Water Management & Conservation Plan

Project No: TC 24-04

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Tri City Joint Water & Sanitary Authority
Water Management & Conservation Plan

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WMCP Checklist

This checklist is provided as a guide to where each required WMCP element is located within the body of the plan. "N/A" is used for sections that do not apply to Tri City.

✓	Item	OAR Reference	Section No.
WMCP Plan Elements			
✓	Notice to affected local government(s)	690-086-0125(5)	**1.5**
✓	Proposed WMCP update schedule	690-086-0125(6)	**1.6**
N/A	Additional time to implement conservation benchmarks	690-086-0125(7)	**1.7**
Water Supplier Description			
✓	Description of supplier's source(s)	690-086-0140(1)	**2.1 and 2.2**
✓	Map/Delineation of current service area	690-086-0140(2)	**2.3**
✓	Assessment of adequacy and reliability of existing supplies	690-086-0140(3)	**2.4**
✓	Present and historic water use	690-086-0140(4)	**2.5**
✓	Water right inventory table	690-086-0140(5)	**2.6, 2.7, and Table 2-12**
✓	Customers served and water use summary	690-086-0140(6)	**2.8**
✓	Interconnections with other systems	690-086-0140(7)	**2.9**
✓	System schematic	690-086-0140(8)	**2.10 and Exhibit 2-1**
✓	Quantification of system leakage	690-086-0140(9)	**2.11**
Water Conservation Element			
N/A	Progress report on implementation of conservation measures	690-086-0150(1)	**3.1**
✓	Water use measurement and reporting program	690-086-0150(2)	**3.2**
✓	Currently implemented conservation measures	690-086-0150(3)	**3.3**
✓	Annual water audit	690-086-0150(4)(a)	**3.4.1**
✓	Full metering of system	690-086-0150(4)(b)	**3.4.2**
✓	Meter testing and maintenance program	690-086-0150(4)(c)	**3.4.3**
✓	Rate structure	690-086-0150(4)(d)	**3.4.4**
✓	Leak detection program	690-086-0150(4)(e)	**3.4.5**
✓	Public education program	690-086-0150(4)(f)	**3.4.6**
✓	System leakage reduction program <15%	690-086-0150(5)	**3.5**
✓	System leakage reduction program <10%	690-086-0150(6)(a)	**3.6.1**
✓	Technical and financial assistance programs	690-086-0150(6)(b)	**3.6.2**
✓	Retrofit/replacement of inefficient fixtures	690-086-0150(6)(c)	**3.6.3**
✓	Rate structure & billing practices to encourage conservation	690-086-0150(6)(d)	**3.6.4**
✓	Reuse, recycling, and non-potable opportunities	690-086-0150(6)(e)	**3.6.5**
✓	Other proposed conservation measures	690-086-0150(6)(f)	**3.6.6**
Water Curtailment Element			
✓	Water supply assessment and description of past deficiencies	690-086-0160(1)	**4.1**
✓	Stages of alert	690-086-0160(2)	**4.2**
✓	Triggers for each stage of alert	690-086-0160(3)	**4.3**
✓	Curtailment actions	690-086-0160(4)	**4.4**
Water Supply Element			
✓	Current/future service area and population projections	690-086-0170(1)	**5.1 and 5.2**
✓	Schedule to fully exercise each permit (*i.e., certification*)	690-086-0170(2)	**5.3**
✓	Water demand forecast	690-086-0170(3)	**5.4**
✓	Comparison of projected need to available sources	690-086-0170(4)	**5.5**
✓	Analysis of alternative sources	690-086-0170(5) & (8)	**5.6 and 5.9**
✓	Quantification of maximum rate and monthly volume	690-086-0170(6)	**5.7**
N/A	Mitigation actions under state and federal laws	690-086-0170(7)	**5.8**
Greenlight Water Request			
✓	Conservation measure schedule and cost effectiveness	690-086-0130(7)(a)	**5.10.1**
✓	Justification that selected source is most feasible/appropriate	690-086-0130(7)(b)	**5.10.2**
N/A	Mitigation requirements	690-086-0130(7)(c)	**5.10.3**

Section 1 - Introduction & WMCP Elements

OAR 690-086-0125

1.1 Purpose / Plan Requirement

Tri City Joint Water & Sanitary Authority (Tri City), located in Douglas County, has developed this Water Management and Conservation Plan (WMCP) to the Oregon Water Resources Department (OWRD), and other interested parties, as part of its mission to provide excellent water services to the community in the most practical and efficient manner. This WMCP provides information and a plan to effectively manage its water rights and enables the development of a comprehensive strategy for meeting the water needs of the community over the next 20 years. The plan describes how Tri City intends to comply with regulations designed under Oregon Administrative Rules (OAR) 690-086, including how it will improve the efficiency of the water system and use of its critical water resources.

Tri City is submitting this WMCP in response to a Final Order approving and Extension of Time for Tri City's water use Permit #S-40699. Approval of the extension application triggered the need to prepare and submit a WMCP as directed under OARs 690-215 and 690-086. The final order included a "Development Limitations" condition that limits the amount of water that Tri City can divert to no more than 1.78 cfs under the extended permit (out of the permitted 3.00 cfs). The final order also includes a condition to "maintain the persistence of listed fish". Under this condition, the first 1.78 cfs of the permitted 3.00 cfs "is not and will not be conditioned for maintaining fish persistence." The remaining 1.22 cfs of the permitted 3.00 cfs is conditional on flow (cfs) in the South Umpqua River at Gage Station 14312000 base upon a table in the final order.

Tri City has not previously developed a WMCP and seeks to coordinate this newly submitted plan with the requirements of OAR 690-086 rules. Tri City is coordinating this WMCP with a renewal if its 20-year Water System Master Plan as defined under OAR 333-065.

1.2 Plan Organization

This WMCP is organized in a manner consistent with OAR 690-086:

- Section 2: Describes the water supply system, including key demographic information, water consumption, and the type of infrastructure present in the water system.
- Section 3: Identifies the conservation measures the District has implemented and proposed new measures with associated benchmarks for each new measure.
- Section 4: Describes the tools available to the District in the event of a water emergency, including a water curtailment plan.
- Section 5: Uses the information presented in Section 2 to forecast future demand, compare that demand to present water rights, and assesses the need for additional source water diversions.

1.3 Summary of Data Sources

Throughout this WMCP are references to data, most of which were obtained from Tri City files including records of pumping withdrawal, customer billings, land use planning, operational control, and conservation program implementation. Historical data related to service area, such as connections and demand, were obtained from Tri City's utility billing system, Tri City's water demand management software system (SCADA), and Tri City's previous water system planning studies and available historic information, including the Water System Master Plan. Historic demographic data were also obtained from the 2020 United States Census.

1.4 Input During Plan Development

To develop this WMCP, Tri City staff and consultants have worked together to examine a range of water management alternatives. A draft WMCP was also submitted to Douglas County, City of Riddle, City of Myrtle Creek with a request for comments. A final version of this plan was presented to Tri City's Board of Directors and approved on February ??, 2025.

1.5 Affected Local Governments

OAR 690-086-0125(5)

Thirty days prior to submitting this WMCP to OWRD, Tri City provided notice of availability of the draft WMCP for review to all affected local governments (listed below), along with a request for comments related to consistency with the local governments' comprehensive land use plan:

- Douglas County Planning Department
- City of Myrtle Creek
- City of Riddle
- Others?

Comments were received from the ??. A copy of the notification letters and the comments received are included in the Appendix of this WMCP.

1.6 Plan Update Schedule

OAR 690-086-0125(6)

Following OAR 690-086-0125(6), Tri City proposes to submit a progress report on or before December 2029 (*five years*) to review noted benchmarking and water use progress, and to submit an updated WMCP at the end of the 10-year period in 2035 (prior to January 2035).

1.7 Request for Additional Time for Metering or Benchmarks

OAR 690-086-0125(7)

Tri City provides information in this plan concerning metering or benchmarks to be discussed in greater detail later in this plan.

Section 2 - Municipal Supplier Description

OAR 690-086-0140

This section is written to satisfy the requirements of OAR 690-086-0140. It describes Tri City's water sources, service area, population served, existing water rights, and demands for water. It also considers the adequacy and reliability of Tri City's existing water supply. This section provides a description of Tri City's customers, their water use patterns, the water system, interconnections with other water suppliers, and a quantification of system leakage.

2.1 Water Sources and System Description

OAR 690-086-0140(1)

2.1.1 Description of Water Sources

Tri City's primary raw water source is the South Umpqua River, which is a tributary of the Umpqua River. The South Umpqua is approximately 95 miles long and conveys water through a portion of the Cascade Range in remote canyons in the upper reaches, ending in the South Umpqua Valley near Roseburg. The water's source is the high Cascades north of Fish Mountain, formed by the confluence of two short forks in eastern Douglas County approximately 20 miles northwest of Crater Lake. It flows generally southwest through a remote canyon in the Umpqua National Forest to Tiller, then west past Milo. It emerges into the South Umpqua Valley at Canyonville, passing under Interstate 5 and flowing north along the freeway past Tri City, Myrtle Creek, and Roseburg. It joins the North Umpqua from the south forming the Umpqua River approximately 6 miles northwest of Roseburg. It receives other tributary waters from Cow Creek from the south approximately 5 miles southwest of Tri City. Flow in Cow Creek is regulated, and storage is provided by the Galesville Storage Reservoir near Azalea. The 167-foot-high dam stores 42,225 acre-feet of water, of which 4,450 acre-feet is designated for municipal purposes. Tri City holds surface water storage rights for water stored in Galesville Reservoir, which is discussed in detail below. This water is used primarily to supplement flow in the South Umpqua river during times of water right restrictions.

Tri City draws water from the South Umpqua River through Johnson Fish Screens which allow water to flow into a concrete wet well buried at the riverbank. Water is pumped from the wet well to the nearby water treatment plant. The intake structure is located approximately at river mile 153.75. The oldest water use permits list the point of diversion (POD) as 2030 feet south and 500 feet east of the northwest corner of Section 5 in Township 30 S, Range 5 West. The newer permits list the POD at 2400' S and 550' E of the NW corner of Section 5.

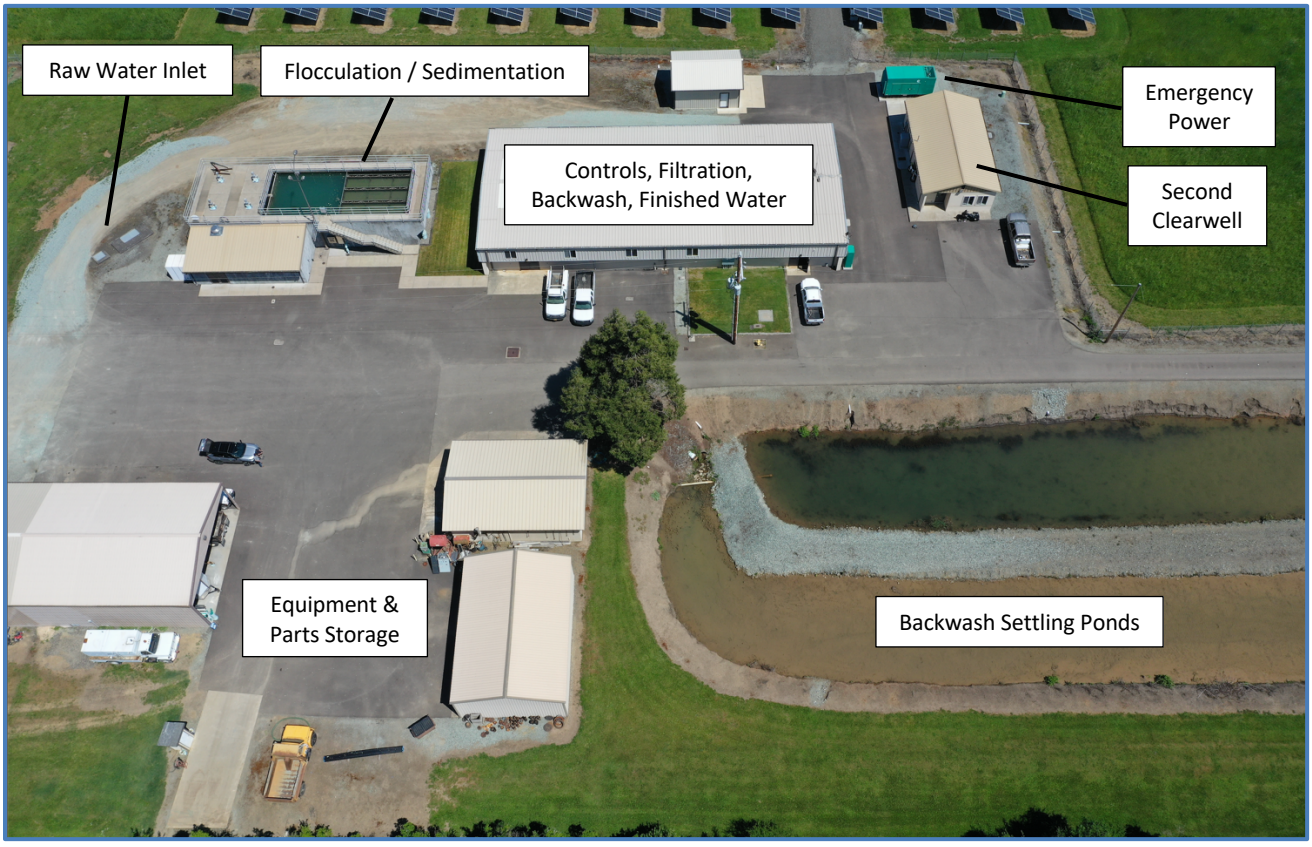
Additional information pertaining to Tri City's water rights is located in Section 2.6. A detailed description of Tri City's water rights is provided below in Table 2-12; Tri City Water Rights Inventory.

