



Water Management and Conservation Plan

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City of Millersburg



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Section 1: Introduction

OAR 690-086-0125

1.1 Overview

The City of Millersburg purchases wholesale water from the City of Albany by intergovernmental agreement. Water for both cities is obtained from the Santiam River. The intake is near the confluence of the North and South Santiam Rivers. Water withdrawal is authorized under the city's permit S-52886. The city also holds water right permit S-52885 on the Willamette River.

Water from the Santiam River is pumped to the water treatment plant that is jointly owned by Millersburg and the City of Albany. The plant is located on Scrael Hill, about one mile west of the river. The plant has a rated treatment capacity of 12 million gallons per day (mgd). Treated water is stored in a 5.7-million gallon (MG) reservoir located next to the water treatment plant. Water flows by gravity to Millersburg and Albany through a jointly owned 42-inch pipeline to a point just east of Interstate 5 where the pipelines to Millersburg and Albany divide. Millersburg is fed by a 28-inch diameter pipeline, which passes underneath Interstate 5 and then connects to the city's distribution pipeline grid.

Water withdrawals from the river are metered at the entrance to the water treatment plant. Potable water supplied to the community is metered just downstream of the separation of the pipelines to Millersburg and Albany. This potable water meter is referred to as the city's master meter.

In January 2021, the city served 91 commercial and industrial and 1,008 residential customer accounts. These customers included several large industries. The three largest commercial and industrial accounts used approximately 53 percent of the metered consumption within the system. The city's system also served a population of approximately 2,732 which represented 96 percent of the total city population. The remaining 4 percent of the population (118 people) obtained water from private wells.

1.2 Plan Organization

This Water Management and Conservation Plan (WMCP) fulfills the requirements of the Oregon Administrative Rules adopted by the Water Resources Commission in November 2002 (OAR Chapter 690, Division 86). It describes water management, water conservation, and curtailment programs to guide the wise use and stewardship of the city's water supply and the state's water.

The plan is organized into the following sections, each addressing specific sections of OAR Chapter 690, Division 86:

Section	Requirement
Section 1 – Introduction	OAR 690-086-0125
Section 2 - Water Supplier Description	OAR 690-086-0140
Section 3 - Water Conservation	OAR 690-086-0150
Section 4 – Curtailment	OAR 690-086-0160
Section 5 - Water Supply	OAR 690-086-0170

1.3 Affected Local Governments

The following governmental agency may be affected by this WMCP:

- City of Albany

Thirty days prior to submitting this WMCP to the Oregon Water Resources Department (OWRD), the draft plan was made available for review by the City of Albany along with a request for comments relating to consistency with the local government’s comprehensive land use plan. A sample of the letters requesting this input and responses received are contained in **Appendix A: Letter to and Letters from Affected Local Governments**.

1.4 Plan Update Schedule

The city anticipates submitting an update of this plan within 10 years of the date of submission (February 2032), and as required by OAR Chapter 690, Division 86, a progress report will be submitted in 5 years from the date of submission (February 2027). The city understands that a different schedule may be dictated by the Final Order approving this plan.

The population of Millersburg is growing at an average annual growth rate of 7.4%. The number of residential water accounts served by the City of Millersburg is growing at approximately 9 accounts per month, or 108 accounts per year. The city plans to update their Water System Master Plan by 2037 and their Comprehensive Land Use Plan by 2023.

Section 2: Water Supplier Description

OAR 690-086-0140

2.1 Source

690-086-0140(1)

The City of Millersburg has two water use permits that allow up to 22 cubic feet per second (cfs) total flow from the South Santiam River (S-52286), the Willamette River (S-52885), or a combination of the two sources. The Willamette River water right currently is undeveloped. The South Santiam water right has been amended to allow the point of diversion of this right to be transferred downstream to the Santiam River under permit amendment T-8257. The city jointly owns a water treatment plant with the City of Albany. This plant is known as the Albany-Millersburg Water Treatment Plant (A-M WTP). The raw water intake for

the A-M WTP is located on the west side of the Santiam River at River Mile 11.8, approximately one quarter mile downstream of the confluence of the North and South Santiam Rivers. The majority of flow at this location is representative of South Santiam River water. The South Santiam River Watershed is located in the Central Cascade Mountains and drains approximately 1,040 square miles.

If there are restrictions on surface water withdrawals in the Santiam River and Millersburg's water right is unavailable, the city is entitled to access a portion of the City of Albany's water rights as part of an Intergovernmental Agreement (IGA) signed in 2016. Albany has water rights dated 1878 and 1979. The City of Millersburg has water rights dated 1989.

2.2 Interconnections with Other Systems

690-086-0140(7)

The city's drinking water system is interconnected with the City of Albany. The Cities of Millersburg and Albany have an emergency intertie at 3246 Salem Avenue NE. During an emergency when the A-M WTP is not fully functional, the City of Albany can provide water from its Vine Street WTP to Millersburg through this intertie. The city has no other interconnections with public water systems.

The city also is a co-owner with the City of Albany of the Albany-Millersburg Water Reclamation Facility (A-M WRF). This facility treats domestic wastewater from both cities and began operation in the fall of 2009. Talking Waters Garden provides additional natural treatment to remove nutrients and lower the temperature of the A-M WRF effluent.

2.3 Intergovernmental Agreements

690-086-0140(1)

The City of Millersburg entered IGAs with the City of Albany for water distribution system maintenance services and for jointly-owned water facilities in 2016. These IGAs supersede previous agreements from 2005. Refer to **Appendix B: Albany – Millersburg Intergovernmental Agreement** for the full text of these IGAs. The water facilities jointly owned by the Cities of Albany and Millersburg include the water intake, pump station and pressure main, the A-M WTP, finished water reservoir, and the finished water pipeline up to the Millersburg master water meter. Albany employs the operator designated as the direct responsible charge (DRC) to supervise the A-M WTP up to the point of delivery to the Millersburg water system. Millersburg's public water system begins downstream of a 12-inch-diameter water meter near the intersection of Century Drive NE and Berry Drive NE. Millersburg employs the operator designated as the DRC to supervise Millersburg's distribution system downstream of the Millersburg master meter.

2.4 Service Area Description

690-086-0140(2)

Millersburg's current service area, shown in **Exhibit 2.1**, is bounded by the city limits. The city limits also define the city's urban growth boundary. The city has a total land area of 2,857 acres. Millersburg is a unique community in Oregon because commercial and industrial water customers dominate water consumption. According to land use planning documents, approximately 60 percent of the city's land area is zoned for commercial and industrial uses. In 2020, 91 commercial and industrial accounts were served, and accounted for approximately 64 percent of the city's annual water demand.

A number of factors contribute to the growing role of Millersburg as an industrial center. These include a favorable tax structure, excellent highway and rail accessibility, including proximity to Interstate 5, land area reserved for industrial development, and the availability of municipal water and sewer facilities. In addition, the opportunity to access water from the Willamette River for non-potable water applications is attractive to many industries.

By the end of 2020, the City of Millersburg had 1,008 residential customer accounts. At 2.71 people per household¹, this represented a service population of 2,732 out of a total city population of 2,850 as estimated by Portland State University's Population Research Center. The remaining population of approximately 118 obtained water from private wells.

¹ U.S. Census Bureau American Community Survey (ACS) data for the year 2019 indicates an average household size in Millersburg of 2.71 people.

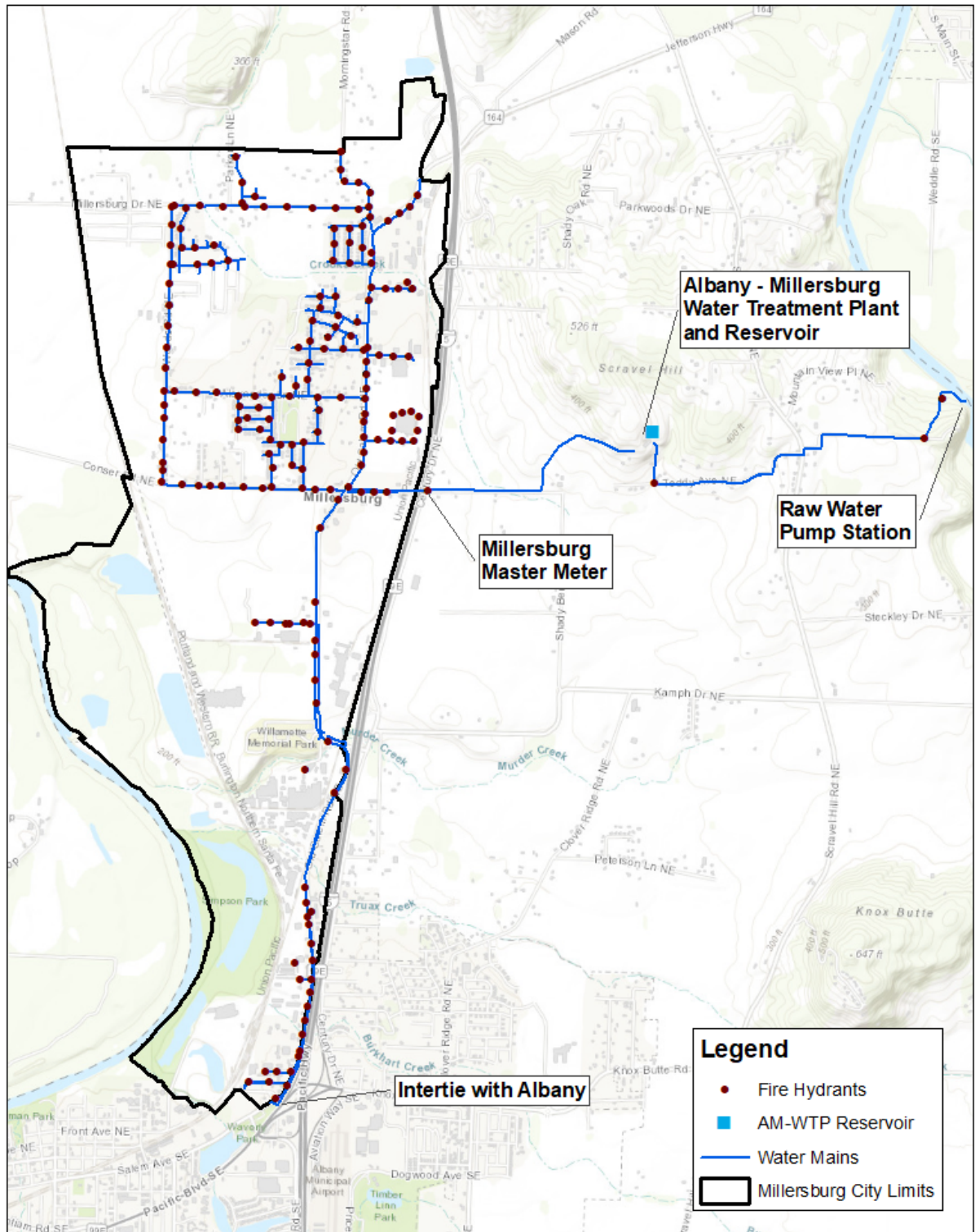


Exhibit 2.1 City of Millersburg Service Area

2.5 Records of Water Use

690-086-0140(4) and (9)

2.5.1 Terminology

The International Water Association and the American Water Works Association have published and promoted a water audit method that has been widely recognized and adopted throughout the water industry.² This method provides the definitions and classifications for annual water production and consumption shown in **Exhibit 2.2**. Determining the magnitude of each category can help a utility estimate the water use efficiency and financial impacts of production, billing, and leak detection practices.

Exhibit 2.2 Components of the IWA/AWWA Water Balance, Million Gallons Per Year^a

A	B	C	D	E
System Input Volume = Production= System Demand (measured at Master Meter(s))	Authorized Consumption	Billed Authorized Consumption	Billed metered consumption (including water exported to another system). Billed unmetered consumption.	Revenue Water
		Unbilled Authorized Consumption	Unbilled metered consumption. Unbilled unmetered consumption.	Nonrevenue Water
	Water Losses	Apparent Losses	Unauthorized consumption. Metering inaccuracies. Data handling errors.	
		Real Losses	Leakage on transmission and/or distribution mains. Leakage and overflows at storage tanks. Leakage on service connections up to point of customer metering.	

^a. *Ibid.*

System input, shown in Column A of **Exhibit 2.2**, refers to the total quantity of water delivered to a distribution system from all sources: for example, water treatment plants, wells, or wholesale purchases from neighboring systems. The quantity of this water is generally measured using large master meters located at key entry points into the distribution system. System input also is known as “production” and “demand.” By definition the system input volume must equal the sum of the authorized consumption and water losses that occur in the system (Column B of **Exhibit 2.2**). For Millersburg, production is measured at a single master meter, located near the intersection of Berry Drive and Century Drive.

Authorized consumption is divided into billed and unbilled categories. Billed authorized consumption is generally obtained from a utility’s customer billing system, and is equal to “revenue water.” Unbilled

² AWWA. Manual of Water Supply Practices M36. *Water Audits and Loss Control Programs, Third Edition*, 2009.

authorized consumption contributes to a system's nonrevenue water. Authorized consumption may be either metered or unmetered. Unmetered volumes must be estimated based on estimated flow rates and durations of flow. Examples of authorized billed consumption include metered consumption for residential, municipal, commercial, industrial, irrigation, and wholesale water customers. Authorized unbilled consumption may include public uses for fire fighting, street sweeping, or hydrant flushing.

Water losses include both apparent losses and real losses. Apparent losses result from meter inaccuracies, error introduced by data entry or data handling practices, and unauthorized consumption (illegal connections to the system or illegal uses of fire hydrants). Real losses result when water is lost to leakage, reservoir overflow, and evaporation. All water systems have some degree of real losses. Oregon Administrative Rules 690-086-0150 establish a goal for municipal systems to have "system leakage" (real losses) of no more than 15 percent of total system input or demand, and if feasible 10 percent or less.

Generally, demands and consumption in municipal systems are expressed in units of million gallons per day (mgd). They also may be expressed in cubic feet per second (cfs) or gallons per minute (gpm). One mgd is equivalent to 1.55 cfs or 694 gpm. For annual or monthly values, it is typical to refer to the total quantity of water in million gallons (MG). Water use per person (per capita use) is expressed in gallons per person per day (gpcd).

The following terms are used to describe specific values of system demands:

- Average day demand (ADD) equals the total annual production divided by 365 days. Production refers to the total amount of water that enters the system through the city's master meter.
- Maximum day demand (MDD) equals the highest system demand that occurs on any single day during a calendar year. It is also called the one-day MDD.
- Monthly demand equals the volume of water produced in a given month.
- Monthly average day demand equals the volume of water produced in a month divided by the number of days in a month.
- Monthly average day consumption equals the volume of water billed in a month divided by the number of days in a month.
- Maximum monthly demand (MMD) equals the highest monthly demand in one of the 12 months of a calendar year. MMD can be expressed as a total volume of water produced in a month, or as a daily demand value by dividing the total volume by the number of days in the month.
- Peaking factors are the ratios of one demand value to another. The most common and important peaking factor is the ratio of the MDD to the ADD.

2.5.2 Historical Water Demands

2.5.2.1 Annual Demands

The City of Millersburg purchases water wholesale from the City of Albany. **Exhibit 2.3** presents historic ADD, MDD, and MMD values. Demand values for calendar years 2016-2020 came from the Millersburg master meter record of flow from the AM-WTP. The average peaking MDD to ADD peaking factor for 2016 – 2020 was 1.7. ADD fluctuated between 2016 and 2020 between 0.84 to 0.95 mgd. MDD ranged from 1.46 to 1.64 mgd for the period of January 2016 to December 2020, and occurred in the month of July two times and in August three times. MMD ranged from 1.22 to 1.36 mgd and occurred in July twice and August three times.

Exhibit 2.3. Annual Demands (2016-2020)

Year	Total Yearly Demand (MG)	Average Day Demand (ADD)	Maximum Day Demand (MDD)	Date of MDD	Maximum Monthly Demand (MMD)	Month of MMD
2020	310.4	0.95	1.59	8/8/2020	1.35	August
2019	328.0	0.90	1.64	7/25/2019	1.29	July
2018	332.7	0.91	1.50	7/17/2018	1.30	July
2017	304.9	0.84	1.54	8/4/2017	1.20	August
2016	346.8	0.95	1.46	8/19/2016	1.26	August

Exhibit 2.4 presents Millersburg’s ADD data and the best fit linear trendline from the period of 2006 to 2020. Demand data from 2006 to 2010 was taken from the Oregon Water Resources Department (OWRD) database. Demand data from 2011 to 2020 was taken from records from the AM-WTP. ADD values fluctuated above and below the trendline, but on average the ADD remained stable over the fourteen year period from 2006 to 2020, perhaps as a result of the dominance of industrial demands .

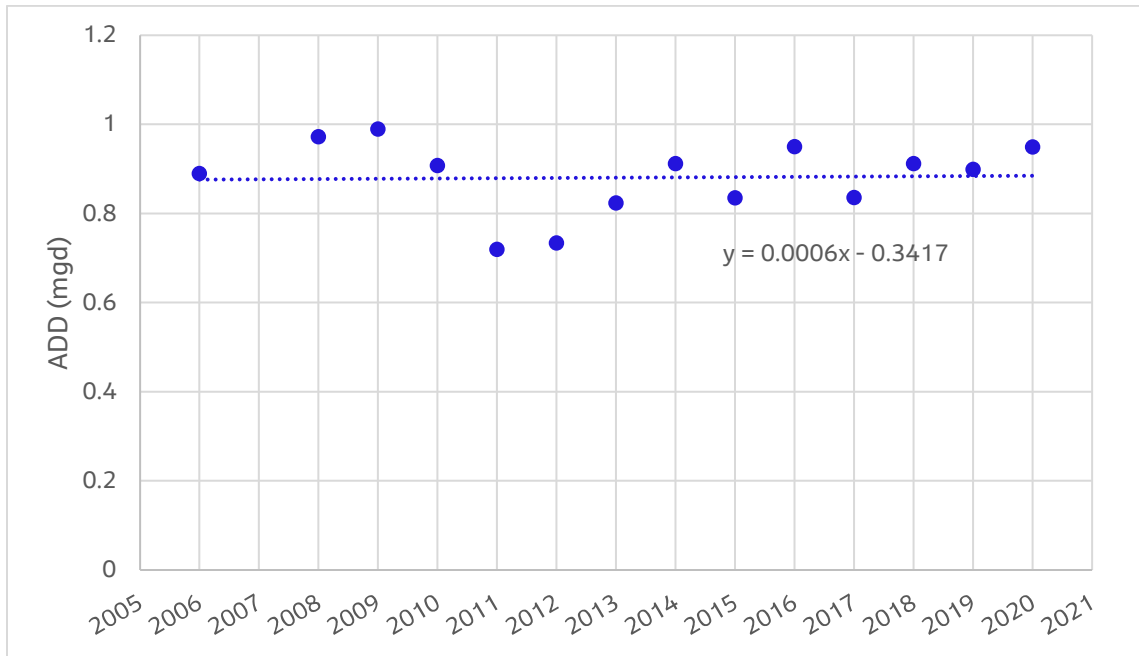


Exhibit 2.4 Historical ADD and Linear Trendline (2006 – 2020)

2.5.2.2 Monthly Demands

Exhibit 2.5 presents data recorded by the Millersburg master meter for calendar years 2016-2020. Metered data was not available for October and November 2020 because the AM-WTP was offline for valve repair and tank inspection / cleaning. The city was fed through the Salem Ave intertie with Albany and was billed based on the monthly averages for the prior three years. These monthly averages of 23.47 MG and 20.85 MG, respectively, were used for demand calculations.

