, starting 1/1/25				

Water Meter	Units
Up to ¾"	1.0
1"	2.5
1 ½"	5.0
2"	8.0
3"	16.0
4"	25.0
6"	50.0