2.1.2 Source Treatment

Tri City's original water treatment facility was constructed in the 1950's; however, none of these facilities remain today. The current water treatment facility was primarily constructed in 1979. Improvements at that time included the main building (119' x 54') with filter equipment room, pump room, and chlorine storage and chlorine equipment rooms. An underground concrete clearwell was constructed below the pump room. A Keystone packaged treatment plant was installed inside the building which included hydraulic flocculation, tube settler sedimentation, and 4 dual-media filters.

Design hydraulic capacity for the treatment facility was generally constructed to support 2.6 mgd. Some components were constructed to support this capacity, while others were installed with lower capacity meeting the demand at that time. In the year 2000, plant upgrades were constructed to enable the full plant treatment capacity to 2.6 mgd (1805 gpm). The improvements included a second clear well, a new exterior flocculation/sedimentation basin, new chemical feed and storage equipment and space, new pumps, and updated control system. Unfortunately, the improvements did not enable the plant to operate at the full flow of 2.6 mgd without overflow of the filters. Later improvements to the treatment facility include the installation of a new power service, standby emergency power generator and automatic transfer switch, and the construction of a new solar power array that provides significant energy and cost savings for plant operation.

Figure 1.2 – Aerial View of Tri City's Water Treatment Facility



2.1.3 Transmission/Distribution

Tri City has a water distribution system network of pipe sizes ranging from 2-inch to 16-inch pipes. The total lineal feet of each nominal pipe size are summarized in Table 2-1 below.

Table 2-1
Summary of Water Distribution Piping

Pipe Diameter Size (inches)	Total Length (feet)	Percent of Total (%)
Less than 2	620	0.4
2	9,875	6.3
4	7,095	4.5
6	53,500	34.0
8	37,500	23.8
10	6,030	3.8
12	40,380	25.7
16	2,410	1.5
Total	**157,410 (29.8 miles)**	**100**

Tri City's water distribution system is primarily constructed of PVC materials and generally installed after 1980. Piping in the system includes sections of 6-inch, 8-inch and 10-inch AC (asbestos cement) materials. A precise inventory of all material types is not available for the distribution system.

2.1.4 Finished Water Storage

Tri City maintains four above ground reservoirs with a total operating storage volume of 2.02 million gallons. Approximately 51,000 gallons of additional storage could be provided by raising the various high-water alarms and full depth settings slightly closer to the overflow elevations. The location of each reservoir is shown on the system map Figure A1. A summary of available finished water storage and overflow elevation for each tank is provided in Table 2-2.

Table 2-2
Finished Water Storage Summary

Reservoir	Storage (gallons)	Overflow Elevation (feet)
Walnut Tank	506,700	856.5
Aker Tank	476,000	854.5
October Tank	947,000	855.0
Back Acres Tank	87,000	1,031.0
*Angus Lane Tank	300,000	1,031.0

* Planned new water tank in early design w/ planned completion in 2026.

2.1.5 Pump Stations

Two public pumping stations are operated in Tri City's water system. Valley Drive Pump Station pumps water to the upper-level Back Acres Storage Tank. Woodcrest Booster Pump Station boosts pressure in a small local area near upper Woodcrest Drive. Table 2-3 summarizes current pump stations and the pumping capacity of each.

Table 2-3 Summary of Pump Capacities

Pump Station	Pump Capacity
Valley Drive Pump Station	339 gpm @ 205 ft TDH
Woodcrest Booster Pump Station	55 gpm @ 85 ft TDH

2.2 Intergovernmental Agreements

OAR 690-086-0140(1)

Tri City currently has two intergovernmental agreements (IGA) on record concerning the domestic water system. These agreements are dated April 3, 1991 and May 18, 1992. The first IGA enabled the construction of a water system intertie between the City of Myrtle Creek's water distribution system and Tri City's water distribution system. This agreement met its purpose, and the intertie was constructed as planned. The second IGA provided a structure for mutual benefit for water use between water systems. A method for determining approval of water use, and costs is provided.

2.3 Current Population and Service Area

OAR 690-086-0140(2)

The Tri City Joint Water & Sanitary Authority is located in southern Douglas County Oregon approximately 20 miles south of Roseburg along Interstate Highway 5 and the South Umpqua River. Tri City is an unincorporated urban area immediately south of the City of Myrtle Creek. Tri City's service area is generally on the east side of Interstate 5 along the South Umpqua River, with some industrial and commercial land west of the interstate. Tri City's boundary encompasses an area of approximately 1,952 acres (3.05 square miles). The entire water system is located inside of this boundary with the exceptions of finished water storage tanks outside the eastern boundary.

Tri City presently provides drinking water to a population of approximately 4,050 people within the service boundary. The area is roughly divided in land use by about 58% single and multifamily dwellings, 13% industrial and commercial enterprises, 10% agriculture, 13% road right-of-way, and 6% other. A map of the Tri City's service area is shown on the Area Map Figure A1.

Population estimates used in this report were developed using the 2020 United States Census, historical growth trends, and growth feedback from Tri City Staff. Tri City's population provided in the 2010 and 2020 census was 3,931 and 4,019, respectively. This growth is an average growth of approximately 0.22% per year over the last 10 years. The average number of individuals per household is approximately 2.37. A summary of recent population from since the 2020 census is shown in Table 2-4.

Table 2-4
Population Estimates

Year	Total Population	Households
2020	4,019	1,695
2021	4,028	1,699
2022	4,037	1,702
2023	4,046	1,706
2024	4,054	1,710

2.4 Adequacy and Reliability of Water Rights/Supply

OAR 690-086-0140(3)

The Tri City Joint Water & Sanitary Authority has historically been granted access to several water rights for a total of 5.21 cubic feet per second as well as stored water in the amount of 95 acre-feet in Galesville Reservoir. Each of these water rights has specific terms, restrictions and priority dates. Table 2-6 summarizes Tri City's water rights. Water rights have historically been restricted during months of low water levels and flow rates in the South Umpqua River. Additional physical constraints occur due to hydraulic limitations of the raw water intake, especially when water levels are low. During times of water restrictions in the South Umpqua River, Tri City can draw water from the river in the amount of the water storage contract with Galesville Reservoir. Tri City's water treatment facility is currently limited to a maximum of approximately 1,800 gallons per minute due to hydraulic limitations of the facility. Tri City is currently developing an updated Water Master Plan that will fully develop alternatives to ensure water needs of the community are supported over the next 20-year planning time horizon through the year 2045. Tri City has perfected each of its water rights except for the right designated under Permit No. S-40699. On January 28, 2022, the Oregon Water Resources Department issued a Final Order concerning an application for extension of time to fully develop the water right to October 1, 2046. The Final Order includes several conditions including the development of this Water Management & Conservation Plan, development limits, fish persistence limitations.

2.5 Water Use Records

OAR 690-086-0140(4)

2.5.1 Average Annual and Average Day Water Use

Table 2-5 summarizes the average annual raw water diverted from the South Umpqua River over the past five years. Water is drawn from the single point of diversion for all water rights from the South Umpqua River.

Table 2-5
Summary of Recent Water Use

Source	Permit No.	Total Production in Million Gallons (MG)					Annual Average
		2018 - 19	2019 - 20	2020 - 21	2021 - 22	2022 - 23	
South Umpqua River	Various	171.631	164.792	157.548	179.063	171.770	**169.961**
Average Day (mgd):		**0.47**	**0.45**	**0.43**	**0.49**	**0.47**	**0.46**

The numbers shown in Table 2-6 are consistent with Tri City's annual water use reporting, as required under OAR 690-085.

2.5.2 Peak Seasonal and Peak Day Water Use

Tri City's daily water system user demand was reviewed between 2019 and 2023. Peak daily demand was 1.62 MG and occurred on July 25, 2022. In general, peak demand occurs each year between the months of July and August. Average annual finished water demand for this period was approximately 425,000 gallons per day. The peaking factor from the peak day and the average daily demand is approximately 2.6.

2.6 Inventory of Water Rights

OAR 690-086-0140(5)

The Tri City Joint Water & Sanitary Authority has historically been granted access to several water rights for a total of 5.21 cubic feet per second as well as stored water in the amount of 95 acre-feet in Galesville Reservoir. Each of these water rights has specific terms, restrictions and priority dates. Table 2-6 summarizes Tri City's water rights.

Tri City has perfected each of its water rights except for the right designated under Permit No. S 40699. On January 28, 2022, the Oregon Water Resources Department issued a Final Order concerning an application for extension of time to fully develop the water right to October 1, 2046. The Final Order includes several conditions including the development of this Water Management & Conservation Plan, development limits, and fish persistence limitations.

Table 2-6 also summarizes Tri City's water use, broken down by the amount diverted under each of its water rights. The table includes: the maximum instantaneous diversion rate to date for each right; the maximum annual quantity diverted to date for each right; and the average monthly and the average daily diversion under each right for the previous five years. Water diversion is estimated and assumes the pre-1958 water rights are utilized first. Blank cells are not populated since it is difficult to determine which water rights are utilized during peak water usage and during rate water restrictions. Average monthly and average daily values for the post-1958 water rights are not reported as these rights are used for short periods during the peak usage season, or when other rights are restricted. These water rights are also subject to restrictions during these peak demand periods.

Diverted water is assumed to be sourced from the senior water rights first, then as more water is needed is then diverted from the next earliest water right. During everyday operation in the off-peak season withdrawn water is not distinguished. As water rights are restricted during low instream flows Tri City is notified of restrictions, and water is tracked by water right. Depending upon the conditions and specific restrictions different water rights are drawn from based upon these restrictions.

Table 2-6
Water Use under Each of Tri City's Water Rights

Source/ Priority*	Permit No.	Maximum Allowed Rate (cfs)	Max. Rate Diverted to Date (cfs)
SUR 3/13/52	S-21179	0.125	0.125
SUR 9/19/56	S-24600	0.07	0.07
SUR 9/19/56	S-24600	0.25	0.25
SUR 9/19/56	S-24600	0.34	0.34
SUR 8/13/56	S-24446	1.0	1.0
SUR** 10/24/73	S-40699	3.0**	1.78
SUR 4/19/79	S-44336	0.425	0.425
SUR*** Galesville	N/A	95 acre-ft	---

* SUR = South Umpqua River. All water rights diverted from a single point of diversion.
** Currently limited to 1.78 per Final Order dated January 28, 2022. EOT granted.
*** Contract water storage of 95 acre-ft at Galesville Reservoir. Contracted July 8, 1994.

2.7 Environmental Resource Issues

OAR 690-086-0140(5)

Tri City's water rights are withdrawn from a single point of diversion in the South Umpqua River. The South Umpqua River is listed in Oregon Department of Environmental Quality's (DEQ) 303(d) list of impaired water bodies for the following parameters at various times of year: chlorine, fecal coliform, pH, aquatic weeds/algae, and biological criteria. The river also violates stream temperature standards. Tri City has a water right that includes conditional restrictions for the persistence of listed fish (Permit No. S 40669) in the amount of 1.22 cfs (out of 3.0) dependent on flows in the South Umpqua River.

A search of NOAA Fisheries online geospatial tool was used to generate a report concerning the location of Tri City's raw water intake. The South Umpqua River is identified as essential fish habitat for Salmon. There is a critical habitat line identified concerning this fish.

2.8 Customer Characteristics and Use Patterns

OAR 690-086-0140(6)

Tri City has historically tracked its water users under the following classifications:

- Residential
- Commercial
- Industrial
- Church
- Restaurant
- Bulk Water
- Other

Water customers identified as residential represent at least one dwelling unit. All residential dwellings are part of the residential classification, including single family, multi-family, condominiums, and mobile homes. Commercial and industrial classification includes all types of commercial and industrial customers within Tri City's boundaries. Restaurants and churches have their own classification outside of commercial. Bulk water service is provided to registered customers through a state-of-the-art bulk water station near the industrial park in the southwest portion of the service area.

As of 2024, Tri City has a total of 1,611 customer accounts. A summary of account history from 2020 to 2024 is provided in Table 2-7. Approximately 94% of Tri City's total connections serve residential customers, which includes single family and multi-family accounts. The residential user class is the largest consumer of water in Tri City's water system, which is approximately 82% of all water produced from 2020 to 2023. By contrast, the commercial and industrial classes have significantly fewer customers, accounting for approximately 10.3% and 6.7%, respectively of all water produced. Other classes consume the remaining 0.6% of all water produced.

Table 2-7
Accounts per Customer Class

	2020	2021	2022	2023	2024
Residential	1,492	1,495	1,498	1,502	1,505
Commercial	85	85	85	85	85
Industrial	6	6	6	6	6
Church	9	9	9	9	9
Restaurant	6	6	6	6	6
Total:	**1,598**	**1,601**	**1,604**	**1,608**	**1,611**

Tri City converts its various water meter sizes into Equivalent Dwelling Units (EDUs) to characterize potential water usage throughout a wide range of connection sizes. An alternate way of examining water use is to treat all connections as if they were a typical residential meter size. Such normalization allows the use to the standardized based on meter size.

Table 2-8 provides a summary of Tri City's 2024 metered accounts and one method for determining equivalent EDUs for each customer class by meter size. More detailed analysis was

developed to assess the actual value of the EDU based on typical residential users, then total EDUs were calculated. In 2024, Tri City has a total of 2,153 EDUs. Tri City's largest customer class are residential users representing 89% of the EDUs in the system.