Exhibit 2.6 graphically represents Millersburg’s monthly average day water demand, and Error! Reference source not found. shows monthly average, minimum, and maximum demands, from January 2016 through December 2020.

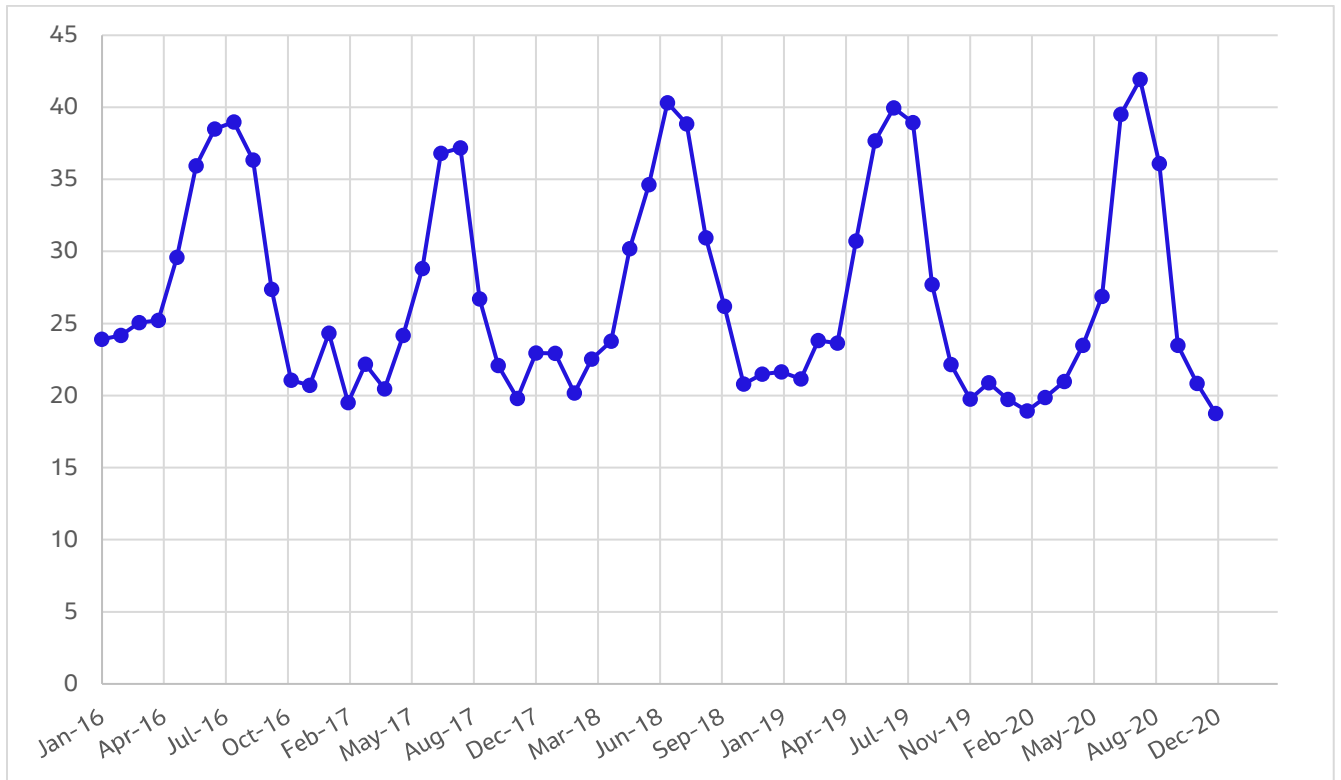


Exhibit 2.5 Monthly Water Demand (2016 – 2020)

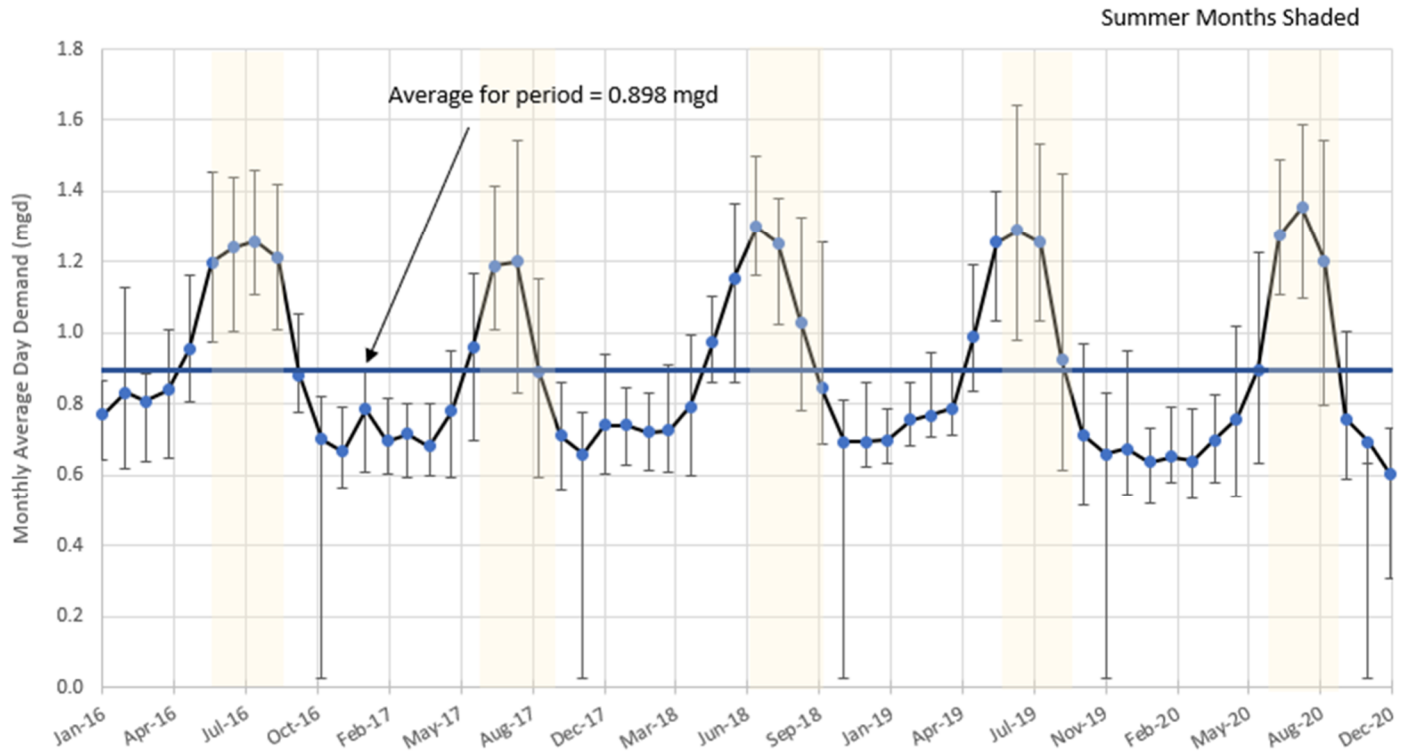


Exhibit 2.6 Monthly Average Day Demand (2016-2020)

2.5.3 Customer Characteristics and Water Use Patterns

The City of Millersburg billing department categorizes customers as commercial (including industrial accounts) and residential. All customers served by the City of Millersburg are metered. A new utility billing system was adopted in 2017. Prior to September 2017, customers were billed monthly. After September 2017 the billing period switched to bi-monthly. Metered consumption was estimated by the city for the period of November 2017 to January 2018 as some data loss occurred during a change to a new billing system over that time period.

Water use in the city is dominated by commercial and industrial users. **Exhibit 2.7** summarizes the annual metered consumption for residential and commercial/industrial accounts for 2020. For comparison, the average percentage of total metered consumption by account type for the 5 year period of 2016-2020 is shown. Over the five year period, residential metered consumption accounted for 28 percent and commercial metered consumption accounted for 72 percent of total metered consumption. Residential demand in 2020 was higher than in previous years while industrial demand was lower. This follows the general trend for the 5-year period as the population of Millersburg grows and the number of commercial and industrial businesses remains stable. Residential demand may also have been particularly high due to the COVID-19 pandemic as many residents stayed home rather than going to work at commercial businesses.

Exhibit 2.7 Annual Metered Consumption by Consumer Category

Customer Category	Number of Accounts 2020	Percent of Accounts 2020	Metered Volume 2020 (MG)	Percent of Annual Metered Volume 2020	Average Volume Metered 2016-2020 (MG)	Average Percent of Annual Metered Volume 2016-2020
Residential	1008	92%	96.2	36%	75.0	27%
Commercial / Industrial	91	8%	169.6	64%	199.2	73%
Total	1099	100%	265.8	100%	274.1	100%

Exhibit 2.8 Comparison of Metered Consumption **Exhibit 2.8** shows a comparison of metered consumption by category between the previous 2012 WMCP, 2017 Five Year Progress Report and 2020 data. Over the last decade the total amount of water consumed across all customer categories has stayed relatively consistent. Both the amount and share of residential consumption has increased since 2010. The share of commercial / industrial consumption has dropped over the last decade, but still remains dominant.

Exhibit 2.8 Comparison of Metered Consumption (with 2012 WMCP and 2017 Progress Report)

Customer Category	Metered Volume 2010 (MG)	Metered Volume 2016 (MG)^a	Metered Volume 2020 (MG)	Percent of Annual Metered Volume 2010	Percent of Annual Metered Volume 2016	Percent of Annual Metered Volume 2020
Residential	29.4	49.2	96.2	12%	17%	36%
Commercial / Industrial	222.0	239.8	169.6	88%	83%	64%
Total	251.4	289.1	265.8	100%	100%	100%

a. Municipal and Irrigation categories from the 2017 Progress Report included under Commercial / Industrial

In 2020, the top three commercial and industrial consumers represented 0.9 percent of accounts and were responsible for 53 percent of the overall annual consumption. **Exhibit 2.9** represents a summary of the 2020 metered consumption by the top three commercial customers.

Exhibit 2.9 Metered Consumption by the Top Three Commercial Customers

Customer	Annual Consumption (MG)	Average Annual Consumption (mgd)	Percent of City's Total 2020 Billed Consumption
ATI	114.4	0.31	43%
Georgia-Pacific	16.4	0.04	6%
Arauco	9.3	0.03	3%
Total	140.1	0.38	53%

The large commercial and industrial component of annual consumption suggests that conservation efforts focused on commercial and industrial water use will provide the greatest potential for water savings from conservation. It also provides a particular challenge for water demand projection. The addition or loss of a single large customer can dramatically affect demand.

Because the top three customers are responsible for such a high percentage of the total billed consumption, this conservation plan focuses on conservation measures for these specific customers.

Appendix C: Water Use Surveys of Three Largest Water Users provides further information regarding metered water use for the top three industrial consumers and their current conservation and curtailment actions.

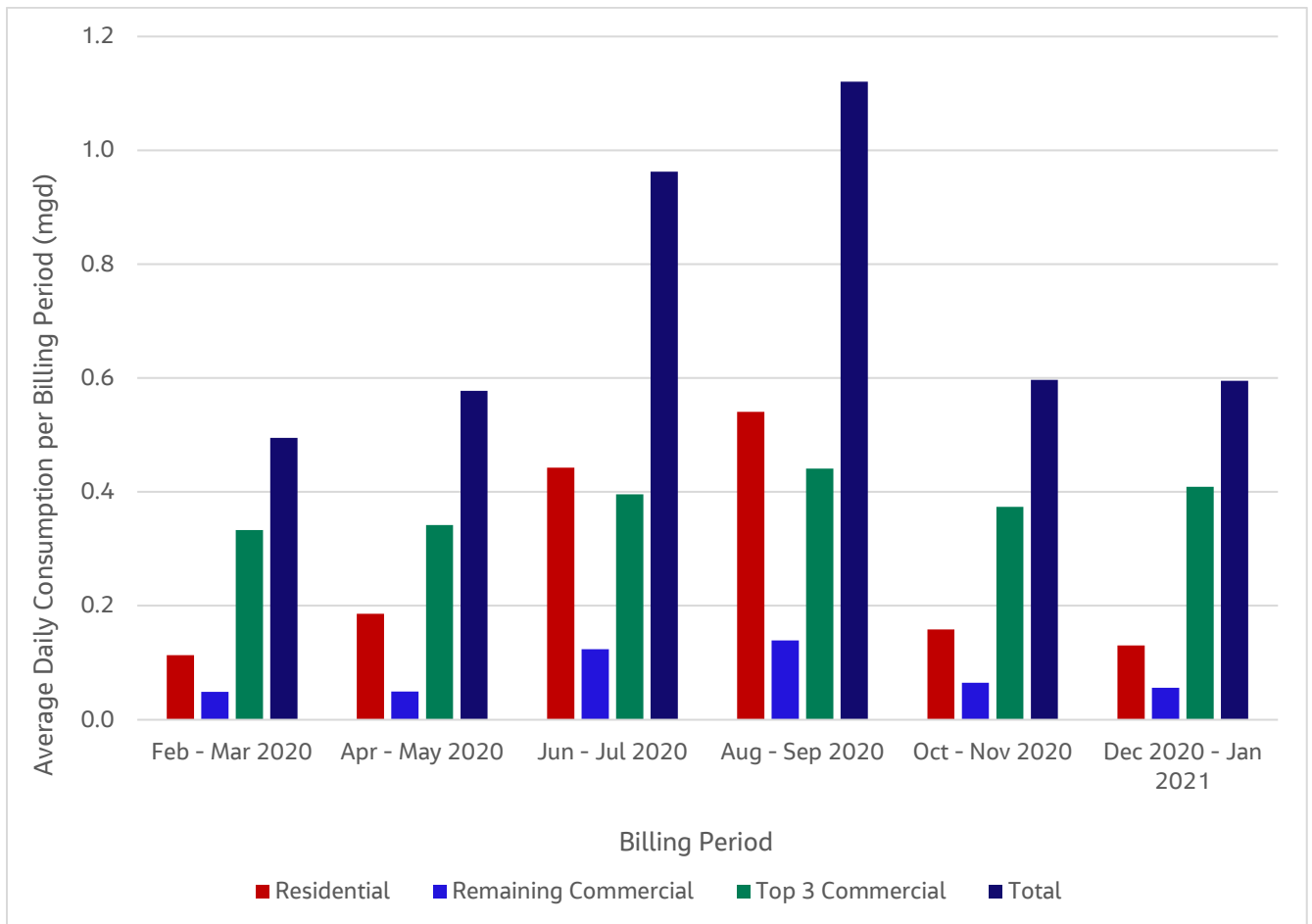


Exhibit 2.10 shows the bi-monthly average day consumption by customer category from the City of Millersburg billing records for the period of January 2020 to January 2021. The total commercial consumption varied from 0.38 to 0.58 mgd with an average of 0.46 mgd for the 12-month period. The metered consumption for the top three commercial users varied from 0.33 to 0.44 mgd with an average of 0.38 mgd. Water consumption by the top three commercial consumers outpaced total residential

consumption during the winter months.

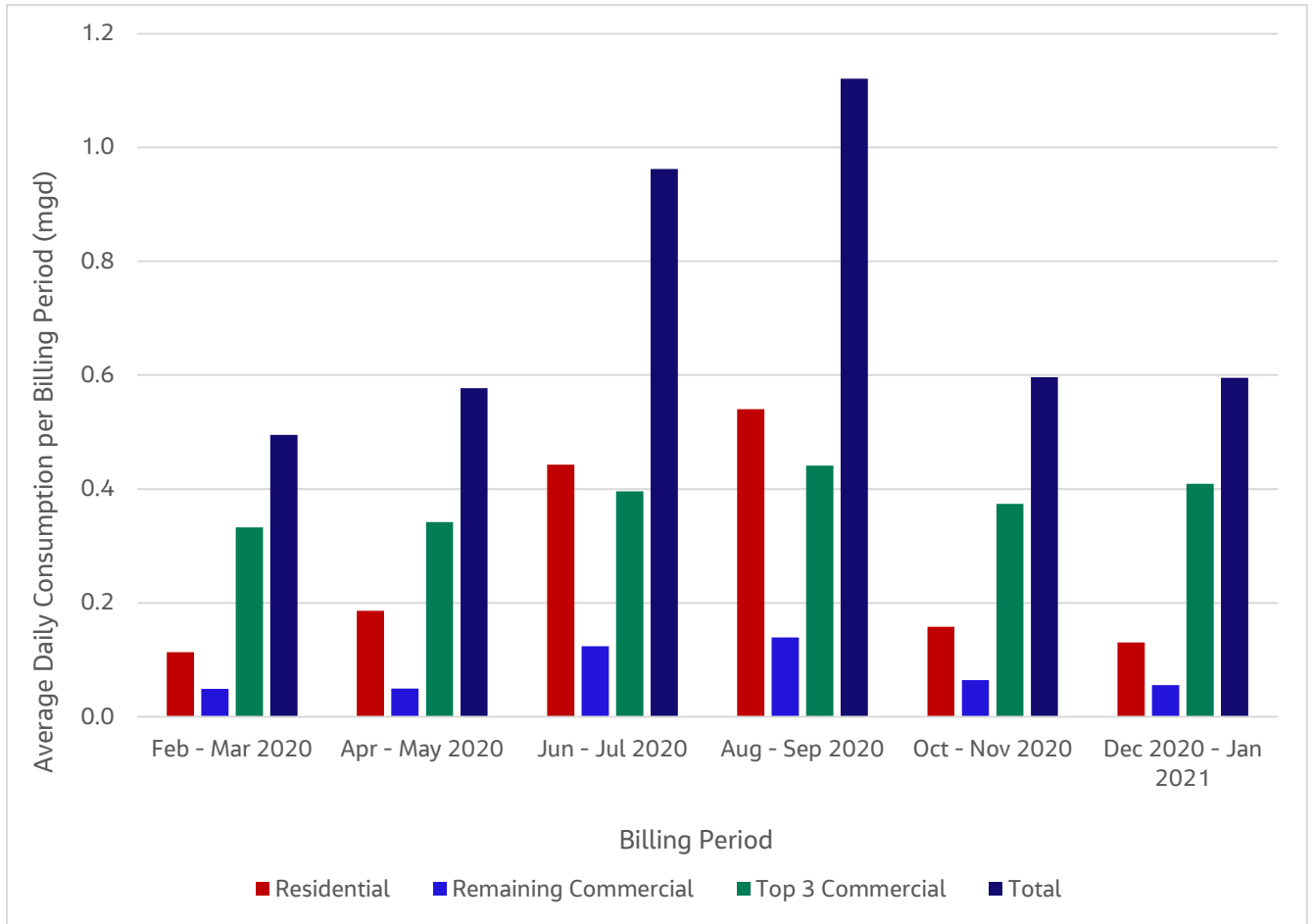


Exhibit 2.10 illustrates the large impact the top three commercial users have on overall water consumption.