Table 2-8
2024 Summary of Connections and EDUs (*in parentheses*)

Meter Size	EDU Equivalent	Church	Restaurant	Residential	Commercial	Industrial
5/8" or 3/4"	(1)	8 (8)	4 (4)	1,505 (1,505)	59 (59)	3 (3)
1"	(2.5)	1 (2.5)	1 (2.5)	5 (12.5)	11 (27.5)	1 (2.5)
1 ½"	(5)	0 (0)	1 (5)	1 (5)	3 (15)	0 (0)
2"	(8)	0 (0)	0 (0)	5 (40)	9 (72)	2 (16)
6"	(15)	0 (0)	0 (0)	0 (0)	1 (15)	0 (0)

In analyzing water usage by customer class, the total number of connections was divided by class and normalized into EDUs. The average water use can be divided by the appropriate number of EDUs to obtain a history of normalized use, as shown in Table 2-9.

Table 2-9
Historic Average Annual Water Use – Gallons Per Day Per EDU (gpd/EDU)

Year	Annual Water Use (MGD)	EDUs	Water Use/EDU (gpd/EDU)
2019	0.45	2,131	211
2020	0.43	2,134	201
2021	0.49	2,139	229
2022	0.47	2,144	219
2023	0.46	2,148	214

Tri City's residential users are consuming water per EDU on a level common for communities of this size and type.

2.9 Interconnections with Other Water Supply Systems

OAR 690-086-0140(7)

Tri City currently has a water distribution system intertie with the City of Myrtle Creek. An intergovernmental agreement is in place concerning how to calculate water usage between water systems if the intertie is opened. Manual opening of the intertie is required. Use of the intertie has only occurred on one occasion. Use is currently considered as an emergency water source alternative and not to be used as an alternate source of water.

Planning efforts are underway to consider an additional intertie with the City of Riddle. A water intertie with Riddle could function as a temporary mitigation during the seasonal presence of cyanotoxins in the South Umpqua River.

2.10 System Schematic

OAR 690-086-0140(8)

See the system schematic (Exhibit 2-1) at the end of Section 2, as well as the Tri City Area Map (A1) in the Appendix.

2.11 Water Losses and Non-Revenue Water

OAR 690-086-0140(9)

Unaccounted for water over the past 5 years has generally been between 13.5% and 14.7%. This number is presently computed by simply taking the difference between metered finished water from the water treatment facility and metered water sold. This water loss includes other unmetered water such as system flushing and fire hydrant flushing. It should be noted that water treatment plant process water is not included in this calculation. The calculation is separate and is calculated by the difference between raw water pumped and finished water pumped. Actual water leaks are a part of the total reported unaccounted water. In looking to improve system efficiencies, the Tri City has actively pursued leak detection and repair. A summary of water audit findings for Tri City for the period 2019 through 2023 is shown in Table 2-10. Additional details of Tri City's water auditing program are presented in Section 3.3.1.

Table 2-10
Water Loss Volume as a Percent of Finished Water Pumped*

2019	13.5%
2020	14.7%
2021	14.3%
2022	13.6%
2023	14.3%

*Data from AWWA water audit software and input from plant daily records.

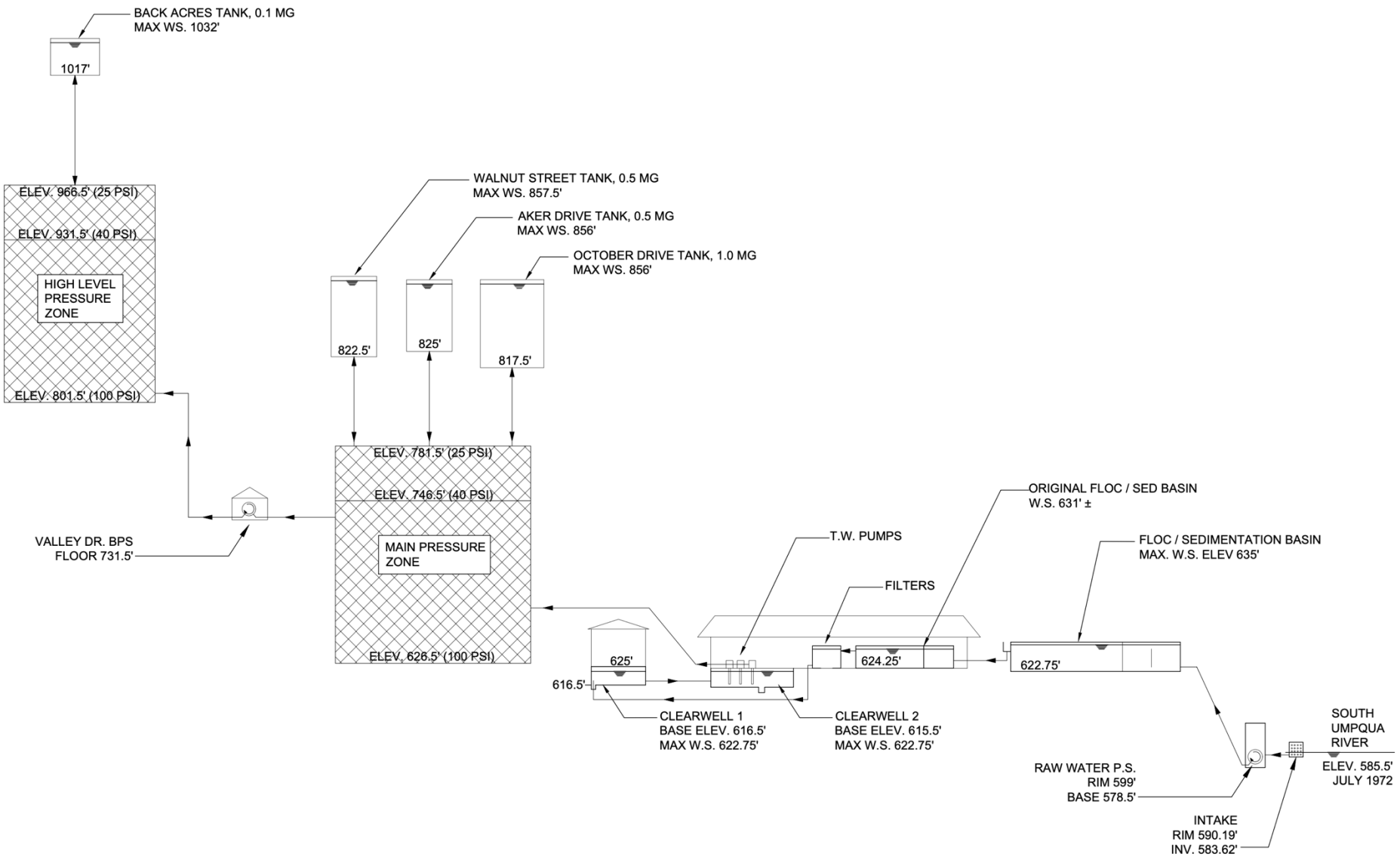
Table 2-11: Tri City Joint Water & Sanitary Authority - Water Rights Inventory

This tabular listing of water rights is provided to comply with the requirements of OAR 690-086-0140(5):

Source	Permit No.	Priority Date	Cert. No.	Use	Maximum Allowed Rate (cfs)	Allowed Rate under Development Limitations Condition and/or Perfected Rate of Certificate (cfs)	Actual Diversion				Authorized Completion Date	Source Issues *Identification of: ST&E species present in the source; Water quality limited parameters listed for the source;*
							Maximum Instantaneous Rate Diverted to Date (cfs)	Maximum Annual Quantity Diverted to Date (MG)	Average Monthly Diversion (MG)	Average Daily Diversion (cfs)		
SUR	S-21179	3/13/52	52975	Municipal	0.125	N/A	0.125	8.14	---	---	N/A Certificated	Max of 25 acre-ft irrigation season
SUR	S-24600	9/19/56	90167	Municipal	0.07	N/A	0.07	4.07	---	---	N/A Certificated	Max of 12.5 acre-ft irrigation season
SUR	S-24600	9/19/56	90166	Municipal	0.25	N/A	0.25	16.3	---	---	N/A Certificated	Max of 50 acre-ft irrigation season
SUR	S-24600	9/19/56	87282	Municipal	0.34	N/A	0.34	22.3	---	---	N/A Certificated	Limited to 68.5 acre-ft annually
SUR	S-24446	8/13/56	30263	Municipal	1.0	N/A	1.0	94	7.8	0.4	N/A Certificated	No restrictions
SUR	S-40699	10/24/73	---	Municipal	3.0 (upon WMCP approval)	N/A	1.78	---	---	---	10-1-2046	EOT & restrictions Per Final Order January 28, 2022
SUR	S-44336	4/19/79	90165	Municipal	0.425	N/A	0.425	40	3.3	0.17	N/A Certificated	No restrictions
Galesville Reservoir	N/A	N/A	---	Municipal	95 acre-ft	N/A	---	13.03	---	---	N/A	Contracted storage

* South Umpqua River is on DEQ's 303(d) list for the following impairments: chlorine, fecal coliform, pH, aquatic weeds/algae, and biological criteria. The South Umpqua River is listed as essential fish habitat for salmon, and there is a critical habitat line identified concerning fish.

Exhibit 2-1 – Tri City Water System Schematic



Section 3 - Water Conservation Element

OAR 690-086-0150

This section is written to satisfy the requirements of OAR 690-086-0150. It describes Tri City's current water conservation program and outlines the Tri City's benchmarks for meeting required conservation measures not currently implemented, if any.

Oregon Water Resources Department issued a Final Order on January 28, 2022. The Final Order extended water use Permit No. S-40699 and specified that a Water Management and Conservation Plan (WMCP) must be submitted by January 28, 2025. This section of the WMCP demonstrates Tri City's commitment to implementing a new program which will improve its water resource management techniques and thereby meeting the intent of the new rules.

Tri City plans to implement a targeted approach to encourage customers to conserve water. Specifically, Tri City chooses to focus efforts on conservation measures which are intended to reduce peak demand by the residential, commercial and industrial water use classes. Tri City intends to take necessary steps to ensure internal practices promote efficient management of critical water resources.

The information provided in this water conservation element details Tri City's new conservation program per OAR 690-086 rules. The organization of this document follows the structure and organization of the new rules.

3.1 Status Report - Scheduled Conservation Measures

OAR 690-086-0150(1)

Tri City has prepared this WMCP as a renewed effort to carefully manage important water resources. Status reports will be submitted in the future concerning scheduled conservation measures, which is anticipated to be completed every 5 years. The planned activities discussed below will be conducted in the coming months and years. The plan identifies conservation measures Tri City could implement to encourage customers to conserve and also to reduce the operational water used by Tri City to provide water and maintain the system.

3.2 Water Use Measurement and Reporting Program

OAR 690-086-0150(2)

Tri City's water use reporting has been completed in compliance with OAR 690-085. The report is submitted annually on October 1 on the form provided by OWRD using the "flow meter method" approved by the Department in OAR 690-085-0015 (5). The master flow meter is Badger Meter Compu-Sonic Series 4500DS and is located on the finished water outlet of the water treatment facility to measure total finished water flow leaving the water plant. The meter is read every day and recorded on plant records. Monthly volumes are accurate within plus or minus 1.5%.

3.3 Other Currently Implemented Conservation Measures
OAR 690-086-0150(3)

No additional implemented conservation measures are noted.

3.4 Basic Conservation Measures Required of All Suppliers
OAR 690-086-0150(4)

This rule applies to all municipal water suppliers. It requires the supplier to establish a schedule with five-year benchmarks for implementation of each of the following conservation measures identified under OAR 690-086-0150(4):

1. Annual water audit;
2. Full metering;
3. Meter testing and maintenance;
4. Rate structure, based upon the amount of water metered;
5. Leak detection if water loss exceeds 10%; and
6. Public education.

Tri City's water rights currently satisfy annual average and peak water demand periods. The water treatment facility is presently limited by several factors, including hydraulic capacity of the water treatment facility. In addition, periods of low water flow and levels in the South Umpqua River can limit the amount of water that can be withdrawn from the raw water intake. Conservation measures described will focus on limiting peak demand.

Historically, approximately half of total annual water consumption occurs during the months of June through September. During this same typical period, commercial, industrial and restaurants, use approximately 50%, 60% and 40% of total annual water demand, respectively. This peak-demand period coincides with typical seasonal risks concerning lower river water levels and even junior water right restrictions.

Tri City's conservation program will be focused on the reduction of peak demand reduction in the residential, commercial and industrial classes. Tri City practices conservative water and energy use to operate the water treatment facility. Tri City does not operate parks or other typical high-water-use facilities commonly seen in city water systems. The main operational water use is due to operations at the water treatment facility. Water loss reporting details prove that Tri City operates a water distribution system and treatment facility with low water losses from leaks and operations water waste as compared to typical water systems.

In 2023, The estimated residential water consumption per capita was approximately 90 gallons per day. This value is relatively low as compared to other small communities. Many of the residences in the area are multi-family, mobile homes, or small residences, which partially explains the generally low water consumption per capita.

Tri City understands that water treatment and distribution is expensive. Low levels of water leaks and treatment water waste are the best ways for Tri City to save energy and money, while also

conserving water. Tri City recognizes the need to continue to build on its conservation activities. Conservation measures will continue to be pursued by Tri City over the coming decade and beyond. Details of these measures are outlined in the following subsections.

Basic conservation measures required for all water suppliers are acknowledged by Tri City and are outline as:

1. Annual water audit

   Tri City completes an annual water audit and water losses are calculated monthly.

2. Full metering of the system

   Tri City has worked diligently to meter every connection is the water system, and all connections are metered.

3. Meter testing and maintenance program

   Tri City has historically budgeted annually for its water meter replacement program, which replaces old meters in the system with newer remote-read meters. The recent COVID crisis required adjustment to the program as water meters became difficult to procure. Many older meters were not fully replaced, but instead had new touch read registers installed. Moving ahead, and as meters become more readily available, older meters will be replaced as has been done in the past. Tri City does not presently have a water meter test bench as they are expensive and time consuming to use. Tri City relies on the fact that meters are tested prior to shipment.

4. Rate structure based on quantity of water metered

   Tri City has water meters installed on every connection in the system and water is billed on a per-gallon basis on top of a base rate for each metered connection. The water rate structure is diligently updated each year with annual rate increases to match macroeconomic forces.

5. Leak detection program

   Tri City has focused on using its water meter replacement program and system software analytics to identify customer leaks. The software can calculate changes in use and notify Tri City of potential leaks. Tri City has conducted leak detection work in the past using a leak detection service contractor. The technology and services often do not deliver cost-effective results. Finally, Tri City visually inspects meter readings monthly to verify no irregularities are present. Irregularities are investigated and if leaks are found, the customer is notified, and actions are taken as necessary to resolve any issues.

6. Public education program

   Tri City's diligent efforts to maintain and improve upon its record of low water waste and leakage has not historically called for a public education program. Public education for how to efficiently use water and reduce water usage could be placed on Tri City's website for interested residents to review an implement water saving

measures. Tri City could potentially send out a mailer along with water invoices to help inform users if determined to be a cost-effective way to reduce water consumption. The objective of these education measures would be to support the key objective of reducing peak water usage during peak usage periods.

Other conservation measures:

7. Tri City performs visual inspection of each of its water storage reservoirs on a regular basis. The tanks are inspected for corrosion, leakage, and other irregularities.
8. Tri City's operational usage has been monitored and the majority of water is fully metered. The water plant is well operated meeting drinking water standards to ensure backwash and operational water usage is minimized.

3.4.1 Annual Water Audit

OAR 690-086-0150(4)(a)

Tri City has performed annual water audits as required. Over the past five years, Tri City's average annual water loss has been less than 14.1% (see Section 2.11 and Table 2-11). Currently this calculation is determined using AWWA's comprehensive Water Audit Software.

Tri City is not currently metering water used in the fire hydrant flushing program, which technically adds to unaccounted water (leakage). An automated bulk water station has been installed to allow customers to register to purchase water. This water is automatically metered, and customers are tracked. Tri City offers water to other users from hydrants upon request and this water is metered during use, such as for construction purposes.

3.4.2 System-Wide Metering

OAR 690-086-0150(4)(b)

Tri City's water system is fully metered. Raw water pumps are metered to measure the amount of raw water diverted to the water treatment facility. All customer connections are metered.

> ***Five-Year Benchmark:*** *Tri City will continue to require the installation of meters at service connections for all new development within its service area.*

3.4.3 Meter Testing and Maintenance

OAR 690-086-0150(4)(c)

Meter testing and maintenance is currently performed on an "as needed" basis. Tri City will continue its water meter replacement program, which includes replacement of old meters in the system.

> ***Five-Year Benchmark:*** *Tri City will continue testing and replacing meter on an as-needed basis through the following reporting period.*

3.4.4 Water Rate Structure

OAR 690-086-0150(4)(d)

Tri City completed a water rate study in 2007 and has updated water rates annually to match the pace of cost growth for the water system. The current water rate structure is $32.65 for a residential meter plus $2.81 per each 1,000 gallons of water consumptive rate. The base rate increases based on larger meter sizes as shown the Tri City's water rate schedule. All customers are billed for metered water usage on a monthly basis.

> ***Five-Year Benchmark:*** *Tri City will continue to maintain a water rate structure that includes a volumetric charge based on the amount of water metered at the customer's service connection.*

3.4.5 Leak Detection

OAR 690-086-0150(4)(e)

Tri City's water system leakage from 2019 through 2023 ranged from 13.5% to 14.7%. In accordance with OAR 690-086-0150(4)(e), because Tri City's water losses have exceeded 10% over the last five years, Tri City has developed a leak detection program. This program calls for the monitoring of potential customer leaks using it remote read meter software to identify potential leaks. Identified leaks are repaired promptly.

> ***Five-Year Benchmark:*** *The City will continue to practice its leak detection, identification and repair process.*

3.4.6 Public Education

OAR 690-086-0150(4)(f)

Public education is an important component of Tri City's overall water conservation program. The following public education measures are planned:

- Tri City will provide water conservation information on its website to inform water customers on how to conserve water and save money. The information includes tips on water saving irrigation techniques and methods to reduce indoor water consumption.

> ***Five-Year Benchmark:*** *Tri City will provide information on its website to educate water customers on ways to conserve water inside and outside of their homes.*

3.5 Leak Repair/Line Replacement Program

OAR 690-086-0150(5)

This rule applies to municipal water suppliers that propose to expand or initiate diversion of water under an extended permit for which environmental resource issues have been identified under OAR 690-086- 014(5)(i), and that have system leakage exceeding 15%.

Tri City's water system leakage over the past 5 years has been less than 15%, so this rule does not apply to the system. However, Tri City actively seeks to reduce system leaks in the system and will continue to do so to the greatest extent practical.

> ***Five-Year Benchmark:*** *Tri City will continue to identify and address leaks in the water system through the next reporting period.*

3.6 Enhanced Conservation Measures

OAR 690-086-0150(6)

This rule applies to municipal water suppliers that serve a population greater than 1,000 and that are proposing to expand or initiate diversion of water under an extended permit for which environmental resource issues have been identified under OAR 690-086-014(5)(i).

This rule requires the municipal water supplier to establish a schedule with five-year benchmarks for implementation of each of the following conservation measures identified under OAR 690-086-0150(6), or to provide documentation showing that implementation of the measures is neither feasible nor appropriate for ensuring the efficient use of water and the prevention of waste:

- *Leak repair or line replacement program;*
- *Technical and financial assistance;*
- *Supplier financed retrofit or replacement of inefficient fixtures;*
- *Rate structures, billing schedules, and other associated programs to encourage water conservation;*
- *Water reuse, recycling, and non-potable water opportunities; and*
- *Any other conservation measures identified by the supplier to improve water use efficiency.*

Tri City serves a population of approximately of 4,050, as well as industrial and commercial businesses. To meet projected future water demand, Tri City is proposing to expand the diversion of water under its extended Permit S-40699. A portion of the water right is conditional for the persistence of listed fish species. The total water right is 3.0 cfs and the first 1.78 cfs is not limited as noted in the Final Order issued on January 28, 2022, approving the permit extension of time. The remaining 1.22 cfs is conditional based upon minimum stream flows in the South Umpqua River.

3.6.1 Leak Repair/Line Replacement Program

OAR 690-086-0150(6)(a)

Tri City's water system leakage is less than 15% over the past five years. Tri City has focused on using its water meter replacement program and system software analytics to identify customer leaks. The software can calculate changes in use and identify potential leaks. Tri City has conducted leak detection work in the past using a leak detection service contractor. The technology and services often do not deliver cost-effective results. Finally, Tri City visually inspects meter readings monthly to verify no irregularities are present. Irregularities are investigated and if leaks are found, they are promptly repaired. The customer is notified, and actions are taken as necessary to resolve any issues. Tri City also performs visual inspection of each of its water storage reservoirs on a regular basis. The tanks are inspected for corrosion,

leakage, and other irregularities. Tri City's operational usage has been monitored and the majority of water is fully metered. The water plant is well operated meeting drinking water standards to ensure backwash and operational water usage is minimized.

> ***Five-Year Benchmark:*** *Tri City will continue to actively monitor the water system for water leaks and will address them as encountered.*

3.6.2 Technical / Financial Assistance Programs

OAR 690-086-0150(6)(b)

Tri City uses its water metering software to actively monitor for potential water leaks. Tri City alerts customers in a timely manner to the potential of a leak. If a customer has a leak, Tri City has a policy in place to share the cost of the leaked water.

> ***Five-Year Benchmark:*** *Tri City will continue to actively monitor the water system for water leaks and will address them as encountered. Technical assistance is provided to customers when a potential leak is identified. Customers are promptly notified when potential leaks occur.*

3.6.3 Retrofit / Replacement of Inefficient Fixtures

OAR 690-086-0150(6)(c)

Tri City is presently not considering the implementation of a fixture replacement or appliance replacement program. Information on Tri City's website concerning water use reduction is available to customers, which includes the replacement of water fixtures and appliances.

> ***Five-Year Benchmark:*** *Tri City's website will include information for how to reduce water usage for customers, including replacement of fixtures and appliances.*

3.6.4 Rate Structure and Billing Schedule to Encourage Conservation

OAR 690-086-0150(6)(d)

Tri City completed a water rate study in 2007 and had updated water rates annually to match the pace of cost growth for the water system. The current water rate structure is $32.65 for a residential meter plus $2.81 per each 1,000 gallons of water consumptive rate. The base rate increases based on larger meter sizes as shown the Tri City's water rate schedule. All customers are billed for metered water usage on a monthly basis. The consumptive water rate allows customers to have direct control of their water bills though the reduction of water use, while the base rate pays for essential operations and fixed costs for the water system.

> ***Five-Year Benchmark:*** *Tri City will continue to maintain a water rate structure that includes a volumetric charge based on the amount of water metered at the customer's service connection.*

3.6.5 Reuse, Recycling, and Non-Potable Opportunities

OAR 690-086-0150(6)(e)

Tri City does not presently see wastewater reuse as a viable option in its service area. The regional wastewater treatment facility operated by the City of Myrtle Creek is located on the northern extents of Tri City's system. Reuse options may be considered by the City of Myrtle Creek for its water and wastewater systems.

Five-Year Benchmark: *N/A*

3.6.6 Other Conservation Measures

OAR 690-086-0150(6)(f)

Tri City continues to seek opportunities to identify and limit water leaks in the water system. Tri City performs visual inspection of each of its water storage reservoirs on a regular basis. The tanks are inspected for corrosion, leakage, and other irregularities. Tri City's operational usage has been monitored and the majority of water is fully metered. The water plant is well operated meeting drinking water standards to ensure backwash and operational was usage is minimized.

Five-Year Benchmark: *Tri City will continue to inspect the water system for leaks and to optimize treatment to minimum operational wastewater.*

3.7 Conservation Savings

Tri City has an excellent performance history concerning low water leak levels as compared to similar communities in Oregon. Average water leakage over the past five years is approximately 14%. Tri City will diligently pursue further reductions in water leakage as has proven effective over recent years. Tri City anticipates additional water savings from these measures described in this WMCP, and as summarized in Table 3-1. Please note that planned savings have intentionally been projected on the lower end of what could be realized to ensure this does not impact the projected need and water rights to meet future demand.

Table 3-1
Estimated Savings from 5-Year Conservation Benchmarks

Measure	Estimated Savings
Ongoing Efforts	
Maintain a fully metered system	0.01%
Visual inspection of reservoirs	0.01%
Meter replacement program	0.4%
Repair leaks identified in annually	0.1%
Maintain a rate structure based on metered use	0.1%
Planned Programs	
Water use auditing to customers	N/A
Leak repair (ongoing)	0.5%
City website upgrade to include water conservation education	0.5%
TOTAL:	**1.62%**

Tri City anticipates the greatest opportunity for conservation savings is a result of public education, continued meter replacement, and ongoing leak discovery and repair. Experience indicates that once a faulty meter is repaired or replaced, average and peak demand associated with that meter decreases a substantial amount, depending upon how poorly the meter operated before its repair or replacement.

3.8 Summary of 5-Year Benchmarks

Table 3-2 summarizes the relevant benchmarks for Tri City's on-going and planned conservation activities.

Table 3-2
5-Year Conservation Benchmarks

Benchmark	Date	Frequency
Ongoing Efforts		
Maintain a fully metered system	---	Ongoing
Visual inspection of reservoirs	---	Monthly
Meter replacement program	---	Ongoing
Leak detection visits	---	Ongoing
Repair any leaks identified annually	---	Ongoing
Maintain a rate structure based on metered use	---	Monthly
Planned Programs		
Leak repair		Ongoing
Distribute updated conservation information on web site	2025	Annually

Section 4 - Water Curtailment Plan Elements

OAR 690-086-0160

This section is written to satisfy the requirements of OAR 690-086-0160. It provides a description of past supply deficiencies and current capacity limitation. It also outlines Tri City's water curtailment plan that identifies the different stages of alert along with the associated triggers and water curtailment actions for each alert stage.

Tri City Water & Sanitary Authority's water supply is constituted by surface water with a single point of diversion from the South Umpqua River. Raw water quality varies significantly throughout the year and seasonally. Tri City's Water System Risk Failure Analysis (HBH, 2011, with subsequent revisions) analyzed the water system for failure risks by category and prioritized based upon a scoring system. There are several potential root causes that can result in similar types of failures. For example, mechanical failures can be a result of normal wear, but also as a result of a natural disaster, such as an earthquake. Tri City believes there are three primary scenarios that could impact its ability to meet water demand to the community, including:

1. Mechanical or structure failure of key water delivery infrastructure;
    a. Causes such as natural disaster or major mechanical failure.
2. Poor raw water quality and/or the presence of contaminants;
    a. Causes such as drought, heavy storm weather, or contaminant presence.
3. Water right restrictions/hydraulic limitations due to low flow in the South Umpqua River;
    a. Causes such as low level or flow, or hydraulic limitations of the raw water intake.

Tri City's Emergency Response Plan (ERP) (HBH, 2004) developed detailed information concerning responses to emergencies, including potential events resulting in water supply shortages or disruptions. The ERP provides Action Plans concerning the responses to various emergencies caused by serious events such as natural disasters. Tri City's responses to water supply emergencies are described in the ERP, through its Action Plan 9, and is provided in the Section 4.4, and summarized in Table 4-1, below.