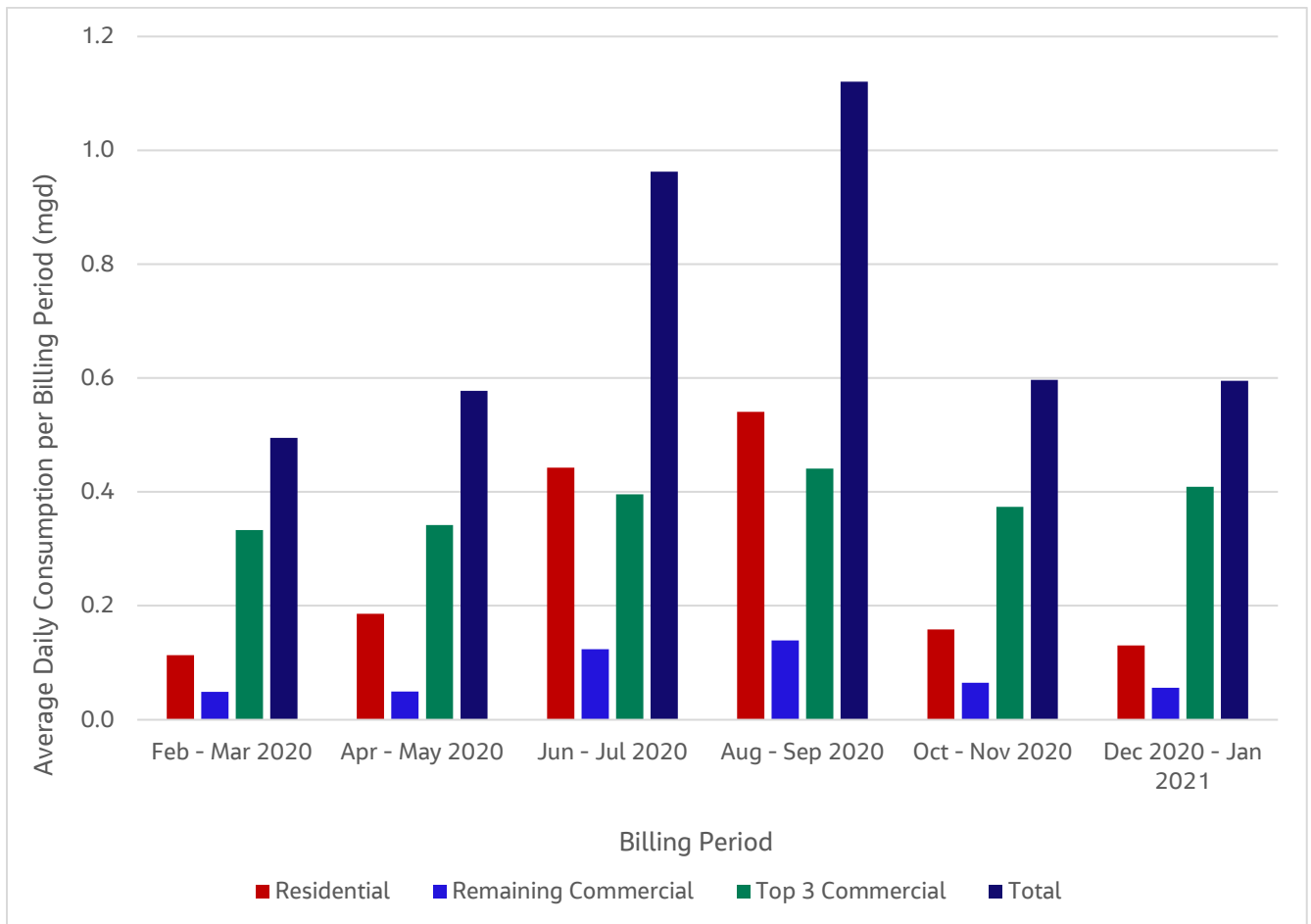


Exhibit 2.10 Bi-Monthly Average Day Consumption by Customer Category, 2020

2.5.4 Residential Consumption and per Capita Demand

Millersburg’s population has grown significantly in recent years, and the percentage of residential consumption has increased from approximately 12 percent in 2012 to 36 percent in 2020. The number of residential accounts has grown steadily since 2016 and planned residential development is likely to continue this trend. **Exhibit 2.11** shows recent trends in the number of residential and commercial accounts. The number of residential accounts increased at a rate of approximately 9 accounts per month over the entire period shown. As the percentage of residential use increases, benefits of conservation measures targeting residential water use will also increase.

The number of commercial accounts remained stable. Because of the large variation in commercial and industrial water needs, the addition or subtraction of even one account for an industrial customer that uses large amounts of water can have a significant impact on overall water use.

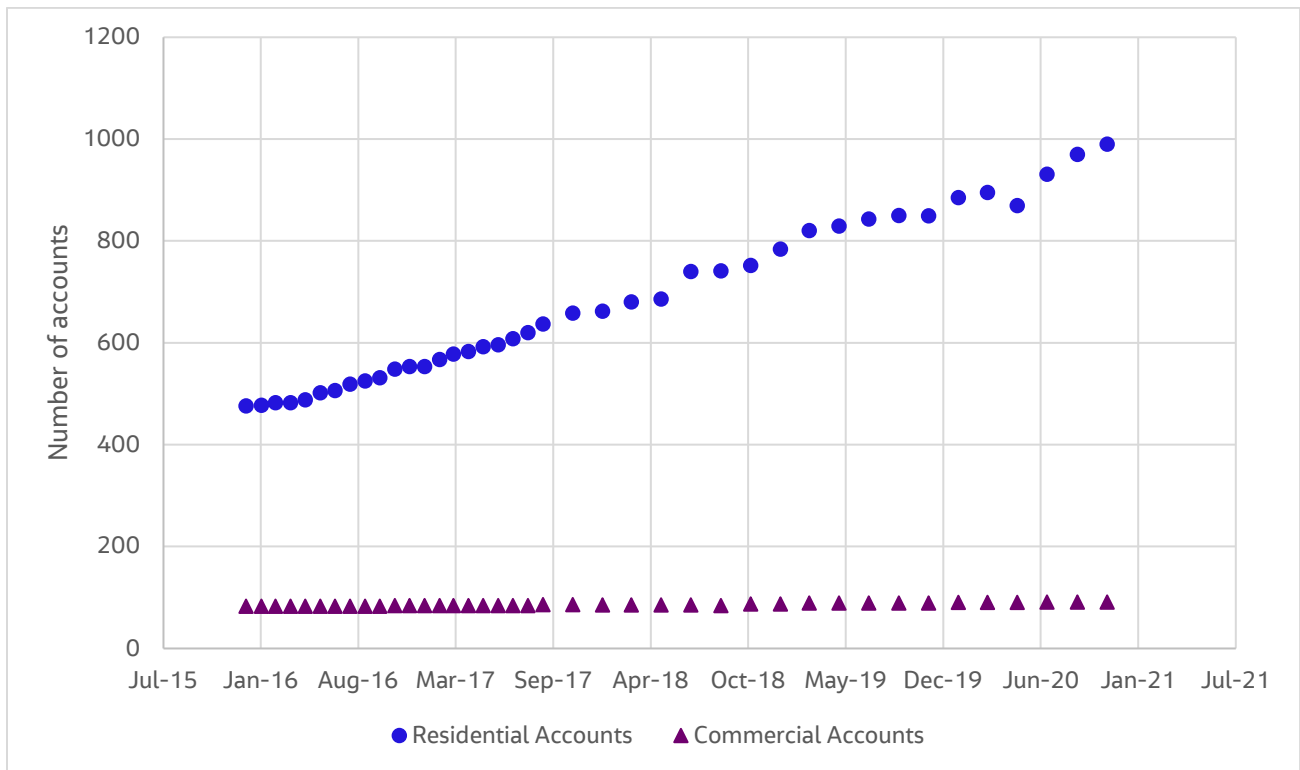


Exhibit 2.11 Trends in the Number of Residential and Commercial Accounts (2016-2020)

2.5.4.1 Seasonal Consumption

Exhibit 2.12 presents the average monthly consumption for residential and non-residential accounts by season. For the purposes of this plan, the summer months are defined as June through September, and winter months are defined as December through March to account for the bimonthly billing structure. The total average monthly consumption for the summer months was 32 MG per month compared to an annual average of 22.1 MG per month and a wet season average of 16.5 MG per month. The dry season to wet season ratio of approximately 1.9 ($32/16.5 = 1.9$) is unusually low for Willamette Valley water utilities, but reflects the dominance of industrial customers that have more consistent, year-round water needs. The dry season to wet season ratio for residential customers was 4.1 ($15.4/3.8 = 4.1$), which is more typical of single family residential areas in the region.

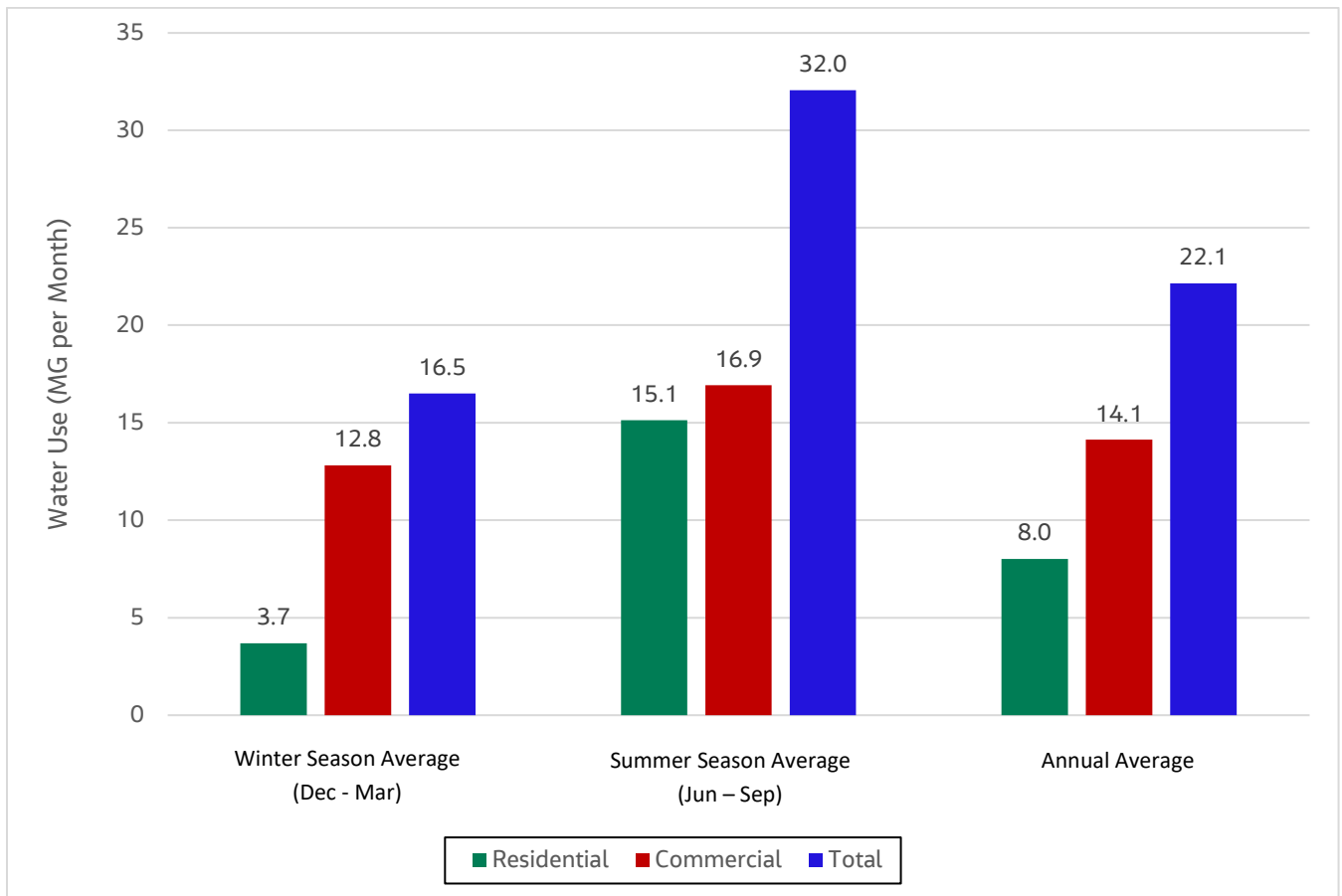


Exhibit 2.12 Average Monthly Consumption by Customer Category by Season (2012-2020)

If wintertime consumption is assumed to be representative of annual residential indoor water use (or at least to exclude outdoor irrigation), the winter season average rate of 3.7 MG per month for residential customers can be applied to a 12-month period to determine the average annual indoor consumption. Water used for residential irrigation is the difference between total residential use and the calculated indoor use. **Exhibit 2.13** presents the average annual indoor and outdoor use for residential customers for 2020. Outdoor use represented approximately 54 percent of annual consumption while indoor use represented 46 percent.

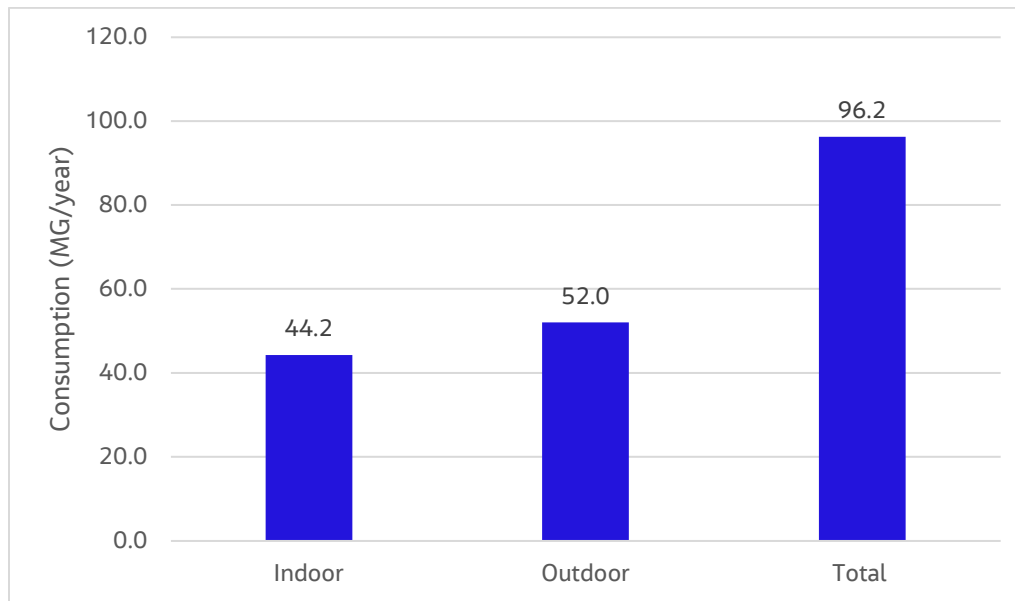


Exhibit 2.13 Average Indoor and Outdoor Residential Use, 2020

One reason for the relatively large percentage of outdoor water use may be because many of the customers are in new homes with new landscapes that require more irrigation than established plants.

2.5.5 Residential per Capita Demands

Monthly residential per capita demands were estimated from billing data. Service populations were estimated by multiplying the number of residential accounts by 2.71 people per account.

Exhibit 2.14 shows estimated monthly average day demand per person for residential customers from 2016 through 2020. The annual average residential per capita demand was 111 gpcd, and the average per capita demand for June through September was 203 gpcd. The annual average per capita demand was 13 percent lower than the 2012 WMCP plan demand of 128 gpcd. A maximum day residential per capita demand value was estimated from the average day value by multiplying by a typical residential MDD to ADD peaking factor of 2.5

From December through March the average per capita residential water demand was approximately 49 gpcd. This is 23 percent lower than the 2012 WMCP plan demand of 64 gpcd. Assuming the demand during these months is representative of annual residential indoor demand, according to the American Water Works Association (AWWA), Millersburg's indoor demand value is on the low end of the typical indoor residential water demand range of 50-70 gpcd³.

Millersburg's outdoor per capita water demand was similarly estimated at approximately 58 gpcd annually, which falls within the typical range of 10-80 gpcd³.

3. AWWA. Manual of Supply Practices M52: Water Conservation Programs – A Planning Manual, Second Edition, p.37.

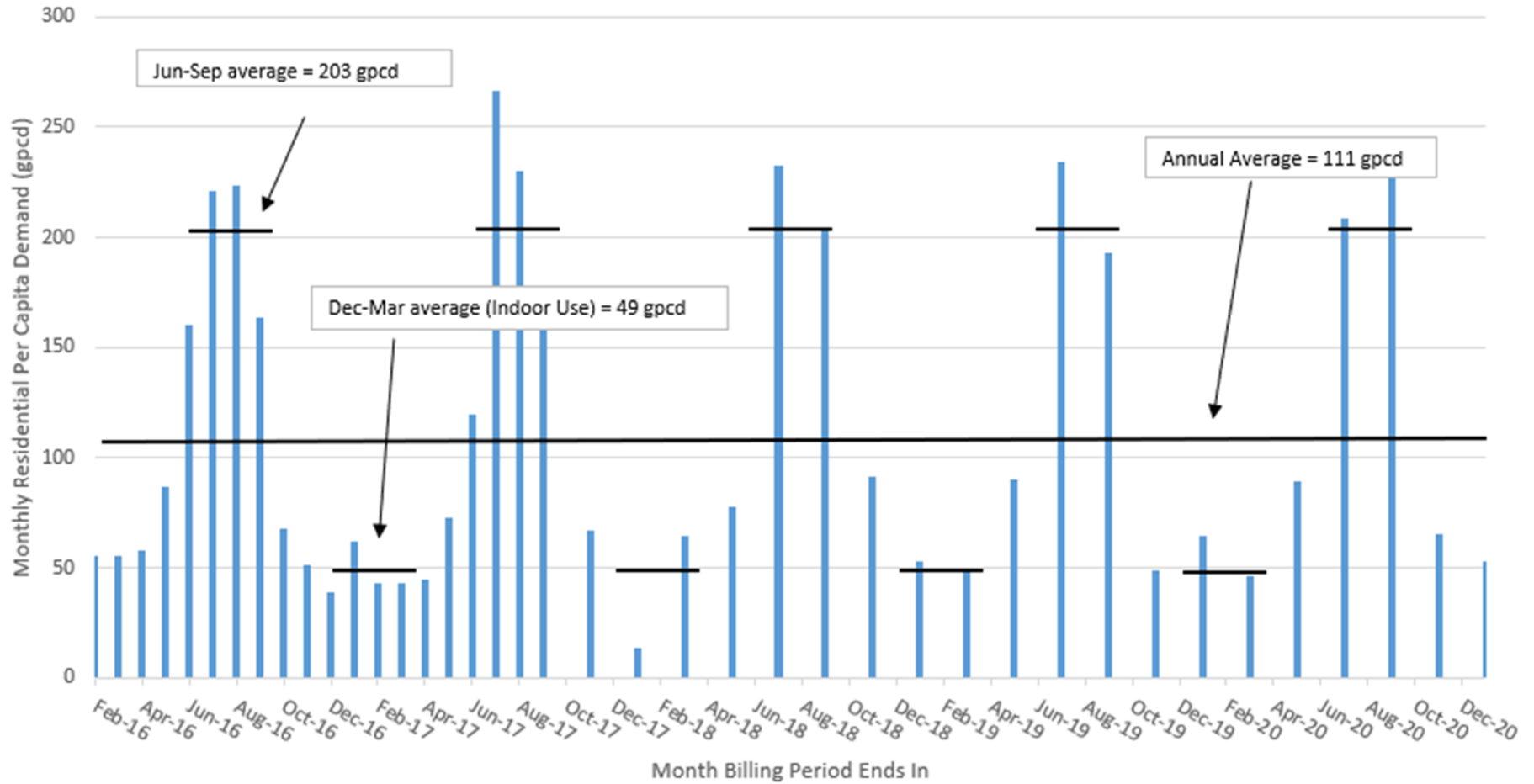


Exhibit 2.14 Monthly Residential per Capita Demand (2016-2020)

2.5.6 Top-Down Water Audit

Exhibit 2.15 summarizes annual top-down water audits for the period of 2016 through 2020, performed in accordance with the AWWA Water Audits and Loss Control Programs Fourth Edition Manual and AWWA Free Water Audit Software v6.0.