4.1 History of Past System Curtailment Events

OAR 690-086-0160(1)

Tri City has experienced several water right restrictions in the past decade but has not had to implement its curtailment plan. Water right restrictions or low water levels in the South Umpqua River could result in curtailment events in the future. Lower water levels in the river may limit the hydraulic capacity of the raw water intake and water right restrictions could result in more serious water supply issues.

4.2 Stages of Alert for Water Curtailment

OAR 690-086-0160(2)

Tri City's curtailment action plan is comprised of four stages of alert: Alert, Warning, Crisis, and Emergency. Each stage of alert is outlined in detail in Table 4-1 below, which is sourced from Tri City's Emergency Response Plan.

4.3 Triggers for Water Curtailment

OAR 690-086-0160(3)

Tri City has defined four stages of alert, which are triggered by a pre-determined level of severity of water shortage. The level of severity is based upon the amount of water being used as compared to the capacity of the system to meet water demand. The trigger for each stage of alert is described in Table 4-1 below.

4.4 Water Curtailment Actions

OAR 690-086-0160(4)

Specific water curtailment measures that will be implemented under each stage of alert upon enactment of the water curtailment plan are outlined in Table 4-1 below.

Table 4-1
Emergency Response Plan – Action Plan 9 – Water Supply Disruptions

<table>
<tr><th colspan="3">Action Plan 9 – Water Supply Interruption</th></tr>
<tr><td>AP Summary:</td><td colspan="2">This action plan applies to water supply interruptions. These events will vary in scale from compromised incremental supply volumes to complete, catastrophic loss of water supply. The ability for a utility to successfully respond to a catastrophic water supply interruption will be highly correlated to the existence of interconnections and alternative sources of supply.</td></tr>
<tr><td>Initiation and Notification:</td><td>Catastrophic water supply interruptions will generally be identified by other events, such as physical equipment damage, severe weather or others, which are likely to have a specific direct action plan. Incremental interruptions due to longer-term events such as drought or acute loss of one source, will lead to a prescribed series of contingency measures, as outlined below.</td><td>It is recognized that many utilities will already have an action plan in place to address this event. Notification phone numbers can be obtained from the Organization Contact List in the Appendices as well as from Section III.D of the ERP.</td></tr>
<tr><td>Equipment Identified:</td><td><table><tr><th>Equipment</th><th>Location</th></tr><tr><td>N/A</td><td></td></tr></table></td><td>This equipment is available to assist in the execution of this AP.</td></tr>
<tr><td>Specific Activities:</td><td></td><td></td></tr>
<tr><td>I. Assess the Problem</td><td>There are a number of potential levels of severity involved in a water supply interruption. A series of stages of action corresponding to increasing impacts on water are:
Normal Conditions
Water Alert
Water Warning
Water Crisis
Water Emergency</td><td></td></tr>
</table>

Action Plan 9 – Water Supply Interruption

II. Isolate and Fix the Problem	Each stage has specific customized definitions, in terms of percent of Water Supply reduction, with appropriate actions or restrictions at each stage. Utilities will have a series of escalating penalties for successive violations of restrictions. These stages are: **Normal Conditions** – Normal conditions apply. Water is available; but in arid environments there are specific watering days for various addresses or penalties for excess watering. **Water Alert** -- A 5% or greater reduction in water usage is to meet the immediate needs of customers. Voluntary conservation encouraged. The water shortage situation is explained to the public and voluntary water conservation is requested (see standard press releases). Tri City maintains an ongoing public information campaign consisting of distribution of literature, speaking engagements, bill inserts, and conversation messages printed in local newspapers. **Water Warning** -- A 15% or greater reduction in water usage is to meet the immediate needs of customers. Water supply shortage is moderate. The utility aggressively continues its public information and education programs. Consumers are asked for a 15 percent or greater voluntary or mandatory water use reduction. Additional landscape irrigation restrictions may be implemented. Businesses may be asked not to serve water in restaurants unless requested. **Water Crisis** – A 30% or greater reduction in water usage is to meet the immediate needs of customers. Water supply shortage is severe. Additional requirements may include: Dramatic landscape irrigation restrictions; Restrictions on use of potable water to fill or refill new swimming pools, artificial lakes, ponds, or streams until the water crisis is declared over; Prohibition of water use for ornamental ponds and fountains; Restrictions on washing of automobiles and equipment (such as requiring that it shall be done on the lawn or at a commercial establishment that uses recycled or reclaimed water); Restriction of flushing of sewers or fire hydrants to cases of emergency and essential operations, and; Introduction of a permanent water meter on existing non-metered services and/or flow restrictors on existing metered services at customer's expense upon receipt of the second water violation. **Water Emergency** -- A 50% or greater reduction in water usage is to meet the immediate needs of customers. Water shortage is critical. Additional requirements may include: Disallowing all landscape irrigation; Disallowing potable water use for construction purposes such as dust control, compaction, or trench jetting. In addition, large industrial users, for example canneries and other food manufacturers, may be required to reduce or cease all water use. In addition to these incremental stages, the Utility should prepare for a catastrophic interruption of water supplies. A catastrophic event that constitutes a proclamation of a water shortage would be any event, either natural or manmade, that causes a severe water supply interruption, synonymous with or with greater severity than the "Water Warning" water supply shortage condition outlined above.	

Action Plan 9 – Water Supply Interruption		
III. Monitoring	Communication of water supply interruption stages should be handled according to the identified public notification procedures. Press releases should also be handled according to the identified utility procedures.	*See ERP section D.* *See Section VIII.A.1 for Press Releases*
IV. Recovery and Return to Safety	Alternative water supply options have been identified in the utility emergency response plan (ERP). In the event of a catastrophic, immediate need, it is likely these will be utilized. This includes information on local interconnections with neighboring sources, area water haulers, temporary storage options, etc. If there have been lines with no water or negative pressures, a precautionary boil order should be issued by the utility until line tests on two consecutive days show the lines to be safe. Chlorine residuals should be increased temporarily. The water system may have to valve off portions of the distribution system until above ground storage tanks are refilled. Valved off areas have the potential for external contamination to enter the system through leaking joints or cracked pipe. Before placing a valved off area back in service, the system should issue a precautionary boil order, increase the chlorine residual throughout the system and obtain safe bacteriological samples from representative areas of the system on two consecutive days. The precautionary boil order may be lifted once the required safe samples are obtained. The system should be repressurized slowly to avoid water hammer and the potential for damage to the lines. Air should be bled from lines as they refill since entrapped air can impede flows and may cause line damage.	*See ERP Alternative Water Sources, Section III.G* *See boil order release Section VIII.A.1 Press Releases.* *See boil order release Section VIII.A.1 Press Releases.*
V. Report of Findings	In addition to completing the appropriate filings with local authorities and agencies, it is recommended that the Utility assemble the relevant personnel to review the effectiveness of the action plan and reinforce lessons learned in the process.	

4.5 Staff Responsibilities

The following staff will have responsibilities for the following tasks in the event the water curtailment plan is enacted. Tri City's ERP has detailed information concerning staff responsibilities during an emergency.

Table 4-2

Staff Responsibilities in the Event the Water Curtailment Action Plan is Enacted

Staff Person	Responsibility
Paul Wilborn, General Manager	All direct and indirect media outreach efforts Enforce curtailment measures Work with businesses to reduce consumption Coordinate staff to ensure activities comply with curtailment plan
Brian Kelly, Water Plant Operator	Technical specialist for water plant equipment and operations

Section 5 - Municipal Water Supply Element

OAR 690-086-0170 and OAR 690-086-0130(7)

This section is written to satisfy requirements of OAR 690-086-0170 and OAR 690-086-0130(7). It provides a description of the Tri City Water & Sanitary Authority's (Tri City) current and future service area and population projections. It details Tri City's projected 10 and 20 year demands for water and identifies when Tri City expects to fully exercise its water rights. This section also compares Tri City's projected water needs against their existing available sources of supply, analyzes potential alternative water sources, and describes required mitigation actions.

5.1 Delineation of Current/Future Water Service Areas

OAR 690-086-0170(1)

Tri City has several zoning classes within its water service area, with the primary categories of multi-family, single-family, suburban residential, commercial and industrial. Table 5-1 summarizes the total area for each zoning category. The single-family residential category comprises over 49% of the land within Tri City's service area boundaries (not including roadway right-of-way).

Table 5-1

Land Use Summary

Zone	Description	Area (acres)	% Area
R1	Single Family Residential	832	42.6%
R2	Multi-Family Residential	47	2.4%
RS	Suburban Residential	263	13.5%
CT	Tourist Commercial	37	1.9%
C2	Commercial	33	1.7%
C3	Commercial	35	1.8%
M1	Industrial	17	0.9%
M2	Industrial	40	2.0%
M3	Industrial	87	4.5%
F1	Exclusive Farm Use - Crop	74	3.8%
F2	Exclusive Farm Use - Crop	79	4.0%
FF	Farm Forest	12	0.6%
FG	Exclusive Farm Use - Grazing	50	2.6%
PR	Public Reserve	89	4.6%
R/W	Road Right-Of-Way	259	13.3%
		1954	

Single-family residential zoning is anticipated to remain the dominant category in the long term. The relative share of total land and water use for each category is expected to remain relatively consistent into the future. Tri City anticipates that future development will primarily be located inside the service area boundaries. Commercial and industrial development in the Industrial Park could potentially require expansion of Tri City's service area in the long-term. Exhibit A1 illustrates Tri City's service area map and boundary.

5.2 Population Projections/Anticipated Development

OAR 690-086-0170(1)

5.2.1 Population

Tri City's present population is estimated to be 4,063 (Year 2025). A twenty-year forecast for population has been developed by Tri City and shows modest population increase through the year 2045, when the population is estimated to be approximately 4,300. Tri City is in the process of updating the Water Master Plan, which will be completed in 2026. These population projections were developed as part of that effort, so both documents will agree when completed. Historical growth has been approximately 0.22%, while the future growth projection has been estimated to be a conservative 0.30%. Table 5-2 provides a summary of anticipated population growth through the study period of 20 years. These estimates provide the initial basis for long-term water demand forecasting.

Table 5-2
Population Summary

Year	Total Population
2025	4,063
2030	4,125
2035	4,187
2040	4,250
2045	4,314

5.2.2 Employment

Employment in the Tri City area in 2023 was estimated to be 36.5% based on the 2023 American Community Survey 5-Year Estimates. Employment in the area generally follows population trends, however the Industrial Park provides for unique potential future opportunities for local jobs. It is unclear what types and number of jobs could become available, and when these jobs could be realized. It is also difficult to project if these jobs will be filled with residents from Tri City, or if these jobs will be filled from individuals outside of the Tri City area. For these reasons, the employment rate of 36.5% will be relied upon until more useful information is acquired.

Table 5-3
Employment Estimates

Year	Employment Estimate (36.5%*)
2020	1,467
2023	1,477
2025	1,483
2030	1,505
2035	1,528
2040	1,551

* Data provided by the 2023 American Community Survey 5-Year Estimates

5.3 Schedule for Fully Exercising Water Use Permits

OAR 690-086-0170(2)

Tri City currently operates a single water treatment facility with a single point of diversion from the South Umpqua River. Several separate water rights are granted with varying priorities, flow rates, conditions, and restrictions. Tri City has perfected most of its water rights with the exception of water right permit S-40699, which was granted an extension of time for perfection per Final Order dated January 28, 2022. Table 5-4 provides a summary of water rights and comments concerning perfection schedule. Tri City is presently updating its Water Master Plan and the analysis for projected demand in this WMCP agrees with the preliminary analysis conducted.

Table 5-4
Water Rights Perfection

Source/ Priority*	Permit No.	Certificate	Permitted Rate (cfs)	Maximum Beneficial Use to Date (cfs)	Use	Perfection Schedule
SUR 3/13/52	S-21179	52975	0.125	0.125	Municipal	Complete
SUR 9/19/56	S-24600	90167	0.07	0.07	Municipal	Complete
SUR 9/19/56	S-24600	90166	0.25	0.25	Municipal	Complete
SUR 9/19/56	S-24600	87283	0.34	0.34	Municipal	Complete
SUR 8/13/56	S-24446	30263	1.0	1.0	Municipal	Complete
SUR 10/24/73	S-40699		3.0**	1.78**	Municipal	Extension Granted to Perfect by 2046
SUR 4/19/79	S-44336	90165	0.425	0.425	Municipal	Complete
SUR*** Galesville	N/A	N/A	95 acre-ft	---	Municipal	

* SUR = South Umpqua River. All water rights diverted from a single point of diversion.
** Currently limited to 1.78 per Final Order dated January 28, 2022.
*** Contract water storage of 95 acre-ft at Galesville Reservoir. Contracted July 8, 1994.

5.4 Demand Forecast

OAR 690-086-0170(3)

5.4.1 Average Annual Demand

Tri City supports growth in water demand driven primarily by the three largest customer classes, which are residential, commercial and industrial. Under this approach it is assumed that use by other customer classes will remain relatively consistent and will have little impact on future water consumption. It is further assumed that the general characteristics of residential, commercial and industrial classes will remain relatively equal. The Industrial Park could potentially see development in the future; however, it is impossible to project the type of users that could develop in this area.

Future demand projections were calculated by estimating the future number of EDU's and applying a standard rate of use per EDU. A figure of 214 gallons per day per EDU was determined from the historical data reported in Section 2. The number of expected EDU's was then computed using the rates of growth for population and employment for the residential, commercial and industrial classes, respectively. Table 5-5 summarizes the current and projected average daily demand forecast for the primary user classes through 2045.

Table 5-5
Average Daily Demand Forecast Summary

Year	Residential Demand (mgd)	Commercial/Industrial Demand (mgd)	Other (mgd)	Total (mgd)
2025	0.366	0.070	0.006	0.441
2030	0.371	0.071	0.006	0.448
2035	0.376	0.072	0.006	0.454
2040	0.382	0.073	0.006	0.461
2045	0.388	0.074	0.006	0.468

Average daily demand (ADD) is expected to increase from 0.44 mgd to 0.47 mgd over the period from 2025 to 2045, which is an increase of approximately 6%.

Potential industrial land development is one important item of note for the future. The Industrial Park has capacity for industrial developers. It is impossible to know what type of development could occur and what the water demand characteristics may be for a specific unknown potential future user. Tri City is presently developing a major update to the Water Master Plan which will evaluate potential scenarios concerning the type of users and the potential impacts to the water system demand.

Other customer classes are expected to remain relatively static over the next planning horizon of 20 years. The following section presents information concerning peak water demand and conservation measure.

5.4.2 Peak Day and Conservation Measures

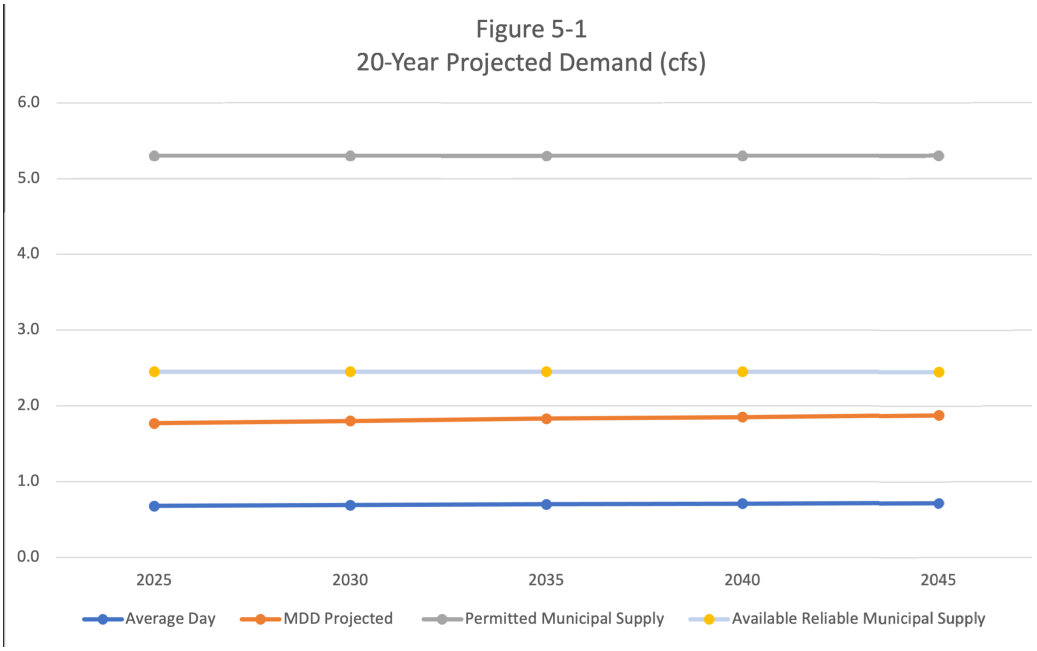
Section 2 describes current and projected peak water demand characteristics, which includes a peak day factor of 2.6 as compared to average daily demand. By 2045 the peak day (MDD) is estimated to be 1.22 mgd (1.88 cfs). Tri City anticipates that its conservation program activities combined will reduce peak demand by 1.6% in 2035 and 2045. If realized, this would result in a peak demand of 1.16 mgd, and 1.20 mgd. It should be noted that conservation savings have been very conservatively estimated to ensure these savings are not too optimistic. It is the goal of Tri City to ensure water can be delivered regardless of realized conservation savings. Table 5-6 described peak and average day demand for the years 2025, 2030, 2035, 2040 and 2045.

Table 5-6
Water Demand Forecast

Year	Average Day Demand		Peak Day Demand – WITHOUT Conservation		Peak Day Demand – WITH Conservation	
	(mgd)	(cfs)	(mgd)	(cfs)	(mgd)	(cfs)
2025	0.441	0.68	1.15	1.77	---	---
2030	0.448	0.69	1.16	1.80	---	---
2035	0.454	0.70	1.18	1.83	1.16	1.79
2040	0.461	0.71	1.20	1.85	1.18	1.82
2045	0.468	0.72	1.22	1.88	1.20	1.85

Figure 5-1 provides a graphical summary of Tri City's 20-year peak day demand in relation to total and reliable water rights. One key item to note is that during periods of low flow in the South Umpqua River, junior water rights can be restricted to pre-1958 water rights. During these periods of time water rights are restricted to approximately the peak day values, which requires water to be allocated to Tri City from Galesville Reservoir. The calculation below assumes that water in Galesville Reservoir is available and that the stored water right is withdrawn over a 75-day period for a diversion of approximately 0.66 cfs. Peak instantaneous conditions may require diversion rates higher than the peak day shown below.

Figure 5-1
20-Year Projected Demand (cfs)



5.5 Comparison of Projected Need to Available Sources

OAR 690-086-0170(4)

One key item of note is that during periods of low flow in the South Umpqua River, the water rights can be restricted to pre-1958 water rights. During these periods of time water rights are restricted to approximately the peak day values, which requires water to be allocated to Tri City from Galesville Reservoir. A graphical summary is provided in Figure 5-1 as discussed above.

5.5.1 Capacity Analysis

Tri City's current water rights inventory will deliver approximately 1.9 cfs (projected Peak Day) on a peak day basis, and approximately 0.5 mgd on a daily basis (Projected ADD). Conservation outcomes will only enhance the water supply situation. Tri City has a total of 5.21 cfs water rights, plus water storage rights in Galesville Reservoir. Operational and treatment capacity constraints limit treatment capacity to approximately 1.35 mgd (~3.0 cfs) during low flow periods in the South Umpqua River. Water rights can be significantly restricted during times of low flow periods in the South Umpqua River. This limitation can be as low as 1.875 cfs, plus an available 9.5 acre-feet from Galesville Reservoir (limited), for a total approximately 2.54 cfs (1.16 mgd). Production capacity limitations are primarily due to hydraulic limitations at the raw water intake, but also in the water treatment facility as well. The raw water intake is hydraulically limited during times of low river water levels. To-date most of the water rights have been perfected and have been adequate to meet peak day demand periods.

Table 5-7 summarizes the quantity of water permitted from each of Tri City's water sources and includes information concerning limiting factors for each of those sources. It should be noted that for most of the year available water supply is more than adequate to meet demand needs. The table below highlights the worst-case scenario when junior water rights are restricted, and water from Galesville Reservoir must be withdrawn.

Table 5-7
Current Supply Capacity

Source/ Priority*	Permit No.	Permitted Quantity		Available Reliable Supply Quantity		Limiting Factors
		Max. Rate (mgd)	Max Rate (cfs)	Max. Rate (mgd)	Max Rate (cfs)	
SUR 3/13/52	S-21179	0.08	0.125	0.08	0.125	N/A
SUR 9/19/56	S-24600	0.05	0.07	0.05	0.07	N/A
SUR 9/19/56	S-24600	0.16	0.25	0.16	0.25	N/A
SUR 8/13/56	S-24600	0.22	0.34	0.22	0.34	N/A
SUR 8/13/56	S-24446	0.65	1.0	0.65	1.0	N/A
SUR 10/24/73	S-40699	1.94	3.0**	0	0	Junior Right Restriction Fish Persistence Lim.
SUR 4/19/79	S-44336	0.27	0.425	0	0	Junior Right Restriction
SUR*** Galesville	N/A	95 acre-ft		~ 0.41	~ 0.666	Reservoir Level Limitation Volume Limitation
Total Available Supply Capacity for Municipal Use:				**~ 1.58 mgd**	**~ 2.45 cfs**	

* SUR = South Umpqua River. All water rights diverted from a single point of diversion.
** Currently limited per Final Order dated January 28, 2022.
*** Contract water storage of 95 acre-ft at Galesville Reservoir. Contracted July 8, 1994. Calculations assume 75 days for withdrawal of water storage during peak water demand period.

Tri City's water rights appear to meet long term needs, however a more nuanced assessment shows that instream flow conditions can (and have) resulted in restrictions that risk Tri City's ability to provide water during peak water demand. This situation occurs only during the worst-case stream flow conditions and when water demand is at its peak. Tri City must plan to expand its present capacity for withdrawals under its existing permits to accommodate additional access to water during periods of demand and to increase the reliability and redundancy throughout the system. Plans to do so include:

1. Expanding water right under Permit No. S-40699 to 3.0 cfs by submitting and receiving approval of this water management and conservation plan. Eventual perfection of this water right by expanding treatment capacity.
2. Procure additional water rights to stored water in Galesville Reservoir. This will enable additional water to meet peak demand during times when pre-1958 water rights are limited and when fish persistence conditions are present.
3. Consider the potential of developing and constructing a new water system intertie with the City of Riddle. This intertie would enable collaboration between the two water suppliers to manage water emergencies and to potentially share resources as needed. This intertie would have several benefits, including ensuring reliable water supply during construction for the water system of either entity as well as enabling a second water source for Tri City in the event that cyanotoxins are present in the South Umpqua River. This project is being considered as part of a separate feasibility study expected to be completed in 2025.
4. Construct a new 300,000-gallon water storage tank at the high-pressure zone on the east hills of Tri City. This project is underway and has been funded in part by the Bureau of Reclamation. This project will increase the water storage capacity for this high-pressure zone. The water storage tank will operate in parallel with an existing 87,000-gallon water storage tank that will provide additional operational and reserve water storage. Assuming the water tanks are filled each night, the new water tank will reduce peak water demand for the main pressure zone of the water system. The project is currently expected to be completed in late 2026.
5. Complete a Water Master Plan Update in 2026 to inform system planning through 2046.

5.5.2 Projected 20-Year Withdrawal

The long-term supply plan for Tri City will be to diligently manage its existing water rights inventory to achieve reliable and high-quality water supply even during peak demand periods. Tri City will work toward the perfection of its final water right that is not yet certified and will consider securing additional water storage rights in Galesville Reservoir for emergency use. Table 5-8 summarizes the projected water withdrawals under each water right. The values provide capacity for each water right and the projected withdrawal for both the maximum instantaneous rate and peak monthly volume.

Projected water demand characteristics over the study period have been calculated. Several potential scenarios have been discussed concerning water right restrictions and other potential limiting factors for raw water supply. Each water right is anticipated to be fully utilized at some point during the period through 2045. Significant water treatment facility improvements must be constructed to enable full use of water rights. Tri City expects the 2045 peak month demand for municipal purposes to be approximately 28.2 million gallons.

Table 5-8
20-Year Withdrawal Summary (Year 2045)

Source/ Priority*	Permit No.	Permitted Quantity Max. Rate (cfs)	Available Reliable Supply Quantity Max. Rate (cfs)	Projected 20-Year Peak Withdrawal Max. Rate (cfs)	Projected 20-Year Peak Withdrawal Max. Monthly Volume (MG)
SUR 3/13/52	S-21179	0.125	0.125	0.125	2.5
SUR 9/19/56	S-24600	0.07	0.07	0.07	1.4
SUR 9/19/56	S-24600	0.25	0.25	0.25	5.0
SUR 9/19/56	S-24600	0.34	0.34	0.34	6.79
SUR 8/13/56	S-24446	1.0	1.0	1.0	20.0
SUR 10/24/73	S-40699	3.0	0	3.0	60.0
SUR 4/19/79	S 44336	0.425	0	0.425	8.5
SUR* Galesville	N/A	95 acre-ft	~ 0.666	~ 0.666	15.0
Total Available Supply Capacity for Municipal Use:			**~ 2.45 cfs**	**~ 5.21 cfs**	**See Comment****

* Additional water storage rights may be secured for Galesville Reservoir.

** Maximum potential values are provided for each water right. In practice not all rights will be used through each peak month. In some months, water restrictions will result in specific water rights being withdrawn over others. For reference the 2045 projected MMD is 28.2 MG. Water withdrawn from Galesville Reservoir is on an as-needed basis up to the total storage amount. Current calculation assumes water withdrawn over 75 days under a worst-case scenario for water rights restrictions and hydraulic limitations.

5.6 Alternative Sources – Initial/Expanded Water Use under Existing Permits

OAR 690-086-0170(5)

Under OAR 689-086-0170(5), water suppliers that plan to expand or initiate diversion of water under existing permit(s) to meet projected demands must analyze alternative water sources. The analysis must consider availability, reliability, feasibility and likely environmental impacts, as well as the extent to which the projected water needs can be satisfied through conservation measures and interconnection or regional water management.

As indicated in Sections 5.5.1 and 5.5.2, Tri City is considering several activities to address long-term water supply needs to meet future demand. These include the perfection of water right under permit no. S-40699, the procurement of rights to additional stored water in Galesville Reservoir, consideration of the feasibility of an intertie with the City of Riddle, and the construction of a new 300,000-gallon water tank in the high-level pressure zone (current in design and to be completed in 2026). These options are underway, being fully considered in feasibility studies, or will be addressed in an upcoming update to the Water Master Plan (2026).

5.6.1 Conservation Measures

OAR 690-086-0170(5)(a)

Section 3 provides information concerning Tri City's planned conservation measures to increase water conservation by its customers. Conservative estimates for conservation water savings are assumed for the purposes of planning and demand projections. Tri City intends to meet customer demand regardless of whether planned conservation savings are fully realized.

Considering Tri City's projected 2045 peak day demand of 1.22 mgd (1.88 cfs) with anticipated conservation savings of 0.02 mgd (0.03 cfs) factored in, Tri City's reliable supply capacity of 1.16 mgd (1.795 cfs) is just adequate to meet projected peak day demand. This situation only occurs during severe droughts, water restrictions, or low stream flow conditions. One potential mitigation of this rare state is to secure additional stored water rights in Galesville Reservoir. To ensure adequate raw water supply through 2045, several actions are to be pursued as noted, in addition to potential savings resulting from water conservation.