Water imported values were obtained from the City of Albany. Billed metered and unbilled metered volume (from hydrants) data was obtained from City of Millersburg records. Unbilled unmetered losses were not assumed to be equal to zero, but were estimated at 0.25 percent of billed authorized consumption. Apparent losses were also estimated as a percentage of billed authorized or authorized metered consumption. Some of these apparent losses are unavoidable and occur through systematic data handling errors such as meter reading errors, and error introduced from data manipulation of the billing system. Customer meter inaccuracy was estimated at 0.5 percent, and unauthorized consumption was estimated at 0.25 percent of billed authorized consumption. Percentages used to estimate apparent water losses are on the low end of ranges suggested in the AWWA Water Audit software version 4.6. 0.5 percent meter accuracy was selected because the city's large meters are tested annually.

As shown in **Exhibit 2.15** the city had total losses averaging 44.7 MG and real losses averaging 41.9 MG per year for the period 2016-2020. The average percentage of real losses to water supplied was 13 percent.

Non-revenue water is equal to the unbilled authorized consumption and water losses. The city averaged an estimated 46.5 MG of non-revenue water out of 324.6 MG imported annually over the five-year period, for a nonrevenue water rate of 14 percent.

Exhibit 2.15 Top Down Water Audit (2016 – 2020)

Year	Water Imported from City of Albany (MG)	Water Supplied ^a (MG)	Authorized Consumption					Losses					Real Loss Percentage of Production	
			Billed		Unbilled		Total Authorized Consumption (MG)	Apparent				Real (MG)		Total (MG)
			Metered (MG)	Unmetered (MG)	Metered (hydrants) (MG)	Unmetered ^b (MG)		Unauthorized Consumption ^c (MG)	Customer Metering Error ^d (MG)	Systematic Data Handling Errors ^e (MG)	Total Apparent Losses (MG)			
2020	310.440	307.336	265.8	0	0.0875	0.664	266.532	0.664	1.336	0.664	2.665	38.139	40.804	12%
2019	327.987	324.707	283.1	0	3.1042	0.708	286.902	0.708	1.438	0.708	2.854	34.951	37.805	11%
2018	332.746	329.419	288.4	0	2.7452	0.721	291.856	0.721	1.463	0.721	2.905	34.658	37.563	10%
2017	304.933	301.884	238.5	0	3.1042	0.596	242.190	0.596	1.214	0.596	2.406	57.287	59.693	19%
2016	346.762	343.294	294.9	0	0.0875	0.737	295.735	0.737	1.482	0.737	2.957	44.603	47.560	13%
Average											2.757	41.927	44.685	13%

Gray columns estimated per AWWA water audit software guidelines

- a. Estimated as 1.00% over-registration of water imported
- b. Estimated as 0.25% of Billed Authorized Consumption volume. AWWA default value.
- c. Estimated as 0.25% of Billed Authorized Consumption volume. AWWA default value.
- d. Estimated as 0.5% under-registration of Billed Authorized Consumption volume.
- e. Estimated as 0.25% of Billed Authorized Consumption volume. AWWA default value.
- f. Higher than average loss likely due to data corruption when switching over to the new billing system.

2.6 City Water Rights

690-086-0140(5)

The City of Millersburg holds two water use permits that allow up to 14.2 mgd (22 cfs) total flow from the South Santiam River, the Willamette River, or a combination of the two sources. Permit S-52885 authorizes use of up to 22.0 cfs from the Willamette River, and Permit S-52886 authorizes use of up to 22.0 cfs from the South Santiam River, but the city's diversion under both permits cannot exceed a total of 22.0 cfs.

Exhibit 2.16 summarizes the city's water rights, and withdrawal data.

Permit S-52885 authorizes appropriation of up to 22.0 cfs (in combination with Permit S-52886) from the Willamette River for municipal use. This permit has a priority date of August 31, 1989, and has an original date for completion of development of October 1, 1999. The city applied for an extension of time for completion of development, and on March 25, 2008, OWRD issued a final order, extending the completion date to October 1, 2049.

The city's second permit, S-52886, authorizes appropriation of up to 22.0 cfs (in combination with Permit S-52885) from the South Santiam River for municipal use. The permit has a priority date of August 31, 1989, and had an original date for completion of development of October 1, 1999. The City of Millersburg applied for and received an extension of time, which authorized a new completion date of October 1, 2049. Permit S-52886 originally authorized appropriation from a point of diversion on the South Santiam River. The point of diversion was subsequently changed to the Santiam River through permit amendment T-8257. Use of water is limited to the amount of water lawfully available at the original point of diversion. In addition, the city applied for a permit amendment (T-9639) to change the point of diversion to more correctly identify the location on the Santiam River, and change the place of use to add the City of Albany to the service area. OWRD issued an order approving T-9639 on January 14, 2008.

If there are restrictions on surface water withdrawals in the Santiam River and Millersburg's water right is unavailable, the city is entitled to access a portion of the City of Albany's water rights as part of an Intergovernmental Agreement (IGA) signed in 2016. Albany has water rights dated 1878 (Cert 83976) and 1979 (Permit S 44388).

Exhibit 2.16 City of Millersburg Water Rights

Source	Priority/ Issuance Date	Certificate/ Permit/ Application	Quantity	Type of Use	Maximum Rate of Withdrawal to Date		Water Year 2020 Average Withdrawal		Five-Year Average Withdrawal	Authorized Date for Completion
					Instantaneous (gpm)	Annual (MG)	Daily (mgd)	Monthly (MG)	Monthly (MG)	
Willamette River.	8/31/198 9	Permit: S- 52885 App: S- 70056	22.0 ^a cfs 14.2 mgd	MU	0	0	0	0	0	10/1/2049
Santiam River	8/31/198 9	Permit: S- 52886 App: S- 70055 Transfer: T-9639	22.0 ^a cfs 14.2 mgd	MU	9,874 (= 14.2 mgd)	346	0.09	28.8	29.3	10/1/2049

a. Permits S-52885 and S-52886 are not to exceed 22.0 cfs in combination

Exhibit 2.17 Diversion by Water Year

Water Right ^a	Permit No.	2016			2017			2018		
		Annual Diversion (MG)	Average Monthly Diversion (MG)	Average Daily Diversion (mgd)	Annual Diversion (MG)	Average Monthly Diversion (MG)	Average Daily Diversion (mgd)	Annual Diversion (MG)	Average Monthly Diversion (MG)	Average Daily Diversion (mgd)
Willamette River	S-52885	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Santiam River	S-52886	350.1	29.2	1.0	340.1	28.3	0.9	356.4	29.7	1.0

Source	2019			2020			Five-Year Maximum Rate of Withdrawal	Five-Year Average Withdrawal
	Annual Diversion (MG)	Average Monthly Diversion (MG)	Average Daily Diversion (mgd)	Annual Diversion (MG)	Average Monthly Diversion (MG)	Average Daily Diversion (mgd)	Monthly (MG)	Monthly (MG)
Willamette River	0.0	0.0	0.0	0.0	0.0	0.0	0	0
Santiam River	363.4	30.3	1.0	346.0	28.8	0.9	46.7	29.3

a. Permits S-52885 and S-52886 are not to exceed 22.0 cfs in combination

2.6.1 Aquatic Resource Concerns

The Santiam River is on the Oregon Department of Environmental Quality’s (DEQ) 303(d) list of water quality-limited streams because of methylmercury (year-round) and temperature (year-round). The South Santiam River, where the original point of diversion is located, is also temperature impaired year-round. The Willamette River is also on DEQ’s 303(d) list of water quality limited streams because of multiple water quality impairments. Some of the impairments encompassing the point of diversion include the following: temperature (year-round), aquatic weeds, bio criteria (fish deformities), dioxin, dissolved oxygen, iron, and methylmercury. A full list of water quality limiting parameters for the Santiam and Willamette Rivers can be found on [DEQ’s Web link](#).

The Santiam and Willamette Rivers support a number of fish species that are listed as Threatened, Endangered or Sensitive under federal and state laws. The listed fish species are summarized in **Exhibit 2.18**

Exhibit 2.18 Summary of Water Quality Limitations and Listed Fish Species by Source

Source ^a	Water Quality Limitations and Listed Fish Species
Willamette River.	The Willamette R. is 303(d) listed for water quality impairment in many reaches. At the POD a few of the impairments are: temperature, aquatic weeds, bio criteria, dissolved oxygen, iron, and methylmercury. Listed Species: Chinook salmon, steelhead, Coho salmon, Bull trout, and Pacific lamprey
Santiam River	The Santiam River is on the DEQ's 303(d) list of water quality limited streams for methylmercury and temperature. The S. Santiam River is listed as temperature impaired. Listed species: Chinook salmon, steelhead, and Pacific lamprey.

a. Neither source is located in a critical groundwater area.

2.7 Evaluation of Water Rights / Supply

Daily-mean flows on the Santiam River at the City of Jefferson are recorded by USGS gage No. 14189000, which is two miles downstream from the point of diversion for permit S-52886 on the Santiam River. Over the last 50 years these flows ranged between a low of 764 cfs in 1992 and a high of 115,000 cfs in 1996. The average daily-mean flow for water years 2016 through 2020 was 7,053 cfs. The flows on the Santiam River have been regulated at Detroit Reservoir and Big Cliff Reservoir since 1953 and at Green Peter and Foster Reservoirs since 1966. There are two minimum perennial streamflows on the Santiam River (MF-167 and MF-168), which have not yet been converted to instream water rights, and are downstream from the current point of diversion. MF-167 was established on June 22, 1964, and is for 320 cfs on the Santiam River and its tributaries-- to be measured between the mouth and RM 1. MF-168 was established on June 22, 1964, and is for 330 cfs on the Santiam River and its tributaries above the USGS gage at Jefferson (No. 14189000) -to be measured at the gage.

The city’s use of water under Permit S-52886 is not likely to be regulated. Access to water under this permit is limited to the amount of water lawfully available at the original point of diversion on the South Santiam

River. OWRD's on-line water availability database indicates water is available most months of the year for new appropriations from the South Santiam River based on an 80 percent exceedance probability. Water availability is listed as "limited" at the point of diversion in August – October as the total of consumptive uses, storage, and instream flow requirements is larger than predicted natural stream flow. Based on data from USGS gage No. 14187500 (well upstream from the original point of diversion) flows of greater than 640 cfs were met at least 95 percent of the time during the lowest flow month of July from 2000 to 2020. This amount of water is more than sufficient to meet permit S-52886 and other existing water rights on the South Santiam River. Further, it is unlikely that the city's water use would be regulated in favor of senior water users on the Santiam River. Although there are approximately thirty water rights on the mainstem Santiam River that are senior to Millersburg's permit, to date, the OWRD watermasters have not had to regulate junior users on the Santiam River system.

The USGS gage No. 14174000 on the Willamette River at Albany is approximately four miles upstream from the city's point of diversion for permit S-52885. Over the last 50 years this gage showed flows ranging between a low daily-mean discharge of 2,950 cfs in 1977 and a high of 117,000 cfs in 1996. During water years 2016 through 2020, the average daily-mean flow was 12,529 cfs. The flows in this part of the Willamette River are regulated by nine upstream reservoirs that are controlled by the United States of America Corps of Engineers (USACE). Established operational target flows, set by USACE, for the Albany gage are 4,500 cfs with increases above this level to address steelhead migration in the spring and water quality concerns in the summer and fall. In the *Fish Persistence Evaluation* performed for the city's request for an extension of time on permit S-52885, the Oregon Department of Fish and Wildlife (ODFW) stated the following:

Based on the Oregon Plan Flow Restoration 2001 priorities developed by ODFW and OWRD, the Willamette River downstream of the POD shows a low need for flow restoration if USACE target flows are maintained.

The Willamette Basin Program (OAR 690-502) established a minimum perennial streamflow of 1,300 cfs. This flow, MF-183, is in a reach that includes the city's Willamette River point of diversion.

There is ample water available in the Willamette River to satisfy the city's permit S-52885. After considering all existing consumptive use and non-consumptive use water rights (including instream water rights), OWRD's on-line water availability database indicates a water supply is available for new appropriations above Mollalla River based on an 80 percent exceedance probability.

In summary, permits S-52885 and S-52886 provide a reliable water supply for the City of Millersburg.

2.8 System Description

690-086-0140(3)

The Albany-Millersburg Joint Water System has a direct river intake, a raw water pumping station, an immersed membrane filtration plant, a 5.7-MG finished water reservoir located at the A-M WTP, and approximately six miles of transmission pipeline. Water is pumped from the Santiam River using up to three of four raw water pumps depending on flow requirements. (The fourth pump is a reserve pump.) Screens on the intake prevent fish and debris from entering the system. Raw water is drawn from the river through four

24-inch gravity pipes to the raw water pump station wet well. Water is pumped to the A-M WTP through a 36-inch pipe.

The A-M WTP capacity depends on water temperature and other water quality factors and to date, has produced up to 19 mgd (29.4 cfs) for a 2-day period. The City of Millersburg and the City of Albany each report their respective water demands from the A-M WTP under OAR Chapter 690, division 85.

The City of Millersburg's distribution system is comprised of approximately 23 miles of pipeline. As shown in **Exhibit 2.19**, approximately 94 percent of the piping is ductile iron and 46 percent is ten inches or greater in diameter. Several sections of asbestos cement pipe parallel newer a ductile iron pipe main along Old Salem road. According to the city's Capital Improvement Plan, the city plans to abandon the remaining asbestos pipe and switch all connections to the ductile water main by 2024. All new piping was pressure tested after installation to meet the requirements of the Oregon Department of Human Services Drinking Water Program.

Exhibit 2.19 Millersburg Distribution System Pipe Inventory

Material	Feet per Diameter in Inches											Total (ft)	Total (mi)	Percent by Material (%)	
	2	4	6	8	10	12	16	20	24	28	Other				
Asbestos Cement (AC)		7		1,705	2,833	546							5,091	1	4.23%
Cast Iron (CIP)						48							48	0	0.04%
Copper (Cu)	6												6	0	0.005%
Ductile Iron (DI)		4,001	3,144	55,683	28	27,117	1,050	17,810	4,543				113,376	21	94.16%
High Density Polyethylene (HDPE)						5	72			1,739			1,816	0	1.51%
Other			67								10		77	0	0.06%
Total	6	4,008	3,211	57,388	2,861	27,716	1,122	17,810	4,543	1,739	10		120,414	23	
Percent by Diameter (%)	0.00%	3.33%	2.67%	47.66%	2.38%	23.02%	0.93%	14.79%	3.77%	1.44%	0.01%				

Section 3: Water Conservation

OAR 690-086-0150 (1) – (6)

3.1 Summary of Highest Conservation Priorities

At the time of the 2012 WMCP the city's water demand was heavily dominated by commercial and industrial customers who used approximately 90 percent of the total water. As such, conservation measures were targeted toward large industrial customers. Over the last decade the population of Millersburg has grown rapidly and the percentage of water used by residential accounts has grown proportionally. While commercial/ industrial accounts still accounted for 64% of the total metered volume in 2020, the impact of residential accounts is growing. Going forward, the city will focus on conservation measures targeting both industrial and residential water users.

The following list summarizes the recommended priorities for Millersburg's water conservation program:

- Continue to improve the annual water audit data collection and management process.
- Perform a leak detection survey and address significant identified leaks to reduce system leakage.
- Continue to monitor and calibrate large meters (>3") annually to ensure accurate water usage reporting.

3.2 Current Conservation Measures

690-086-0150(1) and (3)

Exhibit 3.1 contains a progress report update on conservation measure benchmarks planned in the 2012 WMCP and the 2017 Five-Year Progress Report.

Exhibit 3.1 Conservation Benchmark Updates

Item	2012 WMCP Benchmark	2017 Progress Report Status	2022 Status
1. Water Audit	Continue to improve annual water audit data collection and management. Include estimates of authorized but unbilled water consumption to improve revenue recovery. Allocate money in the city's budget toward initiating water audits for the top three water consumers by 2015.	At the time of this progress report, the city had not yet implemented an annual water audit. An annual audit will be programmed into the city's schedule beginning in 2018. In 2017 the city conducted a water master plan, which included evaluating water audit data for the period of 2012-2016. The results are provided below.	Regular water audits were not implemented prior to 2021. Water audits were performed retroactively with historical data. The city is working on developing and refining a regular water audit workflow and calculation process. The delayed implementation of the regular annual water audit is due to two major factors: staffing changes at the city in 2018 and software issues with Utility Billing system. The new Utility Billing system implementation process was lengthy, with first bills from new system issued in 2021. The implementation of this new Utility Billing system will allow the city to more efficiently complete annual water audits.
2. Fully Metered System	Meter or otherwise tag "fire only" connections to the city's water supply to discourage unauthorized water use	The city's system is fully metered. The city also continues to require meters for all development within its service area. The city requires contractors accessing bulk water from fire hydrants to first check out a calibrated meter that is installed by a city staff person in order to use water from the hydrant.	The city continues to be fully metered. Meters are required for all development within the city's service area. The city continues to track and bill for metered fire hydrant usage.
3. Meter Testing & Replacement	Through an on-site, and map review of all pipelines into the larger commercial facilities, verify location and condition of all water meters, and confirm that all lines have meters. Verify that metered volumes are recorded in the correct units. Review meter testing and maintenance documentation for meters 3-inches and greater; investigate meter types and configurations, and refurbish meters if they have not been checked or refurbished in some time.	The system has 661 customer service connections that are all metered. All meters 3" and larger are tested annually. Going forward, the city intends to work with the water system maintenance provider (City of Albany) to implement a program to test 20 percent of its meters smaller than 3" each year, in addition to continuing to test larger meters annually. The city tests its source meter (the City of Millersburg master meter) annually and repairs or replaces, as needed.	All new customer services are metered. Large meters over 3" are tested and repaired or replaced as needed. Meters smaller than 3" are not tested unless requested or an issue becomes apparent due to unexpected bimonthly readings. The master meter is tested annually. The location of all meters was confirmed during the implementation of the new Utility Billing system. The city also confirmed that all existing services are metered.