5.6.2 Interconnection / Regional Water Management

OAR 690-086-0170(5)(b)

Tri City currently has an emergency intertie with the City of Myrtle Creek. This intertie has been utilized one time since construction where Tri City supplied water to the City of Myrtle Creek due to an emergency diesel fuel spill. A new intertie with the City of Riddle is currently being considered as part of a feasibility study that is expected to be completed in 2025. This intertie would enable collaboration between the two water suppliers to manage water emergencies and to potentially share resources as needed. This intertie would have several benefits, including ensuring reliable water supply during construction for the water system of either entity as well as enabling a second water source for Tri City in the event that cyanotoxins are present in the South Umpqua River.

5.6.3 Cost-Effectiveness

OAR 690-086-0170(5)(c)

Tri City's planned conservation measures are anticipated to provide water savings over the next twenty years. Relatively low water system leakage in the water system is likely a result of Tri City's history of diligent leak detection and repair as well as its meter replacement program. Low level of conservation savings is assumed through the study period. Greater savings are possible, but those savings have not been included in the needs assessment of future water supply. Conservation alone is not sufficient to meet the demand needs for the future. Several actions are

being pursued by Tri City and each effort strongly considers cost-effectiveness for each of these measures. The new 300,000 gallon was tank has successfully passed cost-effectiveness evaluation by the engineer and the Bureau of Reclamation. The feasibility study considering the intertie with the City of Riddle will be carefully considering cost-effectiveness as part of the evaluation criteria for alternatives.

5.7 Quantification of Maximum Rate and Monthly Volume

OAR 690-086-0170(6)

Under OAR 690-086-0170(6), water suppliers that plan to expand or initiate diversion of water under existing permit(s) to meet projected demands must provide a quantification of the maximum rate and monthly volume of water to be diverted under each of the permits.

Tri City is planning to expand the use of water under its existing Permit S-40699. A Final Order dated January 28, 2022 addresses this water right and the terms and conditions applied to an extension of time for perfection of the water right. Depending on when water rights are restricted, the full water right may be utilized over the period through 2045. Table 5-9 summarizes the potential peak withdrawal. Please note again that the conditions for this situation are rare but probable to occur in the future. In addition, Tri City will be evaluating the feasibility and availability of securing additional water storage rights in Galesville Reservoir, which will mitigate water supply constraints that can occur during severe droughts when pre-1958 water rights can be restricted.

Table 5-9

Quantification of Maximum Rate and Monthly Volume (Year 2045)

Source/ Priority*	Permit No.	Permitted Quantity	Available Reliable Supply Quantity	Projected 20-Year Peak Withdrawal	
		Max. Rate (cfs)	Max. Rate (cfs)	Max. Rate (cfs)	Max. Monthly Volume (MG)
SUR** 10/24/73	S-40699	3.0	0	3.0	60.0

* Additional water storage rights may be secured for Galesville Reservoir.

** SUR = South Umpqua River. Maximum potential values are provided for each water right. In practice not all rights will be used through each peak month. In some months, water restrictions will result in specific water rights being withdrawn over others. For reference the 2045 projected MMD is 28.2 MG.

5.8 Mitigation Actions under State and Federal Law

OAR 690-086-0170(7)

Under OAR 690-086-0170(7), water suppliers that plan to expand or initiate diversion of water under existing permit(s) to meet projected demands must describe mitigation actions the supplier is taking to comply with legal requirements including, but not limited to, the Endangered Species Act, Clean Water Act, Safe Drinking Water Act, or any other state or federal requirements, as may applicable.

Tri City was granted an extension of time for Permit No. S-40699. As part of the extension review a portion of water right was granted without conditions (1.78 cfs) while the remaining water right

(1.22 cfs) is conditional upon in stream water flows for the purpose of listed fish persistence. Tri City will comply with the terms of the Final Order dated January 28, 2022. No other current mitigation actions are required under state or federal law related to the permit.

5.9 Acquisition of New Water Rights

OAR 690-086-0170(8)

Under OAR 689-086-0170(8), water suppliers that need to acquire new water rights in the next 20 years to meet their projected 20-year water demands must analyze alternative water sources. The analysis must consider availability, reliability, feasibility and likely environmental impacts, as well as the extent to which the projected water needs can be satisfied through conservation measures and interconnection or regional water management.

Tri City does not intend to acquire additional water rights under existing permits. Additional water storage in Galesville Reservoir is under consideration as emergency storage during times of extreme drought or junior water right restrictions. Tri City currently holds 95-acre-feet of stored water, and a volume expansion is not expected to cause any adverse environmental impacts. This topic is being evaluated as part of a Water Master Plan update that will be completed in 2026.

5.9.1 Conservation Measures

OAR 690-086-0170(8)(a)

Conservation measures alone are not sufficient to meet the need for projected supply water as presented in this WMCP. The anticipated water savings are small compared to the potential need during peak water demand periods and when water restriction events occur.

5.9.2 Interconnection / Regional Water Management

OAR 690-086-0170(8)(b)

Tri City is presently developing a feasibility study to consider an intertie with the City of Riddle's water system. The concept has been discussed with the City of Riddle, and strong support has been expressed. Several significant benefits are possible related to the intertie for both communities, which will be evaluated in detail in the feasibility study.

5.9.3 Cost-Effectiveness

OAR 690-086-0170(8)(c)

Tri City is evaluating the costs associated with the expansion of stored water in Galesville Reservoir. Cost-effectiveness will be thoroughly evaluated as part of the updated Water Master Plan, which is anticipated to be completed in 2026. Cost effectiveness concerning the intertie with the City of Riddle is separately being considered in a feasibility study to be completed in 2025.

5.10 Increased Diversion of Water under Extended Permits (i.e., Greenlight Water Request)

OAR 690-086-0130(7)

Under OAR 690-086-0130(7), if during the next 20 years a water supplier will need to divert water under an extended permit at a maximum rate of diversion that is greater than the maximum rate of diversion authorized under a final order approving the permit extension of time or a previous WMCP, the water supplier must document that the WMCP includes: a schedule for implementation of lower cost conservation measures [except in those circumstances described in OAR 690-086-0130(7)(a)]; justification that the selected source is the most feasible and appropriate supply alternative; and whether the supplier is complying with mitigation requirements to address development of permits with identified environmental resource issues under OAR 690-086-0140(5)(i), if any.

This criterion does not apply, as Tri City does not seek to divert water from the extension Final Order more than the water right granted.

5.10.1 Lower Cost Conservation Measures

OAR 690-086-0130(7)(a)

N/A.

5.10.2 Feasibility and Appropriateness of Selected Supply

OAR 690-086-0130(7)(b)

N/A.

5.10.3 Mitigation Requirements Related to Further Development of Extended Permit

OAR 690-086-0130(7)(c)

N/A.

Appendix

1. Tri City Area Map
2. Final Order for Water Right Permit No. S-40699
3. City of Myrtle Creek Intertie Agreements
4. Review Comments

EXISTING BACK ACRES TANK
87,000 GALLONS

WATER DISTRIBUTION
IMPROVEMENTS

PLANNED NEW TANK
NEW 300,000 GALLONS

OCTOBER TANK
985,000 GALLONS

AKER TANK
476,000 GALLONS

AUTHORITY
BOUNDARY

WALNUT TANK
506,000 GALLONS

US INTERSTATE HWY NO. 5

WTP

WATER
INTAKE

S. UMPQUA RIVER

0 800 1600 3200
1" = 1600'
11 X 17 DRAWING SIZE

N
W E
S

FIG. A1	DRAWN BY: STM DATE: JAN 8, 2025	AREA MAP T29S–30S, R5W	TRI–CITY JOINT WATER AND SANITARY AUTHORITY Tri City Water & Sanitary Authority

Oregon Water Resources Department
Water Right Services Division

Application for Extension of Time

In the Matter of the Application for an Extension of Time	)	
for Permit S-40699, Water Right Application S-51339,	)	FINAL
in the name of the Tri Authority Water & Sanitary Authority	)	ORDER

Permit Information

Application File S-51339/ Permit S-40699

Basin 16 – Upmqua Basin / Watermaster District 15

Date of Priority: October 4, 1973

Authorized Use of Water

Source of Water:	South Umpqua River, a tributary of Umpqua River
Purpose or Use:	Municipal Use
Maximum Rate:	3.00 Cubic Feet per Second (cfs)

This Extension of Time request is being processed in accordance with Oregon Revised Statute 537.230 and 539.010(5), and Oregon Administrative Rule Chapter 690, Division 315.

Appeal Rights

This final order is subject to judicial review by the Court of Appeals under ORS 183.482. Any petition for judicial review must be filed within the 60-day time period specified by ORS 183.482(1). Pursuant to ORS 536.075 and OAR 137-003-0675, you may petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

Application History

Permit S-40699 was issued by the Department on September 16, 1976 The permit called for completion of construction by October 1, 1978, and complete application of water to beneficial use by October 1, 1979. The most recent extension authorized completion of construction and complete application of water to beneficial use by October 1, 1996. On October 2, 2003, Tri Authority Water & Sanitary Authority submitted an application to the Department for an extension of time for Permit S-40699. In accordance with OAR 690-315-0050(2), on November 30, 2021, the Department issued a Proposed Final Order proposing to extend the time to complete construction to October 1, 2046, and the time to fully apply water to beneficial use to October 1, 2046. The protest period closed January 14, 2022, in accordance with OAR 690-315-0060(1). No protest was filed.

FINDINGS OF FACT

The Department adopts and incorporates by reference the findings of fact in the Proposed Final Order dated November 30, 2021.

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

CONDITIONS

1. **Development Limitations**

A maximum diversion of 1.78 cfs of water is currently allowed under Permit S-40699. Any diversion of water beyond 1.78 cfs (not to exceed the maximum amount authorized under the permit, being 3.00 cfs) shall only be authorized upon issuance of a final order approving a Water Management and Conservation Plan (WMCP) under OAR Chapter 690, Division 86 that authorizes access to a greater rate of diversion of water under the permit consistent with OAR 690-086-0130(7). The required WMCP shall be submitted to the Department within 3 years of this Final Order. The amount of water used under Permit S-40699 must be consistent with this and subsequent WMCP's approved under OAR Chapter 690, on file with the Department. For review of water management and conservation plans that propose to increase the maximum rate of water diverted under an Extended Permit, after January 1, 2042, that the additional diversion of water will not impair or be detrimental to the public interest.

The Development Limitation established in the above paragraph supersedes any prior limitation of the diversion of water under Permit S-40699 that has been established under a prior WMCP or Extension final order issued by the Department.

The deadline established in the Extension Final Order for submittal of a WMCP shall not relieve a permit holder of any existing or future requirement for submittal of a WMCP at an earlier date as established through other orders of the Department. A WMCP submitted to meet the requirements of the final order may also meet the WMCP submittal requirements of other Department orders.

2. **Conditions to Maintain the Persistence of Listed Fish**

The first 1.78 cfs of water under Permit S-40699 or any subsequent water right(s) originating from Permit S-40699 is not and will not be conditioned for maintaining fish persistence.

The portion of Permit S-40699 subject to these fish persistence conditions is established as 1.22 cfs in accordance with ORS 537.230(3)(d). The use of 1.22 cfs as authorized under this permit must be hereafter conditioned with these fish persistence conditions. Therefore, all subsequent water right(s) originating from this portion of Permit S-40699 implemented will include these Conditions to Maintain the Persistence of Listed Fish. If more than one resulting water right is subject to these Conditions to Maintain the Persistence of Listed Fish, then legal use of the 1.22 cfs conditioned to maintain the

persistence of listed fish species shall be determined among all the permit/water right holders of record; all the permit/water right holders of record subject to these Conditions to Maintain the Persistence of Listed Fish must ensure that these fish persistence conditions are met.

A. Minimum Fish Flow Needs

Fish persistence target flows in the South Umpqua River as recommended by ODFW are in Table 2, below; flows are to be measured at USGS streamgage #14312000, South Umpqua River near Brockway, OR.

Table 2

Month	ODFW Target Flows at Gage 14312000 (cfs)
JAN	571
FEB	571
MAR	571
APR	571
MAY	336
JUN	226
JUL	226
AUG	201
SEPT 1-15	178
SEPT 16-30	225
OCT 1-15	268
OCT 16-31	419
NOV	571
DEC	571

Alternate Streamflow Measurement Point
The location of a streamflow measurement point as established in these Conditions to Maintain the Persistence of Listed Fish may be revised if the permit

or water right holder provides evidence in writing that ODFW has determined that flows may be measured at an alternate streamflow measurement point and the permit or water right holder provides an adequate description of the location of the alternate streamflow measurement point, and the Water Resources Director concurs in writing.

B. Determining Water Use Reductions - Generally
The maximum amount of the 1.22 cfs conditioned for fish persistence that can be

appropriated is determined in proportion to the amount by which the target flows shown in Table 2 are missed based on measured daily flows as determined or measured by the water user at USGS streamgage #14312000, South Umpqua River near Brockway, OR.

The fraction of target flow achievement is defined as:

$$\mathbf{T_a = (Q_g - P) / Q_t} \qquad \textit{(EQ 1)}$$

$\mathbf{Q_g}$ = gaged daily flow
$\mathbf{P}$ = amount of water conditioned for fish persistence (1.22 cfs)
$\mathbf{Q_t}$ = target flow
$\mathbf{T_a}$ = target flow achievement

When the fraction target flow achievement ($\mathbf{T_a}$) is greater than 1, no curtailment is recommended. When T_a is less than one, full or partial curtailment is recommended as outlined below.

When target flow achievement is missed (T_a<1; determined using Equation 1) from September 16 through October 31, of each year, the full undeveloped portion of 1.22 cfs shall be curtailed.

When target flow achievement is missed (T_a<1; determined using Equation 1) during the periods of January 1 through September 15, and November 1 through December 31, of each year, partial curtailment of the amount of water conditioned for fish persistence is recommended. The curtailed permit rate is determined by scaling the amount of water conditioned for fish persistence by the fraction the flow target is not being met (*EQ 2*).

If $T_a \geq 1$, no curtailment necessary. Otherwise:

$$\mathbf{D_m = T_a * P} \qquad \textit{(EQ 2)}$$

$\mathbf{D_m}$ = maximum amount of water conditioned for fish persistence that can be appropriated as a result of this fish persistence condition

C. Consumptive Use Percentages for Utilization in South Umpqua River Calculations

a. Initial Consumptive Use Percentages
The Tri-City Water and Sanitary Authority (TCWSA) has not identified any Consumptive Use Percentages based on the return of flows to the S. Umpqua River through effluent discharge. Thus, at this time the City may not utilize Consumptive Use Percentages for the purpose of calculating the maximum amount of the undeveloped portion of Permit S-40699 that can be diverted as a result of this fish persistence condition.

b. First Time Utilization of Consumptive Use Percentages
Utilization of Consumptive Use Percentages for the purpose of calculating the maximum amount of the undeveloped portion of Permit S-40699 that can be diverted as a result of this fish persistence condition may begin after the issuance of the Final Order for this extension of time.

First time utilization of Consumptive Use Percentages is contingent upon the TCWSA (1) providing evidence in writing that ODFW has determined that withdrawal points and effluent discharges are within reasonable proximity to each other, such that fish habitat between the two points is not impacted significantly, and (2) submitting monthly Consumptive Use Percentages and receiving the Water Resources Director's concurrence with the proposed Consumptive Use Percentages. Utilization of Consumptive Use Percentages is subject to an approval period described in 2.C.f., below.

Consumptive Use Percentages submitted to the Department for review must (1) be specified as a percentage (may be to the nearest 1/10 percent) for each month of the year and (2) include a description and justification of the methods utilized to determine the percentages. The proposed Consumptive Use Percentages should be submitted on the *Consumptive Use Percentages Update Form* provided with the Final Order for this extension of time.

c. Consumptive Use Percentages Updates
Continuing the utilization of Consumptive Use Percentages for the purpose of calculating the maximum amount of the undeveloped portion of Permit S-40699 that can be diverted as a result of this fish persistence condition beyond an approval period (as described in 2.C.f., below) is contingent upon the City submitting updated Consumptive Use Percentages and receiving the Water Resources Director's concurrence with the proposed Consumptive Use Percentages Updates. Utilization of Consumptive Use Percentages Updates is subject to an approval period described in 2.C.f., below.

The updates to the Consumptive Use Percentages must (1) be specified as a percentage (may be to the nearest 1/10 percent) for each month of the year and (2) include a description and justification of the methods utilized to determine the percentages. The updates should be submitted on the *Consumptive Use Percentages Update Form* provided with the Final Order for this extension of time.

d. Changes to Wastewater Technology and/or Wastewater Treatment Plant Practices
If there are changes to either wastewater technology or the practices at the TCWSA wastewater treatment facility resulting in 25% or more reductions in average monthly return flows to the South Umpqua River, then the Consumptive Use Percentages in effect at that time may no longer be utilized for the purposes of calculating the maximum amount of the undeveloped portion of Permit S-40699 that can be diverted as a result of this fish persistence condition. The 25% reduction is based on a 10-year rolling average of monthly wastewater return flows to the South Umpqua River as

compared to the average monthly wastewater return flows from the 10 year period just prior to date of the first approval period described in 2.C.f., below.

If such changes to either wastewater technology or the practices at TCWSA wastewater treatment facility occur resulting in 25% reductions, further utilization of Consumptive Use Percentages is contingent upon the TCWSA submitting Consumptive Use Percentages Updates as per 2.C.c., above, and receiving the Water Resources Director's concurrence with the proposed Consumptive Use Percentages.

e. Relocation of the Point(s) of Diversion(s) and/or Return Flows
If the point(s) of diversion(s) and/or return flows are relocated, Consumptive Use Percentages in effect at that time may no longer be utilized for the purposes of calculating the maximum amount of the undeveloped portion of Permit S-40699 that can be diverted as a result of this fish persistence condition.

After relocation of the point(s) of diversion(s) and/or return flows, further utilization of Consumptive Use Percentages is contingent upon the TCWSA (1) providing evidence in writing that ODFW has determined that any relocated withdrawal points and effluent discharge points are within reasonable proximity to each other, such that fish habitat between the two points is not impacted significantly, and (2) submitting Consumptive Use Percentages Updates as per 2.C.c., above, and receiving the Water Resources Director's concurrence with the proposed Consumptive Use Percentages.

f. Approval Periods for Utilization of Consumptive Use Percentages
The utilization of Consumptive Use Percentages for the purpose of calculating the maximum amount of the undeveloped portion of Permit S-40699 that can be diverted as a result of this fish persistence condition may continue for a 10 year approval period that ends 10 years from the Water Resources Director's most recent date of concurrence with Consumptive Use Percentages Updates as evidenced by the record, unless sections 2.C.d., or 2.C.e. (above) are applicable.

Consumptive Use Percentages (first time utilization or updates) which are submitted and receive the Director's concurrence will begin a new 10-year approval period. The approval period begins on the date of the Water Resources Director's concurrence with Consumptive Use Percentages Updates, as evidenced by the record. The TCWSA at its discretion may submit updates prior to the end of an approval period.

D. Examples

Example 1: Target flow met.

On August 15, the gaged daily flow is ($\mathbf{Q_g}$) 245.0 cfs. Given that the amount of water conditioned for fish persistence **(P)** is 1.22 cfs, then the gaged daily flow ($\mathbf{Q_g}$) minus 1.22 is **(P)** greater than the 201.0 cfs target flow ($\mathbf{Q_t}$) for August 15. In this example, $\mathbf{(Q_g - P)/Q_t \geq 1}$.

$$(245.0 - 1.22)/201 \geq 1$$

The amount of water conditioned for fish persistence that can be diverted would not be reduced because the target flow is considered met.

Example 2: Target flow missed during the periods of January 1 through September 15, and November 1 through December 31, of each year.

On August 15, the gaged daily flow ($\mathbf{Q_g}$) is 198.0 cfs. Given that the amount of water conditioned for fish persistence (**P**) is 1.22 cfs, then the gaged daily flow ($\mathbf{Q_g}$) minus 1.22 cfs (**P**) is less than the 201.0 cfs target flow ($\mathbf{Q_t}$) for August 15.

Step 1: Given that the amount of water conditioned for fish persistence (**P**) is 1.22 cfs, if on August 15, the average of the gaged daily flow ($\mathbf{Q_g}$) is 198.0 cfs and the target flow ($\mathbf{Q_t}$) is 201.0 cfs, the fraction of target flow achievement ($\mathbf{T_a}$) is less than 1.

$$(198.0 - 1.22) / 201.0 = 0.979$$

$$0.979 < 1$$

Step 2: Given the fraction of target flow achievement ($\mathbf{T_a}$) is less than 1 (from Step 1), and amount of water conditioned for fish persistence (**P**) is 1.22 cfs; the maximum amount of water conditioned for fish persistence that can be appropriated as a result of this fish persistence condition ($\mathbf{D_m}$) is 1.19 cfs.

$$0.979 * 1.22 \text{ cfs} = 1.19 \text{ cfs}$$

Example 3: Target flow missed during the period September 16 through October 31, of each year.

On October 15, the gaged daily flow is ($\mathbf{Q_g}$) 245.0 cfs. Given that the amount of water conditioned for fish persistence **(P)** is 1.22 cfs, then the gaged daily flow ($\mathbf{Q_g}$) minus 1.22 is **(P)** less than the 268 cfs target flow ($\mathbf{Q_t}$) for October 15. In this example, $\mathbf{(Q_g - P)/Q_t < 1}$.

$$(245.0 - 1.22)/268 < 1$$

Because $T_a < 1$ during the period of full curtailment, no water can be diverted under the conditions of this permit.

CONCLUSION OF LAW

The applicant has demonstrated good cause for the permit extension pursuant to ORS 537.230, 539.010(5) and OAR 690-315-0080(3).

ORDER

The extension of time for Application S-51339, Permit S-40699, therefore, is approved subject to conditions contained herein. The deadline for completing construction is extended from October 1, 1996, to October 1, 2046. The deadline for applying water to full beneficial use within the terms and conditions the permit is extended from October 1, 1996, to October 1, 2046.

DATED: January 28, 2022

Dwight French
Water Right Services Division Administrator, for
Thomas M. Byler, Director
Oregon Water Resources Department

If you have any questions about statements contained in this document, please contact Jeffrey D. Pierceall at 503-979-3213.

If you have other questions about the Department or any of its programs, please contact our Water Resources Customer Service Group at (503) 986-0900

INTERGOVERNMENTAL AGREEMENT between TRI-CITY AND MYRTLE CREEK

This intergovernmental agreement is made on 5/18/92 (date) between The City of Myrtle Creek, an Oregon municipal corporation, (hereafter referred to as MYRTLE CREEK) and Tri-City Water District, an Oregon municipal corporation, (hereafter referred to as TRI-CITY) and is authorized pursuant to ORS 190.010.

1. PURPOSE: The purpose of this agreement is to provide for an equitable method of determining the costs to be reimbursed when one party supplies water to the other party through an intertie between the water systems.

2. ACTIVITIES: Under this agreement TRI-CITY and MYRTLE CREEK shall perform activities as follows:

A: USE OF WATER: Neither MYRTLE CREEK nor TRI-CITY shall unilaterally open the valves to permit water to flow between the water systems without the expressed consent of the other party.

B: DETERMINATION OF QUANTITY USED: The quantity used shall be determined by the party supplying the water. The supplying party shall average its total production (amount of treated water introduced into the distribution system) for 5 days before and 5 days after supplying water to the other party in order to determine an average daily production. Water produced by the supplying party in excess of said average daily production during the time that the intertie is open shall be deemed to have been the amount used by the supplied party.

C: PRICE PER THOUSAND GALLONS: The reimbursement amount shall be one dollar ($1) per thousand gallons until such time as a new price adopted is by both parties.

D: TERMS OF PAYMENT: The supplying party shall provide an invoice to the party receiving water within thirty (30) days after closing the intertie. The party receiving the water shall make payment within forty five (45) days of the invoice date.

3. DURATION OF AGREEMENT: This agreement shall remain in force unless terminated under the conditions listed below.

4. TERMINATION OF AGREEMENT: Either party may terminate this agreement with thirty (30) days written notice to the other party.

CITY OF MYRTLE CREEK

BY Bob Cottrell
Mayor

TRI-CITY WATER DISTRICT

BY
Chairman of the Board

INTERGOVERNMENTAL AGREEMENT between TRI-CITY AND MYRTLE CREEK

This intergovernmental agreement is made on April 3, 1991 (date) between The City of Myrtle Creek, an Oregon municipal corporation, (hereafter referred to as MYRTLE CREEK) and Tri-City Water District, (hereafter referred to as TRI-CITY) and is authorized pursuant to ORS 190.010.

1. PURPOSE: The purpose of this agreement is to allow MYRTLE CREEK to enter into a contract agreement with a third party for construction of a water line intertie within the service area boundary of TRI-CITY and the city limits of MYRTLE CREEK for the mutual benefit of both parties.

2. ACTIVITIES: Under this agreement TRI-CITY and MYRTLE CREEK shall perform activities as follows:

MYRTLE CREEK:

a. MYRTLE-CREEK shall prepare plans, specifications, and a contract document for all intertie construction within both the TRI-CITY service area and MYRTLE CREEK city limits.

b. MYRTLE CREEK shall advertise, award, and otherwise administer the contract for the construction of the intertie.

c. MYRTLE CREEK shall provide direction and on site inspection for the actual construction, subject to TRI-CITY activities described below.

d. MYRTLE CREEK shall, within 30 days after approving the work within the city limits, issue directly to the contractor the monies due the contractor based on the final measurement of the unit quantities, within MYRTLE CREEK city limits, as set forth in the contract document and monies due the contractor arising from extra work orders or agreements issued by MYRTLE CREEK.

e. MYRTLE CREEK shall obtain an easement for water line construction on private property within the city limits.

TRI-CITY:

a. TRI-CITY shall review all plans, specifications, and contract documents prior to advertising and advise MYRTLE CREEK of changes to be incorporated into the documents for construction within the TRI-CITY service area.

b. TRI-CITY shall review the bid openings and make recommendations to the Myrtle Creek City Council prior to the contract award.

c. TRI-CITY shall have control over work inspection, contract change orders and extra work orders within its service area and shall issue copies of written orders to MYRTLE CREEK and the contractor.

d. TRI-CITY shall, within 30 days after approving the work within its service area, deliver to MYRTLE CREEK a check payable to the

contractor for the monies due the contractor based on the final measurement of the unit quantities, within TRI-CITY service area, as set forth in the contract document and monies due the contractor arising from extra work orders or agreements issued by TRI-CITY.

e. TRI-CITY shall obtain an easement for water line construction on private property within its service area.

3. DURATION OF AGREEMENT: This agreement shall remain in force until the contractor's guarantee period has expired unless terminated under the conditions listed below.

4. TERMINATION OF AGREEMENT: Either party may terminate this agreement prior to the contract award.

CITY OF MYRTLE CREEK

BY Robert M Cottrell
Mayor

TRI-CITY WATER DISTRICT

BY
Chairman of the Board

Attest:

Lou Driggle
City Recorder