Item	2012 WMCP Benchmark	2017 Progress Report Status	2022 Status
4. Water Rates	The city bills customers based on the amount of water metered at the service connections. The city rate structure is a declining block structure. Flat or inclining block structures help foster conservation efforts. Review water rates and rate structure by 2013.	The city is currently beginning the process of updating its rate structure. It is anticipated that a new water rate structure will be in place by the end of 2018. As a part of the update, a tiered rate structure that provides a cost-incentive to conserve water by high volume residential users will be considered.	The current rate structure was implemented in April, 2021. The new rate structure is a flat block structure, replacing the previous declining block structure. Water rate increases of 3% annually have been adopted by resolution for the next 5 years.
5. Leak Detection Program	Contract with City of Albany to perform a leak detection survey of asbestos cement and steel pipeline within the city by 2012	The city has not yet implemented a systematic leak detection program. The City of Millersburg is currently working with the City of Albany to utilize their leak detection equipment to begin a system-wide program, to be implemented beginning in 2018. In 2017, a potential leak was investigated in the area of Steelhead Run and Old Salem Road. Leak detection equipment was employed at two different times and no leak was found.	The city performed leak detection at locations where complaints have identified potential issues. Leak detection has not located any mainline leaks. The city has high ground water that can trigger complaints not related to distribution system leaks.
6. Public Education	By 2015, the city will add water conservation information to billing statements. Other measures that the city may consider in the future include billing customers in more readily understandable units of gallons instead of 100 cubic feet, and providing an 18-month running record of water sales on billing statements, so that customers are able to compare water use year to year	The city recently developed a website and now has the ability to utilize it to convey helpful tips and information about ways to conserve water. Information about water conservation may also be made available at City Hall. These changes will be implemented in the next two years.	The city website has been upgraded to be able to contain and convey more information. A Water specific page has been created and is being developed to include water conservation tips and tricks for consumers. Water conservation information has been available at City Hall seasonally. Utility bills show history of water usage so customers are able to compare water use year to year.
Item	2012 WMCP Benchmark	2017 Progress Report Status	2022 Status

<p>7. Leak Repairs & Line Replacement</p>	<p>A leak detection survey of the entire distribution system will be completed by 2012</p>	<p>The city budgets \$120,000 annually for water system operation and maintenance. In 2017 the city investigated a potential leak in the area of Steelhead Run and Old Salem Road. Leak detection equipment was employed at two different times and no leak was found, therefore no repairs were conducted. In 2017, the city abandoned approximately 1,100 feet of 8" asbestos cement water main piping. Although there were no known leaks in this area, asbestos cement pipe is a known potential source of leaks or ruptures and eliminating this piping reduces potential leakage in the system.</p>	<p>The city performed leak detection at locations where complaints have identified potential issues. Leak detection has not located any mainline leaks. The city has high ground water that can trigger complaints not related to distribution system leaks.</p> <p>Several customer side leaks have been identified and repaired. The leaks were primarily in irrigation systems.</p>
<p>8. Technical & Financial Assistance</p>	<p>N/A</p>	<p>Millersburg continues to work with its industrial customers to increase awareness of water usage and implement conservation strategies for new industrial development.</p> <p>In 2016, Auraco's Flakeboard facility implemented a process wastewater recycling program with the intent of reducing its water usage and wastewater discharge. At the end of 2017, water usage will be evaluated to determine how much reduction in peak demand has been achieved.</p>	<p>The city has worked with industrial customers upon request. City staffing changes in 2017/2018 prevented the planned evaluation of Auraco's project.</p>
<p>9. Retrofit/Replacement of Inefficient Fixtures</p>	<p>N/A</p>	<p>Due to the city's history and growth patterns, the majority of the homes in Millersburg have been constructed since 1994 under the minimum efficiency standards set by the U.S. Energy Policy Act of 1992. Going forward, the city may consider offering a fixture replacement program for older homes as a part of its public outreach and education program.</p>	<p>Due to the city's history and growth patterns, the majority of the homes in Millersburg have been constructed since 1994 under the minimum efficiency standards set by the U.S. Energy Policy Act of 1992.</p>

Item	2012 WMCP Benchmark	2017 Progress Report Status	2022 Status
<p>10. Conservation Based Rate Structure</p>	<p>N/A</p>	<p>As indicated in Item #4 above, the city is in the process of updating its water rate structure. A tiered rate structure that provides a cost-incentive to conserve water by high volume residential users will be considered.</p>	<p>As indicated in item #4 above, the city has updated its water rate structure from a declining block system to a flat block structure.</p>
<p>11. Water Reuse</p>	<p>N/A</p>	<p>The city has considered the possibility of water reuse for industries or larger irrigation users located in Millersburg. Due to the location of the wastewater treatment facility and challenges involved in conveying reuse water to the customers, this has not been further pursued. The City will continue to evaluate the feasibility of reuse and to discuss with the City of Albany as development continues.</p>	<p>The city has considered the possibility of water reuse for industries or larger irrigation users located in Millersburg. Due to the location of the wastewater treatment facility and challenges involved in conveying reuse water to the customers, this has not been pursued further. The City will continue to evaluate the feasibility of reuse and to discuss reuse opportunities with the City of Albany as development continues.</p>
<p>12. Other Measure(s) to Improve Water Use Efficiency</p>	<p>N/A</p>	<p>The city regularly maintains and repairs the park irrigation system to ensure uniform distribution and address any unnecessary water loss as soon as possible. In the future, the city will consider connecting park irrigation systems to weather stations so that irrigation controllers make climate-based adjustments using evapotranspiration (ET) calculations.</p>	<p>The park irrigation system continues to be monitored and repaired as necessary. A weather station connection for the irrigation controller at park was evaluated and deemed minimally beneficial since the park is seasonally irrigated and because staff are on site daily. The irrigation system at City Hall was audited by an irrigation professional. The sprinklers were updated to more efficient products and adjusted for efficient distribution of water.</p>

3.3 Use and Reporting Program

690-086-0150(2)

The City of Millersburg has a water use measurement and reporting program that complies with the measurement standards in OAR Chapter 690, division 85. The City of Albany reports Millersburg's share of raw water based on Millersburg's percent of flow measured at the master meter. The City's water use records can be found on the OWRD website.³

3.4 Required Conservation Programs

690-086-0150(4)

OAR 690-86 requires all water suppliers to implement the basic conservation measures outlined in the following section. Suppliers must also describe a schedule for implementation of the measures including 5-year benchmarks.

3.4.1 Five-Year Benchmarks for Required Existing or Expanded Conservation Measures

A) Annual water audit. Continue to improve annual water audit data collection and management, track water usage in coordination with the bi-monthly utility billing frequency. Include estimates of authorized but unbilled water consumption to improve revenue recovery.

B) System-wide metering. All of the customers served by the City of Millersburg are metered. Continue to require meters for all development within the city.

C) Meter testing and maintenance. Continue testing meters 3" and larger, and master meter annually. The city is investigating the costs of testing meters smaller than 3" and determining the appropriate level of annual testing.

D) Unit-based billing program. The current flat block rate structure will be evaluated continually for revenue generated vs. system operating costs. Rate adjustments beyond the 5-year horizon will be planned and adopted by resolution before 2026, if required.

E) Leak detection and repair. The retroactive annual water audits from 2016-2020 indicate that system leakage exceeds 10 percent. As such, within two years of the approval of this plan, the city will provide a description and analysis identifying potential factors for the loss and selected action for remedy.

If the five year progress report for this WMCP does not show that water losses were reduced below 10 percent, the city will develop and implement a regularly scheduled and systematic approach to detect and repair leaks in the transmission and distribution system or a line replacement program detailing the size

³ https://apps.wrd.state.or.us/apps/wr/wateruse_query/

and length of pipe to be replaced each year. Alternatively, the city could develop a water loss control system consistent with American Water Works Associations Standards.

F) Public Education. Implement water conservation website content for consumers, including a section on the city's water conservation activities and schedule. Develop a water conservation flyer to be available at City Hall including conservation and low water landscaping information, methods, and resources, such as the Oregon Energy Trust.

G) Other Measure(s) to Improve Water Use and Efficiency. Evaluate the city park irrigation system for appropriate sprinkler usage and efficiency.

3.5 Expanded Use under Extended Permits

690-086-0150(5)

The city is not proposing to expand or initiate diversion of water under an extended permit, therefore it has not established 5-year benchmarks for enhanced conservation measures at this time.

Section 4: Curtailment Plan

OAR 690-086-0160

4.1 Introduction

Curtailment planning is the development of proactive measures to reduce demand during supply shortages because of prolonged drought, or system failure from unanticipated catastrophic events (e.g. flooding, landslides, equipment failure, or contamination).

The goal of this curtailment plan is to have objective criteria that trigger specific actions that will ensure sufficient water to meet the water demands of the water supply system, without jeopardizing the health, safety, or welfare of the community.

Millersburg shares production facilities with Albany. Therefore, the curtailment plans of the two communities must be coordinated.

Because such a large percentage of water use in the city is by industrial customers, a critical component of the curtailment plan will be to communicate with and understand the curtailment measures that can be implemented by Millersburg's industrial customers. Depending on the customer's use and alternative sources of water, some industries may have flexibility in curtailing city-supplied use.

4.2 History of Curtailment Episodes

690-086-0160(1)

The city has not suffered a disrupted or shortage of supply within the last ten years.

4.3 Curtailment Plan Implementation and Enforcement

690-086-0160(2), (3), and (4)

The City of Millersburg’s Curtailment Plan, presented here, has four stages increasing in severity:

- Stage 1 – Water Shortage Alert
- Stage 2 – Water Supply Shortage
- Stage 3 – Severe Water Supply Shortage
- Stage 4 – Emergency Water Shortage

The curtailment stages will be triggered by the criteria presented in **Exhibit 4.1**.

Exhibit 4.1 City of Millersburg Curtailment Stages

Stage	Initiating Conditions	Actions
1. Water Alert	General recognition of drought conditions in Western Oregon, or Demand reaches 80 percent of the Albany and Millersburg supply capacity ^a for 3 or more consecutive days, or Water storage is approaching the minimum required for fire protection or other essential needs as determined by the city administrator.	Voluntary water use reductions
2. Water Supply Shortage	Demand reaches 90 percent of the supply capacity for 3 or more consecutive days.	Voluntary water use reductions
3. Severe Water Supply Shortage	Demand is 95% of Albany and Millersburg supply capacity for 3 or more consecutive days.	Compulsory restrictions on water use at the discretion of the City Manager or designee.
4. Critical Water Supply Shortage	Demand is 100% or more of Albany and Millersburg supply capacity or there is a critical supply shortage that threatens the ability of the city to deliver to customers and / or the ability to meet established fire flow demands.	Increased compulsory restrictions on water use at the discretion of the City Manager or designee.
5. Emergency Water Shortage	System failure, main break, treatment plant interruption	Immediate notification of customers for contamination; Implementation of Stage 3 or Stage 4 measures if emergency will result in a supply shortage.

a. Supply capacity is defined as the smallest of the AM-WTP production capacity, available river flow, raw water pumping capacity or transmission line capacity.

4.3.1 Stage 1: Water Alert

Stage 1: Water Alert Status will activate a program to inform customers of the potential for drought and water shortages, and reasons to voluntarily conserve water. Stage 1 will be activated by decision of the City Manager, or their designee, in cooperation with the City of Albany and will be triggered when either of the following conditions exist:

1. General recognition of drought conditions in Linn County.
2. Demand reaches 80 percent of water supply capacity as determined by the City Manager or designee, in consultation with the City of Albany, for a period of 3 or more consecutive days.

Under Stage 1, the City of Millersburg will issue a notice, on utility bills or utility bill inserts and on the city's website, requesting voluntary reduction in water use by all or some customers. The notice will include a description of the current water situation, the reason for the requested conservation measures, and a warning that mandatory restrictions will be implemented if voluntary measures are not sufficient to achieve water use reduction goals. A similar notice could be issued through local media (newspaper, radio, or TV). However, if the drought is regional, the media may already be alerting users of water shortage concerns. Therefore, the city's Stage 1 plan does not automatically involve press releases or paid media announcements.

The city also will contact the largest commercial and industrial customers by phone to inform them of the potential for summer water shortages or temporary interruptions to normal service and to solicit their help in voluntarily reducing demand. Contact information for each of the largest water users is contained in Appendix C.

If the city issues public announcements, they will ask customers to voluntarily comply with the following:

- Minimize landscape watering between 10:00 am and 6:00 pm, the period of highest water loss due to evaporation.
- Water landscapes on alternate days (even numbered addresses water on even numbered days and odd numbered addresses on odd numbered days).

4.3.2 Stage 2: Water Supply Shortage

Stage 2 will be initiated by the City Manager or designee in coordination with the City of Albany when demand on the water system reaches 90 percent of the supply capacity for 3 days or more. Under Stage 2, the City Manager or designee has the authority to activate some or all of the measures listed below until the capacity to deliver adequate supplies of water is restored. The city does not currently assess penalties for non-compliance with this or subsequent curtailment stages, but reserves the right to add fees for excessive water use during curtailment stages.

Under Stage 2, city customers will be asked to voluntarily implement the curtailment measures listed below to reduce all non-essential uses of water.

1. Water landscapes only when allowed by the odd/even schedule.

2. No watering or irrigating of lawns, grass, or turf unless it is:
 - a. New lawn, grass, or turf that has been seeded or planted after March 1st of the current calendar year;
 - b. Athletic fields frequently and currently used for organized play
 - c. Golf course tees and greens; and
 - d. Park and recreation areas of a particular significance and value as approved by the City Manager or designee.
3. City-supplied water shall not be used to clean, fill, or maintain levels in decorative fountains in commercial or institutional settings, except fountains that recycle their water.
4. City-supplied water shall not be used to wash sidewalks, walkways, streets, driveways, parking lots, or other hard-surfaced areas except where necessary for public health or safety.
5. City-supplied water shall not be used to wash vehicles, except for commercial carwash facilities that are using water-recycling equipment.
6. For City parks supplied by City water, the City shall limit non-essential water use and/or irrigate only during off-peak hours as specified by the City Manager or designee.
7. Hydrant and water main flushing shall be done for emergencies only.

4.3.3 Stage 3: Severe Water Supply Shortage

Stage 3 will be initiated by the City Manager or designee in coordination with the City of Albany when demand on the water system is 95 percent or more of available supply capacity for 3 days or more. Under Stage 3, the City Manager or designee has the authority to make any of the voluntary curtailment measures under Stage 2 mandatory. In addition, the City Manager or designee will work with local businesses to limit water use to essential uses only. In the event that a problem affects only a small portion of the water system, the City will distribute information to affected customers.

4.3.4 Stage 4: Critical Water Supply Shortage

Stage 4 will be initiated by the City Manager or designee in coordination with the City of Albany when demand on the water system has reached 100 percent of treatment capacity or there is a critical water supply shortage that threatens the ability of the City to deliver water to customers and/or the ability to meet established fire flow demands. Because a water shortage of this severity threatens the ability of the City to deliver essential water supplies to its customers, Stage 4 restrictions are mandatory. In the event that a problem affects only a small portion of the water system, the City will distribute information to affected customers.

Under Stage 4, the City Manager or designee has the authority to implement the curtailment measures listed below to minimize all non-essential uses of water.

1. All outdoor non-essential water use shall be prohibited except where necessary for public health and safety.

2. All large industrial and institutional accounts shall restrict water use to only fire protection and other critical functions as approved by the City Manager or designee.

During a catastrophic loss of supply or when a drought declared preference for human consumption is implemented in accordance with OAR [690-019-0070](#), uses other than for human consumption and emergency services will not be allowed.

The City Manager or designee will notify customers through media announcements or phone calls when the water shortage is over, or the stage is downgraded.

4.3.5 Stage 5: Emergency Water Shortage

Stage 5 will be initiated when failure of a system component or non-drought emergency conditions results in an immediate shortage of water. Examples include failure of the main transmission line from the AM-WTP to the city, failure of the intake or water treatment plant, a chemical spill on the South Santiam River upstream of the intake, or a malevolent attack on the system that introduces a contaminant at some point in the system.

If the emergency only affects the A-M WTP infrastructure, the city may be able to obtain water through its emergency intertie with the City of Albany as described in the Intergovernmental Agreement between the cities contained in **Appendix B: Albany – Millersburg Intergovernmental Agreements**, because the City of Albany has a second water supply.

If the emergency causes or is expected to cause a shortage of water for a period of time, the city will implement the curtailment measures of Stage 3 or Stage 4, as appropriate.

If water in the system is unsafe to drink (as caused by a chemical spill or malevolent attack) the City Manager or designee will direct staff to notify customers as quickly as possible. In addition, the City Manager or designee will implement the following:

1. Contact the Oregon Drinking Water Program, Department of Human Services and request their assistance in responding to the problem.
2. Notify the local news media, if appropriate, to ask for their assistance in notifying customers.
3. Call an emergency city council meeting
4. Contact the Oregon State Police and Linn County Sheriff to obtain help in contacting customers.

The city will continue to investigate and develop specific back-up plans for a Stage 5 emergency. These plans may include renting a water hauling truck and purchasing water from neighboring communities, sending customers to a pre-designated water distribution location, and supplying bottled water.

4.3.6 Penalties

In the event that a citation is issued during the period of activated emergency measures for a violation of this section, and the City Manager or designee determines that a second violation has occurred after the date of the citation and during the same emergency curtailment period, the City Manager or designee may:

- (a) Install a flow restrictor on the street side of the water meter; or
- (b) Terminate water service

Section 5: Water Supply

OAR 690-086-0170

5.1 Delineation of Service Areas

690-086-0170(1)

The City of Millersburg current service area is defined by the existing city limits as shown in **Exhibit 2.1**. This service area is not expected to change within the 20-year planning horizon. The City of Millersburg's intergovernmental agreement with the City of Albany establishes a second service area for the purposes of the Joint Water System. The Joint Water System service area includes the City of Millersburg and the limit of the City of Albany's urban growth boundary. The IGA establishes that water rights held by both cities can be used to serve this combined service area. The City of Albany provided demand projections for the City of Albany UGB in its own 2017 *Water Management and Conservation Plan*. This plan will primarily focus on the City of Millersburg.

5.2 Population and Demand Projections

690-086-0170(1) and (3)

Population and demand projections are based on information available from the Portland State University Population Research Center (PRC) and demand calculations from 2016-2020. Because industrial demands are subject to unpredictable increases or declines, Millersburg's demands are particularly hard to project.

5.2.1 Population Projections

Over the past decade, Millersburg has experienced rapid population growth. The population average annual growth rate from 2010 to 2020 was 7.5 percent with a total population increase from 1,340 to 2,850. This rapid population growth is predicted to slow over the next twenty years. The PSU PRC forecasts the 2020-2045 average annual growth rate at 2.5 percent. **Exhibit 5.1**. City of Millersburg Population and Service Area Population Projections presents the projected city population and service population through 2041. It was assumed that the number of people using wells will remain constant over the 20-year planning period. The projected population in 2031 3,842 is and in 2041 it is 4,951.

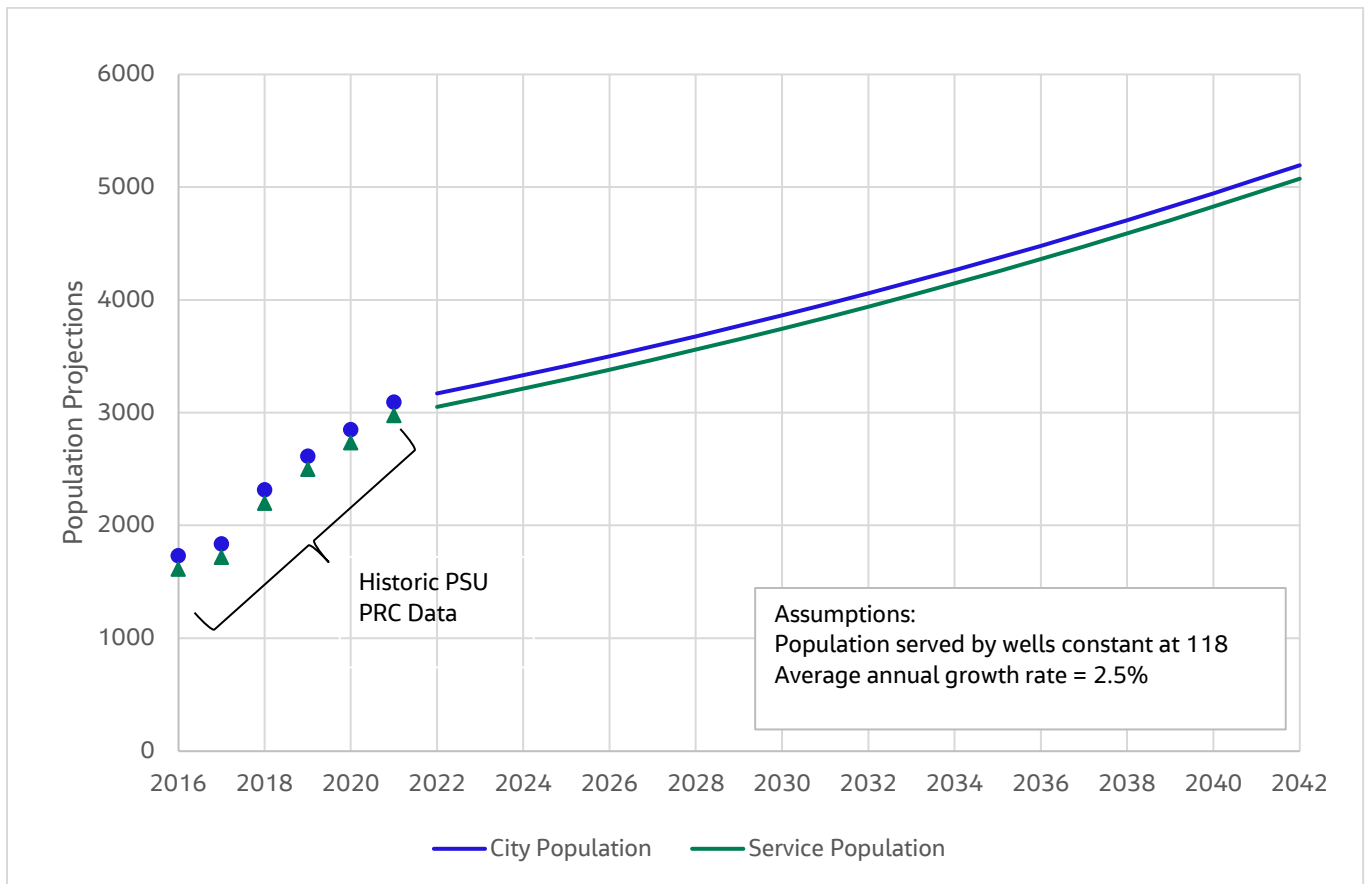


Exhibit 5.1. City of Millersburg Population and Service Area Population Projections

5.2.2 Demand Projections

The city's 2017 *Water System Master Plan* provided projections for future water supply needs. The city's demands were projected into the future by applying current demands per developed area to available residential lands. They assumed that all residential lands would be developed by 2037. No new industrial demands were projected. Using this method, the 2037 ADD was projected to be 1.22 mgd and the MDD was 2.12 mgd.

New demand projections were calculated for this WMCP using up to date PSU PRC population projections and demand values from 2016–2020.

5.2.2.1 Residential Demand

Exhibit 5.2 Summary of Residential Demand Projections presents residential demand for the planning period using projected service area population and the following annual per capita demand:

- Average day per capita residential demand = 111 gpcd

The average day per capita residential demand is the average value from 2016-2020. Maximum day demands were calculated by multiplying the ADD values by a typical peaking factor of 2.5.

Exhibit 5.2 Summary of Residential Demand Projections

Date	Service Population	Residential ADD (mgd)	Residential MDD (mgd)
2021	2,975	0.33	0.83
2031	3,841	0.43	1.07
2041	4,950	0.55	1.37

At the end of the 20-year planning period, residential ADD is expected to reach 0.55 mgd (0.85 cfs) and the MDD is predicted to reach 1.37 mgd (2.12 cfs).

5.2.2.2 Commercial / Industrial Demand

Industrial demand is difficult to predict as the addition or loss of one large industrial customer can have a significant impact on overall demand. For demand projections, the ADD for the Top 3 industrial users was held constant at 2020 levels. The demand for the remaining commercial and industrial users was projected at a steady 0.02 mgd / year increase from 2020 levels. This increase accounts for the addition of new businesses (several small accounts or a large industrial account) and for the growth of existing businesses. MDD was calculated using the overall 2016-2020 peaking factor of 1.7.

Exhibit 5.3 provides a summary of commercial and industrial demand projections and overall system demand projections for the 20-year planning period.

Exhibit 5.3 Summary of Residential, Commercial and Industrial, and Overall System Demand Projections

Year	Residential ADD (mgd)	Residential MDD (mgd)	Commercial / Industrial ADD (mgd)	Commercial / Industrial MDD (mgd)	Overall ADD (mgd)	Overall MDD (mgd)
2021	0.33	0.83	0.53	0.89	0.86	1.71
2031	0.43	1.07	0.63	1.05	1.06	2.12
2041	0.55	1.37	0.73	1.22	1.28	2.59

At the end of the 20-year planning period, overall system ADD is projected to reach 1.28 mgd (1.98 cfs), and the overall system MDD is project to approach 2.59 mgd (4.01 cfs).

Exhibit 5.5 City of Millersburg Maximum Day Demand Projections for the 20-year Planning Period graphically presents residential, commercial / industrial, and overall average day demand projections through 2041. Commercial and industrial demand is projected to remain dominant in the system throughout the planning period.

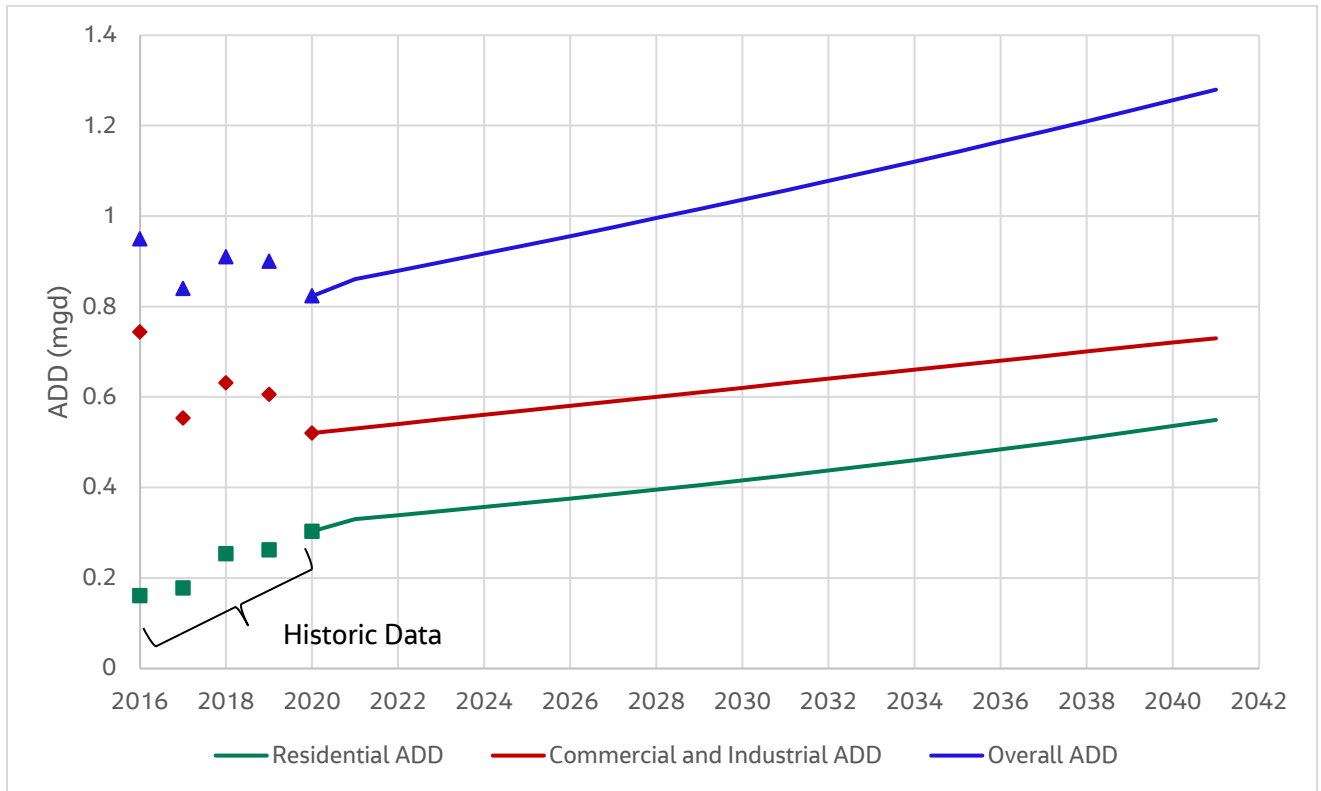


Exhibit 5.4 City of Millersburg Average Day Demand Projections for the 20-year Planning Period

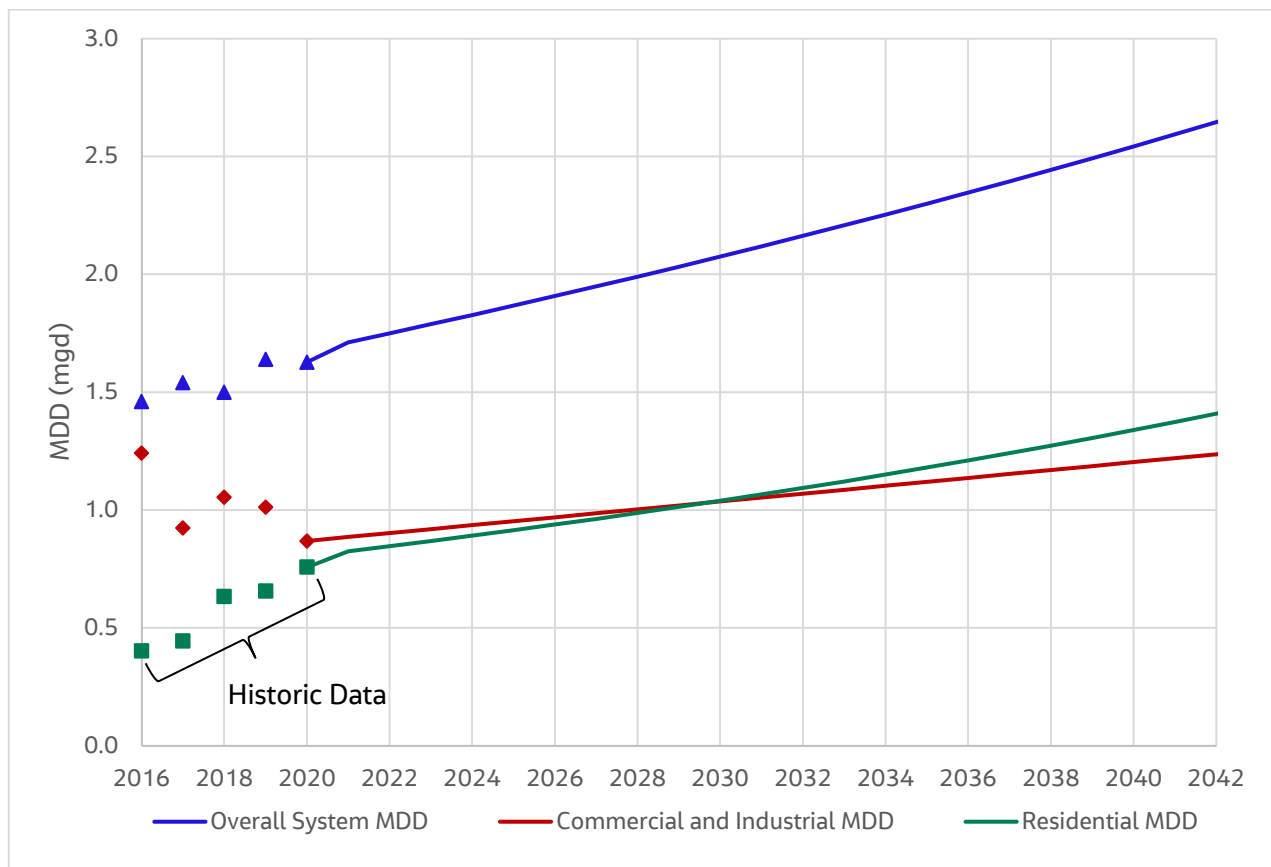


Exhibit 5.5 City of Millersburg Maximum Day Demand Projections for the 20-year Planning Period

Exhibit 5.5 City of Millersburg Maximum Day Demand Projections for the 20-year Planning Period graphically presents residential, commercial / industrial, and overall maximum day demand projections through 2041. These demand projections indicate that residential MDD may outpace industrial MDD in the next ten years.

Because of the very large component of industrial demand within the city, actual demand may vary significantly. To illustrate variability in demand from commercial and industrial use, **Exhibit 5.6 Projected Overall System Maximum Day Demand ± 20 Percent** shows projected demands within a ± 20 percent level of uncertainty. Actual variation could be much greater. Considering this uncertainty, maximum day demand could range from 2.07 to 3.11 mgd by 2041.

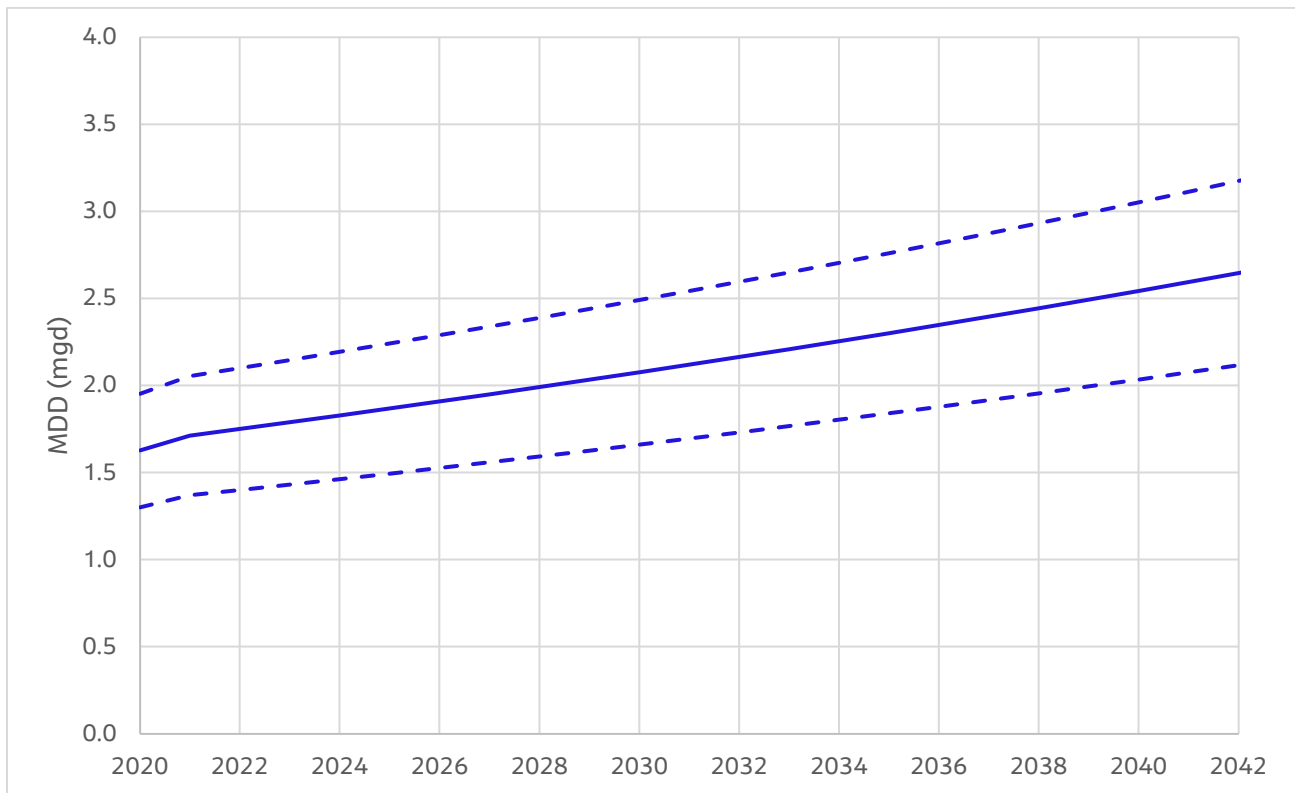


Exhibit 5.6 Projected Overall System Maximum Day Demand ± 20 Percent

5.3 Schedule to Exercise Permits and Comparison of Projected Need to Available Sources

690-086-0170(2) and (4)

The city holds permits that allow a combined total withdrawal of 22.0 cfs (14.2 mgd) from the South Santiam River (S-52886) and the Willamette River (S-52885). Both water rights have received an extension of time to complete construction and fully apply water to beneficial use until October 1, 2049.

A condition of the May 23, 2008, Final Order approving the extension of time to develop the Willamette River source under Permit S-52885 was that diversion of water shall only be authorized upon issuance of a final order approving a Water Management and Conservation Plan under OAR chapter 690, Division 8. In its 2012 WMCP the city requested access to 0.77 cfs of water from its Willamette River source. This request was approved. The city is not requesting access to more water under either permit at this time.

5.4 New Water Rights

690-086-0170(8)

The city does not anticipate needing new water rights to meet the 20-year demands described above.

Appendix A: Letter to and Letters from Affected Local Governments

Appendix B: Albany – Millersburg Intergovernmental Agreements

ALBANY AND MILLERSBURG INTERGOVERNMENTAL AGREEMENT FOR JOINTLY-OWNED WATER FACILITIES

THIS AGREEMENT is made and entered into this 16 day of MAY 2016 by and between the City of Albany, a municipal corporation of the State of Oregon (Albany) and the City of Millersburg, a municipal corporation of the State of Oregon (Millersburg). The respective Council or designated representative of each City is referred to as "party" or "parties" in this Agreement. This Agreement defines the operation, maintenance, and cost sharing of the jointly-owned Water Facilities.

WITNESSETH:

WHEREAS, Albany and Millersburg jointly-own water facilities, including the raw water intake, pump station and pressure main, the Albany-Millersburg Water Treatment Plant (A-M Plant), the finished water reservoir, and the finished water pipeline up to but not including the Millersburg water meter. These jointly-owned water facilities are shown in Exhibit A and collectively referred to in this document as the A-M Water Facilities; and

WHEREAS, Albany employs the operator designated as the "Direct Responsible Charge" (DRC), in conformance with OAR 333-061-0225, to supervise the A-M Water Facilities up to the point of delivery to the Millersburg public water system; and

WHEREAS, Millersburg's public water system begins downstream of a 12-inch water meter near the intersection of Century Drive NE and Berry Drive NE that Albany owns, installed, and maintains; and

WHEREAS, Albany and Millersburg's combined water rights and permits equal their projected combined maximum day demands at build-out and the communities' net water requirement at build-out from the A-M Water Facilities is 26 million gallons per day (mgd); and

WHEREAS, in an emergency or during water curtailment, when the A-M Water Facilities are not fully functional, the Vine Street Water Treatment Plant (Vine WTP) can deliver potable water to Millersburg's public distribution system through the emergency intertie located at 3246 Salem Avenue NE and shown in Exhibit B.

NOW, THEREFORE, BE IT RESOLVED that the "Intergovernmental Agreement" to operate and maintain the A-M Water Facilities that was executed on July 25, 2002, between Albany and Millersburg is hereby repealed; and

BE IT FURTHER RESOLVED by Albany and Millersburg that the parties agree to cooperate in the operation, maintenance, and cost sharing of the production and delivery of potable water to both communities as follows:

1. **Current Rights and Buildout Demands.** Albany and Millersburg's combined water rights and water use permits are equal to their projected combined maximum day demand at build-out as shown in Table 1.

TABLE 1: WATER RIGHTS AND DEMANDS

	cfs	mgd
Albany 1878 Water Right	21	
Albany 1979 Water Use Permit	29	
Millersburg 1989 Water Use Permit	22	
TOTAL	72	46
Albany MDD at Build-out		40
Millersburg MDD at Build-out		6
TOTAL	72	46

2. **Treatment Plant Capacities.** The A-M Plant and Vine WTP are assumed to meet Albany and Millersburg's combined maximum day demand at build-out as shown in Table 2:

TABLE 2: TREATMENT PLANT CAPACITIES (mgd)

	Current	Build-out
Vine Street Water Treatment Plant	16	20
A-M Water Treatment Plant	12	26
TOTAL	28	46

3. **A-M Water Facility Current Capacity and Ownership.** The current capacity and ownership share of the jointly owned A-M Water Facilities are shown in Table 3:

TABLE 3: CURRENT CAPACITY AND OWNERSHIP SHARE OF A-M WATER FACILITIES

Facility	Units	Current Capacity	Ownership Share	
			Albany	Millersburg
Raw Water Intake & Pipeline	mgd	26	20	6
Raw Water Pump Station	mgd	12	10	2
Raw Water Pressure Main	mgd	26	20	6
Water Treatment Plant	mgd	12	10	2
Reservoir	mg	5.7	2.85	2.85
Finished Water Pipeline	mgd	26	20	6

4. **Water Rights Utilization.**

- (a) Existing water rights and water use permits shall remain in the name of the party that obtained them.
 - (b) During times when there are no restrictions on surface water withdrawals at the affected diversion points, the parties agree that all existing water rights and water use permits shall be used to the benefit of both parties, without regard to ownership or current individual demands.
 - (c) During times when there are partial restrictions on surface water withdrawals and some junior rights become unavailable, then the available surface water rights shall be applied for use of both communities to the extent allowed by the restriction.
 - (d) During times when restrictions on surface water withdrawals are so severe even the most senior rights are affected, then allowed surface water withdrawals shall be applied first for use of the party that owns the surface water rights.
 - (i) Albany will utilize their 1878 water right at the A-M raw water intake to provide water during times of drought conditions for both communities, to the extent allowed by the Oregon Water Resources Department. Millersburg is entitled to access the portion of Albany's 1878 water right used at the A-M raw water intake, subject to the same user restrictions as apply to Albany.
 - (e) Both parties agree to utilize their water use permits to allow for full certification of the individual Albany and Millersburg water use permits considering senior rights first.
 - (f) The parties agree to coordinate water conservation and management plans and projected demands developed for their respective water supply systems.
 - (g) If additional water rights are required or desired in the future to meet projected long-term needs or provide reserves for present and future users, the additional water rights shall be sought jointly to the extent possible.
5. **Water Supply during Emergency.** In the event of an emergency that causes the A-M Water Facilities to not be operable for an extended period of time, Albany will supply Millersburg with treated water from the Vine WTP through the emergency intertie at 3246 Salem Avenue NE. The amount of water provided from

the Vine WTP is subject to the same user restrictions as applied to Albany in the event that the Vine WTP does not have sufficient capacity to meet the demands of both parties at the time of the emergency. The cost of water provided during an emergency is subject to the rates in Section 7 Budgets, Rates, and Expenditures.

6. **Water Supply during Curtailment.** In the event of a severe or critical water supply shortage in one or both communities, and at one or both of the Water Plants, water curtailment measures will be activated as required to respond to a specific event. Millersburg agrees that its Curtailment Plans shall be at least as restrictive as that adopted by Albany. Depending on the circumstances, curtailment measures may apply to both communities, one community, or smaller, more localized portions of the water system. The parties agree to implement Water Curtailment Plans and measures for their respective water supply systems in the event of a severe or critical water supply shortage.
7. **A-M Water Facility Capacity Management and Expansion.** The build-out capacity and ownership share of the jointly owned A-M Water Facilities are listed in Table 4. Both parties agree to manage the available capacity and provide additional capacity in an efficient and cost-effective manner. The facilities should be expanded before the parties are projected to use all existing capacity. In determining the appropriate time to begin expansion of the system, the time required for environmental reviews, designs, permits, and construction should be considered.

TABLE 4: BUILD-OUT CAPACITY AND OWNERSHIP SHARE OF A-M WATER FACILITIES

Facility	Units	Build-Out Capacity	Ownership Share	
			Albany	Millersburg
Raw Water Intake & Pipeline	mgd	26	20	6
Raw Water Pump Station	mgd	26	20	6
Raw Water Pressure Main	mgd	26	20	6
Water Treatment Plant	mgd	26	20	6
Reservoir	mg	11.4	5.8	5.6
Finished Water Pipeline	mgd	26	20	6

8. **A-M Water Facility Governance.** The Albany-Millersburg Joint Water/Wastewater Management Committee (herein after called Management Committee) was established in 2002 to oversee the A-M Water Facilities covered by this Agreement.
 - (a) Each party shall appoint (and fill any subsequent vacancies) three persons to the Management Committee who shall serve at the pleasure of their respective elected Councils. Either party may appoint alternate members who may temporarily replace an absent member.
 - (b) The Management Committee shall hold meetings annually or as needed.
 - (c) Four members shall constitute a quorum for the transaction of business. An affirmative vote of four members of the Management Committee, with at least two (2) from each party, shall be necessary to decide any matter.
 - (d) The Management Committee shall elect from its membership a Chairperson and a Vice-Chairperson. Such election or reaffirmation shall occur annually and the Chairperson and Vice-Chairperson shall not be from the same party.
9. **A-M Water Facilities Operating Entity.** The parties agree that Albany shall supervise all A-M Water Facilities up to the point of delivery to the Millersburg public water distribution system. As the Operating Entity, Albany will:
 - (a) Employ the operator designated as the “Direct Responsible Charge” (DRC) for the A-M Water Facilities.
 - (b) Perform the day-to-day operations and maintenance services for all A-M Water Facilities.

- (c) Provide general administration, accounting, budgeting, records management, reporting, and such other duties as required for operations.
- (d) Manage capital projects and approve contracts and change orders.
- (e) Have the authority to take reasonable and prudent action to protect the water system assets, prevent or minimize liability to the parties, comply with permits, and otherwise act in good faith for the benefit of both parties.
- (f) Take up such actions reasonably necessary during an emergency.

10. Budgets, Rates, and Expenditures. Each party shall budget and appropriate its proportionate share of the costs to operate and maintain the A-M Water Facilities and emergency water facilities.

- (b) **Total Fiscal Year A-M Water Facility Budget:** Albany will prepare and deliver to Millersburg a line item budget for A-M Water Facilities personnel, materials and services, and capital project expenditures in the spring of each year. If needed, a meeting shall be called to discuss budget details.
- (c) **Millersburg-Only Summary Budget:** To support Millersburg with their budgeting process, Albany will also prepare and deliver to Millersburg a summary exhibit of Millersburg's share of costs for the fiscal year. This summary will estimate operating costs based on Millersburg's average share of metered water use in the previous year and estimate capital costs based on Millersburg's ownership share of the budgeted expenses.
- (d) **Capital Maintenance Costs:** There are anticipated and unanticipated capital maintenance costs. Costs for anticipated capital maintenance are budgeted and costs are shared according to the ownership share of the facility being improved. As soon as unanticipated capital maintenance items are identified, the need, total cost, and cost share will be provided to Millersburg and, depending on the magnitude, may require a meeting of the Management Committee to discuss.
- (e) **Cost of Emergency Water:** The cost of emergency water includes the cost of readiness to provide service and the actual cost of providing emergency water.
 - (i) The additional cost incurred by Albany to provide a redundant water source at the Vine WTP and to maintain the emergency intertie valve at 3246 Salem Avenue NE ready to be opened during an emergency shall be reimbursed by Millersburg on a quarterly basis. This cost shall be the cost of maintaining the intertie on a time and material basis.
 - (ii) The cost of providing water to Millersburg through the emergency intertie shall be reimbursed by Millersburg on a quarterly basis when an emergency occurs within that quarter. The current rates at the time of the emergency will be applied to water use based on Millersburg's historic water use during the same time period. A surcharge of 10 percent (10%) will be applied to compensate for additional water system operational costs to boost production at the Vine WTP and to balance flows and pressures within the transmission and distribution pipe delivery system.
- (f) **Quarterly Billing:** Albany shall prepare a quarterly invoice for Millersburg that includes Millersburg's share of the cost to produce water at the A-M Plant and pay for capital expenditures. Payments are due within 30 business days of receipt. Late payments shall bear interest at nine (9) percent per annum.
 - (i) **Cost of Water:** Millersburg is charged for their prorated share of producing water at the A-M Plant. The cost per gallon of treated water is determined using the total water produced at the A-M Plant and the total production cost for the quarter. This unit cost is multiplied by the amount of potable water delivered to Millersburg's public distribution system from the A-M Plant by way of a 12-inch water meter near the intersection of Century Drive NE and Berry Drive NE during that quarter.

- (ii) **Capital Costs:** Millersburg is charged for their share of major A-M Plant expenditures based on their ownership share of the facility being improved. The actual ownership share for each facility is applied to the actual capital expenditure for the quarter.

11. Other Terms and Conditions. The following terms and conditions apply to this agreement:

- (a) **Term and Termination.** This agreement begins upon execution and will be in force for a 10-year period unless amended or terminated as provided herein. At the end of the 10-year period, this agreement automatically extends for succeeding 5-year terms subject to the terms herein.
 - (i) **Amendment.** This Agreement may be amended if each party concurs to the proposed amendment in writing, signed by authorized representatives of each party.
 - (ii) **Termination for Breach.** Failure to make a payment when due or other material breach of this Agreement shall allow the nondefaulting party the opportunity to terminate the agreement. In the event of an election to terminate, the nondefaulting party shall give notice and a 30-day period for the defaulting party to cure. If cure cannot be accomplished within 30 days but is diligently begun, the nondefaulting party may grant additional cure time.
 - (iii) **Separation of Assets.** Upon termination, the parties will develop a plan of separation to sell or buy the interests in the assets that include a reasonable schedule to obtain suitable alternate facilities. In the absence of such a plan, the parties shall use Dispute Resolution.
- (b) **Withdrawal and Termination of Membership Sale of Assets.** Any party may elect to terminate its participation in this agreement by giving written notice of its desire to terminate to the other party and stating a date for termination that shall not be less than two years from the date of notice. The nonterminating party shall have the option to purchase the terminating interest, and the parties shall meet for the purpose of establishing the price. The price will be established within 90 days following receipt of notice of termination. If the price cannot be agreed upon, the matter shall be submitted to Dispute Resolution as outlined in this agreement.
- (c) **Water Quality:** Albany agrees to provide potable water to Millersburg that meets water quality standards. In the event of a temporary non-compliance, Albany will comply with all regulatory direction to restore its system to compliance. Albany makes no representations concerning the suitability of Albany's potable water for the Millersburg system or any customer thereof.
- (d) **Indemnification:** Millersburg agrees to indemnify and hold Albany harmless from any governmental or third party claims resulting in any manner from the provision of water from the A-M or Vine WTPs to Millersburg customers consistent with the terms of this agreement. This indemnification clause does not preclude Millersburg from pursuing breach of contract claims against Albany concerning the provision of Albany water to Millersburg.
- (e) **Dispute Resolution.** If a dispute arises between the parties regarding breach of this Agreement or interpretation of any term of this Agreement, or in the event of a three-to-three voting impasse of the Management Committee, the parties shall first attempt to resolve the dispute by negotiation, followed by mediation. If mediation is unsuccessful, the dispute shall be resolved through binding arbitration that shall take place in Linn County, and the prevailing party shall be entitled to such reasonable attorney's fees and costs as may be awarded by the arbitrator. In the absence of an agreement between the parties, either party may apply to the presiding judge of the Linn County Circuit Court for the appointment of suitable mediator(s) or arbitrator(s), and the persons so appointed shall establish the rules of procedure.
- (f) **City Council Approval Required.** No committee or entity created by this Agreement may obligate either city to expend any city funds or take any actions, other than expressly provided herein, without the approval of the respective City Council.

- (g) **Severability.** In case any one or more of the provisions contained in this Agreement shall be invalid, illegal, or unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired thereby.
- (h) **Notices.** Any notice herein required or permitted to be given shall be given in writing, shall be effective when actually received, and may be given by hand delivery or by United States mail, first class postage prepaid, addressed to the parties as follows:

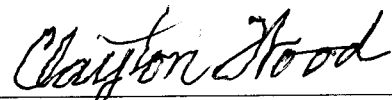
If to Albany: City Manager
 City of Albany
 P.O. Box 490
 Albany, OR 97321

If to Millersburg: City Administrator
 City of Millersburg
 4222 NE Old Salem Road
 Albany, OR 97321

IN WITNESS WHEREOF the parties have caused this document to be executed pursuant to the authority of the respective City Councils, by the Mayor of Albany, and the Mayor of Millersburg.

CITY OF MILLERSBURG:

DATED this 16 day of MAY 2016.



 Clayton Wood, Mayor

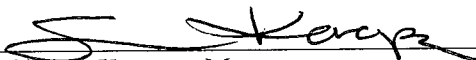
ATTEST:



 Barbara Castillo, City Administrator/Recorder

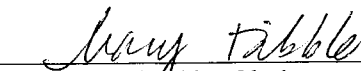
CITY OF ALBANY:

DATED this 11 day of May 2016.



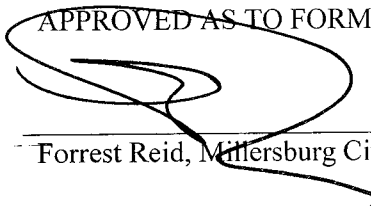
 Sharon Konopa, Mayor

ATTEST:



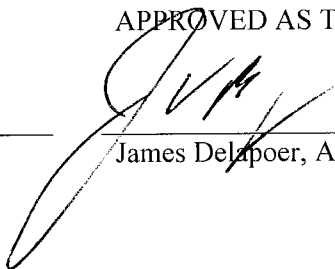
 Mary Dibble, City Clerk

APPROVED AS TO FORM:



 Forrest Reid, Millersburg City Attorney

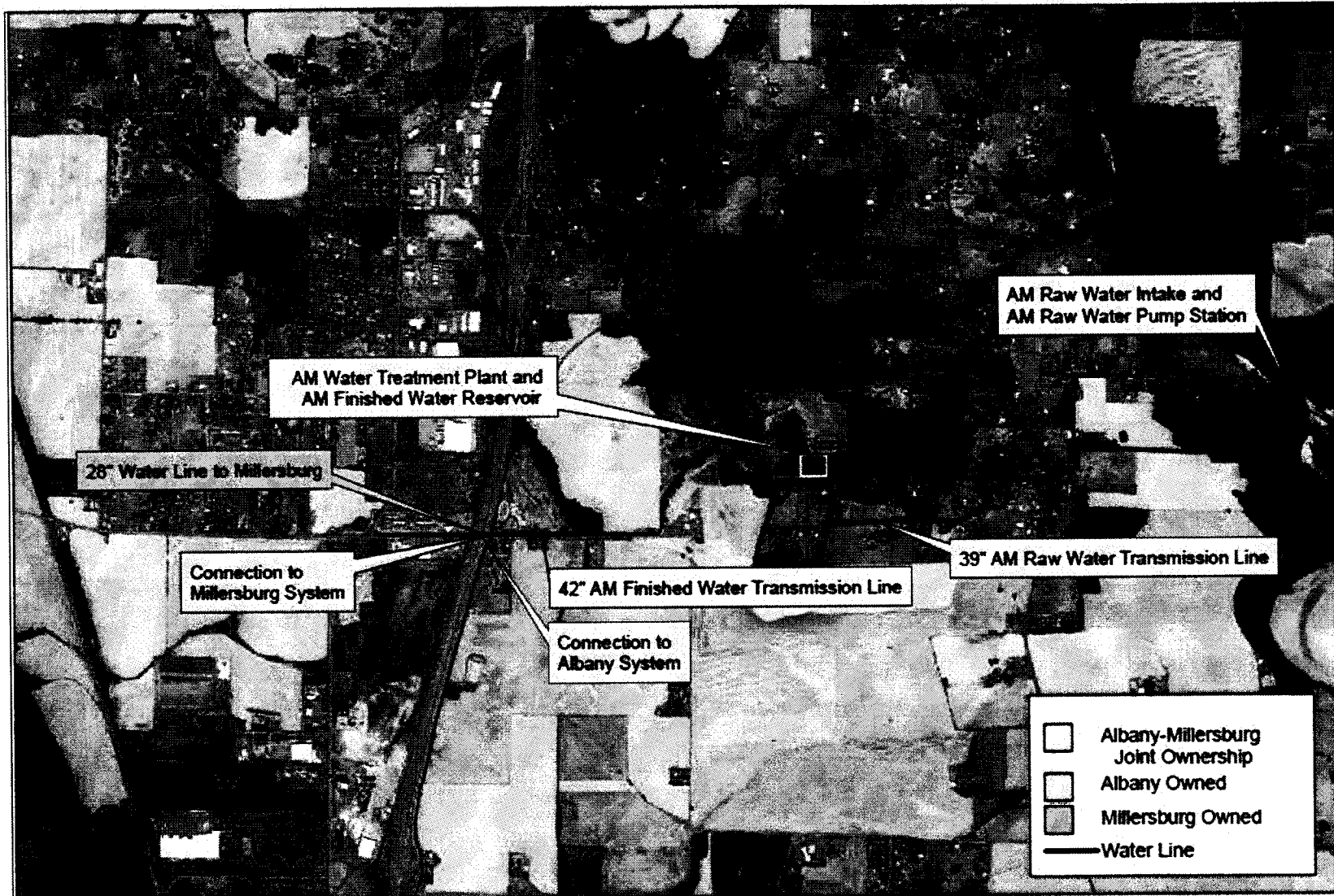
APPROVED AS TO FORM:



 James Delapoe, Albany City Attorney

EXHIBIT A

Albany-Millersburg Jointly Owned Water Facilities



Albany-Millersburg IGA-Water System Facilities


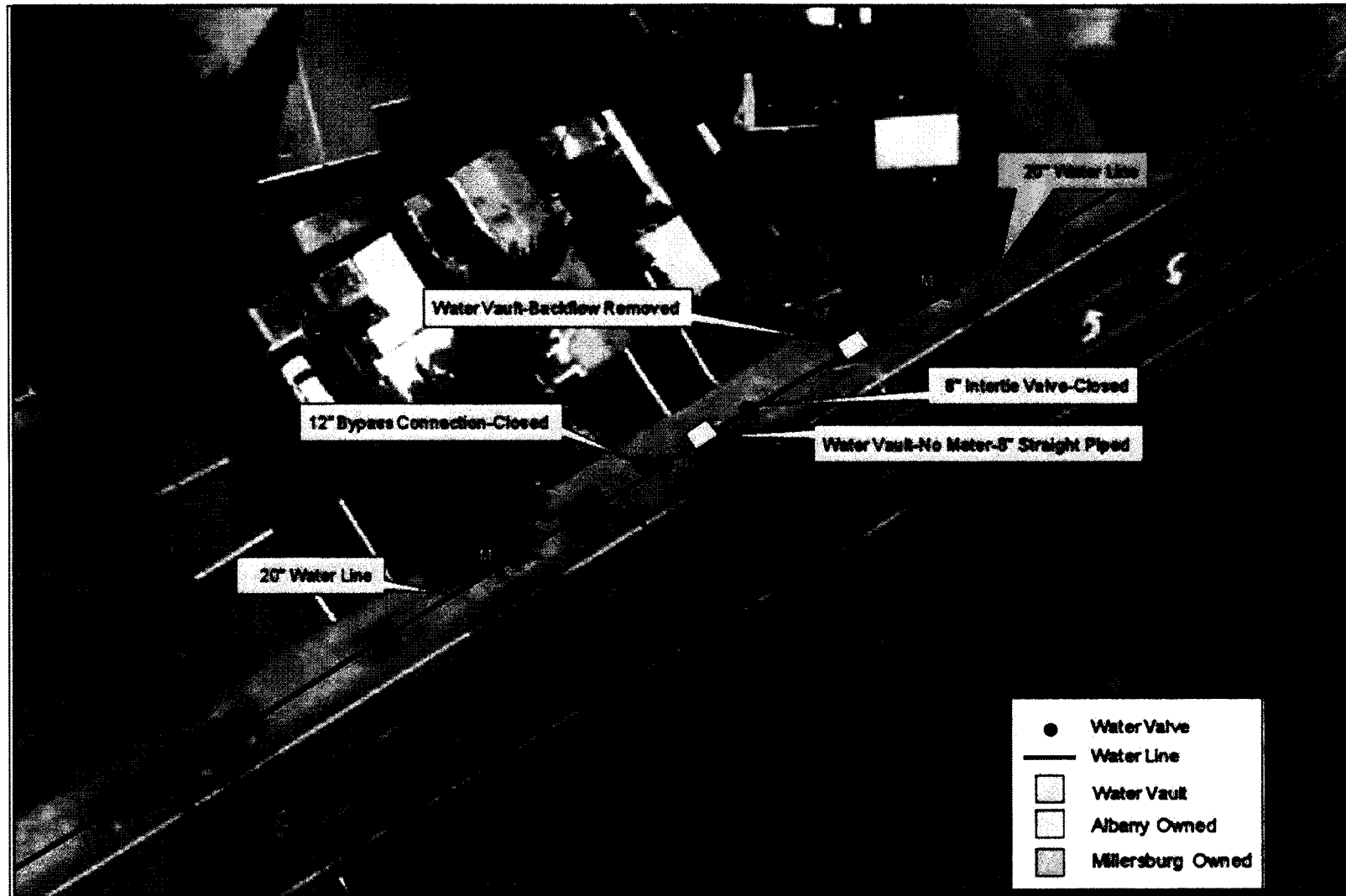
 <p>The City of Albany's official website, www.albanyoregon.gov, and other departments have been authorized to use this information, using Albany's logo for safety, quality, consistency, and coordination. No other information provided represents Albany's position or a liability on behalf of the City. While the information provided is generally intended to be accurate, it is not intended to constitute any other representation or warranty. It is specifically advised that you independently verify the information contained within the records.</p> <p>0 006 01</p>	<p>Document Path: L:\Lisa\Shared_Millersburg_2016.mxd</p> <p>City of Albany - 310 Waverly Dr NE, Albany, Oregon 97321 (541) 917-7600</p> <p>Date: 01/26/2016</p>
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EXHIBIT B

Albany-Millersburg Emergency Intertie Facilities



Albany-Millersburg IGA-8" Emergency Intertie

The City of Albany, Intertie, and other documents have been prepared under many changes, including standards for quality control, documentation and construction, and for information presented consistently to various public formats. While the information provided is generally believed to be accurate, occasionally the information may be in error, and the user is advised to verify the information provided. It is recommended that the user independently verify the information presented before use.

0 12.5 25 50 Feet

Document Path: L:\Use\Millersburg Intertie.mxd
 City of Albany - 310 Waverly Dr NE, Albany, Oregon 97321 (541) 917-7600
 Date: 02/05/2016

**ALBANY AND MILLERSBURG INTERGOVERNMENTAL AGREEMENT
WATER DISTRIBUTION SYSTEM MAINTENANCE SERVICES**

THIS AGREEMENT is made and entered into this 16 day of MAY 2016 by and between the City of Albany, a municipal corporation of the State of Oregon (Albany) and the City of Millersburg, a municipal corporation of the State of Oregon (Millersburg). The respective Council or designated representative of each City is referred to as “party” or “parties” in this Agreement. This Agreement defines the provisions for the City of Albany to provide maintenance services for the City of Millersburg’s public water distribution system.

WITNESSETH:

WHEREAS, Albany and Millersburg jointly own the Albany-Millersburg (A-M) Water Treatment Plant, the raw water intake, and finished water reservoir that are operated and maintained as defined in the A-M Intergovernmental Agreement for Jointly-Owned Water Facilities executed on _____ 2016; and

WHEREAS, potable water is delivered to Millersburg’s public distribution system by way of a 12-inch water meter near the intersection of Century Drive NE and Berry Drive NE, which Albany owns, installed, and maintains and in an emergency, through an emergency intertie located at 3246 Salem Avenue NE; and

WHEREAS, Albany is designated as the “Direct Responsible Charge” (DRC), in conformance with OAR 333-061-0225, for all facilities up to the point of delivery to the Millersburg public water distribution system as defined in the A-M Intergovernmental Agreement for Jointly Owned Water Facilities executed on _____ 2016; and

WHEREAS, Millersburg owns their own water distribution system; and

WHEREAS, Millersburg’s water distribution system is considered a public water system further defined as a purchasing water system in Oregon Administrative Rules (OARs) 333-061-0020 (153) & (154); and

WHEREAS, as a purchasing water system, Millersburg is required to implement OAR Chapter 333 Division 061 governing Public Water Systems to assure safe drinking water within their public water system; and

WHEREAS, Millersburg employs the operator designated as the DRC, in conformance with OAR 333-061-0025, to make decisions regarding the daily operational activities of the Millersburg water distribution system that directly impact the quality or quantity of drinking water; and

WHEREAS, Millersburg desires to contract with Albany for specific maintenance functions to be routinely performed for Millersburg on the water distribution system they own.

NOW, THEREFORE, BE IT RESOLVED that the previous agreement titled “Water Distribution System Maintenance Services Agreement” executed on October 24, 2005, between Albany and Millersburg is hereby repealed; and

BE IT FURTHER RESOLVED by Albany and Millersburg that the parties agree to cooperate in the operation, maintenance, and costs for Albany to provide maintenance services for Millersburg’s public water distribution system as follows:

COVENANTS OF ALBANY

A. Albany will perform the following basic water system operations and maintenance services subject to the CHARGES AND RATES section:

1. **Water Quality Testing:** Albany will perform Oregon Health Authority (OHA) required monthly coliform bacteria testing, quarterly testing for disinfection by-products (until reduction is granted by OHA), lead-copper testing every 6 months (until reduction is granted by OHA), asbestos every 9 years (if present in the distribution system), and free chlorine residual twice a week (unless Millersburg provides this service) and any other future water quality testing required by OHA. Samples will be collected according to standard testing procedures by Albany staff, or contractors, as may be determined by the City of Albany. Samples will be submitted to the laboratory under contract with the City of Albany. Water quality results will be reported directly to OHA by Albany’s contract laboratory.

2. System Maintenance – flushing, hydrants, and valves: All fire hydrants will be inspected and lubricated annually, the water distribution system will be flushed every three (3) years, and all valves will be exercised once every three (3) years. The frequency of system maintenance may change as mutually agreed by the Millersburg DRC and Albany Water Operations Supervisor or Water Superintendent.
 3. Annual Large Meter Testing: Three-inch and larger meters will be tested and repaired as needed annually or as mutually agreed.
 4. Cross Connection Control Program (Backflow Prevention): The established backflow program will be maintained to meet all requirements of the OHA Drinking Water Program. The program will:
 - a. Send out test notices, record test data, and provide field follow-up for customer relations and enforcement as needed,
 - b. Coordinate and facilitate testing of all devices using a certified tester, and
 - c. Annually submit a cross-connection report to OHA and Millersburg.
 5. System Locates (One-call System): Respond to requests for water line location markings based upon Albany GIS mapping of the Millersburg system and in compliance with OAR 952-001. Albany's ability to provide this service is dependent on timely receipt from Millersburg of accurate "as built" drawings of Millersburg facilities.
 6. Emergency Response: Respond to emergency calls from Millersburg or their customers for water system damage within two (2) hours of notification. During widespread emergencies, such as catastrophic earthquake, Albany will prioritize system needs across both systems and respond accordingly. "Damage" shall include but not be limited to damaged fire hydrants, mains, and water services up to the customer meter (not beyond) within the Millersburg water distribution system.
 7. Meter/Service Installation: As requested by Millersburg, installation of new customer meters and connection to the water main, including "bored" street crossings and abandonment of service lines will be performed consistent with installations used in the City of Albany system. Albany will supply all materials.
 8. Repair/Replacement: Repair or replacement of non-functioning fire hydrants, non-functioning water meters, or minor repairs to mains, services (up to the and including the meter), and valves as soon as possible but not to exceed 15 days following notification and authorization by Millersburg. Albany will supply all materials.
 9. Future System Improvements: Albany will perform activities necessary to support maintenance of existing and future Millersburg water distribution system improvements including:
 - a. Prior to Construction. During design, Albany Public Works Operations will review all proposed construction plans provided by Millersburg and will suggest modifications as necessary to minimize maintenance costs and response times and/or to optimize system performance.
 - b. Upon Completion of Project. Albany Public Works Operations will receive approved as-built record drawings and update Albany's computerized Geographic Information System (GIS) and the computerized maintenance management system (CMMS) used to perform maintenance and future repairs or locates.
- B. Albany will provide the following additional water system operations and maintenance services, included as part of general administration and overhead:
1. Data entry and maintenance of geographic locations of water system components including valves, distribution mains, transmission mains, water services up to and including the meter, and other components maintained within Albany's computerized Geographic Information System (GIS) and computerized maintenance management system (CMMS) systems using the best information available. Albany will provide data to Millersburg upon request.
 2. Preparing required annual Drinking Water Quality (Consumer Confidence) Report (CCR) documentation to meet legal requirements, production of results for the public, posting the CCR on the City of Albany's website (www.cityofalbany.net) and completing the CCR distribution form for Millersburg.

C. Albany SHALL NOT perform the following services for Millersburg water distribution system:

1. Plan, design, manage, construct, or perform construction inspection on any new distribution or transmission mains and appurtenances in Millersburg.
2. Ensure future system improvements meet public water system drinking water quality standards and other applicable regulatory requirements.
3. Guarantee the quantity, quality, or pressure available to any service connection, nor a determination of the impacts of new water project construction upon customers in Millersburg.
4. Maintain any reservoir or water pump station that may be constructed in Millersburg.
5. Ensure water quality samples submitted to the laboratory under contract with the City of Albany were reported to OHA on time.
6. Utility billing services including customer billing, cut in or turn off, collections, or any customer service related to billing.
7. Perform any other services or responsibilities not expressly delineated in this agreement.

COVENANTS OF MILLERSBURG

A. Millersburg will perform the following:

1. Millersburg shall employ the operator designated as the "Direct Responsible Charge" (DRC) in conformance with OAR 333-061-0225, to make decisions regarding the daily operational activities of the Millersburg water distribution system that directly impact the quality or quantity of drinking water.
 - a. Millersburg shall provide the name, telephone number, and address for their DRC to be on record with the Albany Public Works Operations office located at 310 Waverly Drive NE, Albany, OR 97321.
 - b. Millersburg will ensure that the DRC is available on call 24 hours every day by Albany staff and able to respond on-site to the water system upon request to make operational decisions for Millersburg (OAR 333-061-0230).
 - c. Millersburg will ensure that the DRC will take corrective action when the results of analyses or measurements indicate maximum contaminant levels have been exceeded (OAR 333-061-0230).
2. Millersburg will process requests for new connections to existing lines and collect any fees associated with the installation. Upon approval by Millersburg, installation orders will be forwarded to Albany by e-mail, fax, mail or other means for scheduling of installation.
3. Millersburg will provide Albany with as-built record drawings for system improvements and backflow device locations to facilitate maintenance and responding to the One-Call system for the Millersburg water distribution system. Millersburg agrees to hold Albany harmless from any claims or damages, including costs of defense in the event that Millersburg facilities are not located as shown on the "as built" drawings or in the event that the drawings are not provided to Albany in a timely manner.
4. Millersburg will post a link to the Consumer Confidence Report on their website, print the web link on their utility bills, and provide printed copies of the CCR at the Millersburg city hall.
5. Millersburg will ensure that OHA received laboratory results and will pay for all water quality testing and laboratory expenses.
6. Millersburg will send plans to Albany Public Works Operations to review and provide suggestions on all proposed water system improvements and expansions.
7. Millersburg will generally follow Albany Standard Construction Specifications for material types and standard parts. If Millersburg authorizes use of materials or parts not identified in Albany's Standard Construction Specifications, Millersburg accepts that this may result in delays in responding to work requests or emergencies and may increase costs.

B. Millersburg SHALL NOT perform or contract to perform any of the distribution system maintenance items performed by Albany as listed in this agreement unless mutually agreed to in writing by both parties.

AUTHORIZATIONS BY MILLERSBURG

- A. Millersburg authorizes Albany to receive calls for repairs or emergency reporting from Millersburg customers, and to dispatch crews as appropriate to resolve such situations.

SERVICE MODIFICATIONS IN NON-EMERGENCY AND EMERGENCY SITUATIONS

- A. The services identified in this agreement performed or authorized by Albany or Millersburg may be modified at any time by mutual written consent of the parties.
1. In a non-emergency situation, modification shall be enacted upon written agreement between the chief officer, or authorized delegate, of Millersburg and the Albany Public Works Operations Director, or authorized delegate.
 2. In an emergency, verbal authorization for services not included in the schedules may be given by the representatives of Millersburg and Albany Public Works in charge at the time of the request. Such authorization will be temporary for the duration of the emergency.

CHARGES AND RATES

- A. The charges and rates for Albany to perform water system operations and maintenance services in COVENANTS OF ALBANY section 'A' are subject to the current charges and rates in effect at the time services are performed.
1. Charges for work performed will be based on an itemized time and materials costs basis.
 - Labor will be billed at an hourly rate, which includes the costs for direct labor and overhead for the hours required to perform the work.
 - Overhead costs rolled into a single average labor rate for all workers includes administrative expenses for telephone, mailing, printing, uniforms, and small tool use. Staff time for data updating (including GIS and CMMS), management reporting, phone calls, and producing and posting reports (including CCR) are not directly charged, but are assumed to be covered with overhead.
 - Materials will be billed at cost.
 - Equipment will be billed using FEMA's Schedule of Equipment Rates.
 2. The cost of special mutually beneficial projects (such as an orthophotography update) will be shared between Albany and Millersburg as negotiated on a case-by-case basis.
- B. Millersburg will be billed quarterly by Albany for the provision of basic and additional services. Payments are due within 30 business days of receipt. Late payments shall bear interest at nine (9) percent per annum.

OTHER TERMS AND CONDITIONS

- A. **Albany Obligations Subject to Appropriation and Emergency.** All Albany obligations are subject to the availability of funds, adequate for the work, being available and designated for such purpose by the Albany City Council. The Public Works Department agrees to recommend necessary funding, but the City Council reserves final discretion for the allocation of available resources. In the event of conditions deemed to constitute an emergency by the City of Albany, Albany's obligations hereunder may be suspended or reduced so long as Millersburg is generally provided service equivalent to that provided to Albany in-city residents.
- B. **Hold Harmless.** While Albany will use its best efforts to maintain the Millersburg facilities to the extent called for in this agreement, Albany does not have sufficient knowledge of the Millersburg system to guarantee an outcome. As a consequence, Millersburg agrees to hold harmless and indemnify Albany, its officers, agents and employees from any and all claims, demands, and damages of any kind, whether occurring to the property of Millersburg or to third parties as a result of the maintenance activities identified in this agreement. This obligation shall extend to all claims, damages, and demands as well as costs of defense.
- C. **Term and Termination.** This agreement begins upon execution and will be in force for a 10-year period unless amended or terminated as provided herein. At the end of the 10-year period, this agreement automatically extends for succeeding five-year terms subject to the terms herein.

1. Amendment. This Agreement may be amended if each party concurs to the proposed amendment in writing, signed by authorized representatives of each party.
 2. Termination. Any party may elect to terminate its participation in this agreement by giving written notice of its desire to terminate to the other party and stating a date for termination, which shall not be less than two years from the date of notice.
- D. **Notices**. Any notice herein required or permitted to be given shall be given in writing, shall be effective when actually received, and may be given by hand delivery or by United States mail, first class postage prepaid, addressed to the parties as follows:

If to Albany: City Manager
 City of Albany
 P.O. Box 490
 Albany, OR 97321

If to Millersburg: City Administrator
 City of Millersburg
 4222 NE Old Salem Road
 Albany, OR 97321

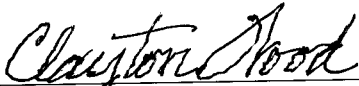
IN WITNESS WHEREOF the parties have caused this document to be executed pursuant to the authority of the respective City Councils, by the Mayor of the City of Albany and the Mayor of the City of Millersburg.

CITY OF MILLERSBURG:


CITY OF ALBANY:

DATED this 16 day of MAY 2016.

DATED this 11 day of May 2016.




 Clayton Wood, Mayor



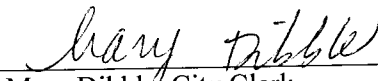
 Sharon Konopa, Mayor

ATTEST:

ATTEST:



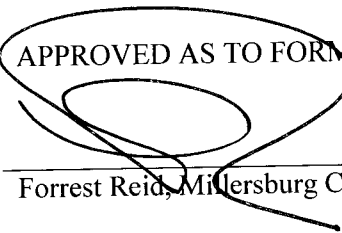
 Barbara Castillo, City Administrator/Recorder



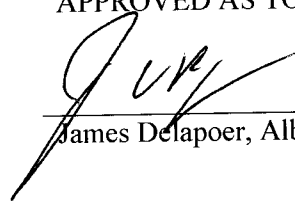
 Mary Dibble, City Clerk

APPROVED AS TO FORM:

APPROVED AS TO FORM:



 Forrest Reid, Millersburg City Attorney



 James Delapoer, Albany City Attorney

Appendix C: Water Use Surveys of Three Largest Water Users

APPENDIX C

Water Use Surveys of Three Largest Water Users in the City of Millersburg

Representatives from each of the top three commercial/industrial water users were contacted by e-mail. The e-mail correspondence included questions related to water use as follows:

1. Description of the types of water use. This should focus on the potable water supplied by the City of Millersburg.
2. Current conservation measures (recycling and process modifications; for example: vacuuming versus washing down spills, using cooling water or rinse water in another process, high efficiency (low-flow) fixtures for employees, recycling.)
3. Has (company) ever had a formal water audit to identify water saving measures? If the city helped fund an industrial water audit program, would (company) be interested in participating?
4. Does (company) have a plan in place if water service from the city was interrupted? How would (company) be able to respond if there was a severe drought or catastrophic interruption in city-supplied water?

Summaries of bi-monthly water use for 2018 through 2020, and industry-supplied responses to these questions follow.

APPENDIX C

Water Use Survey: Georgia-Pacific Chemicals, Inc.

Contact

Joe Graff
2190 Old Salem Rd. NE
Millersburg, OR 97321
541-928-4171
JEGRAFF@GAPAC.com

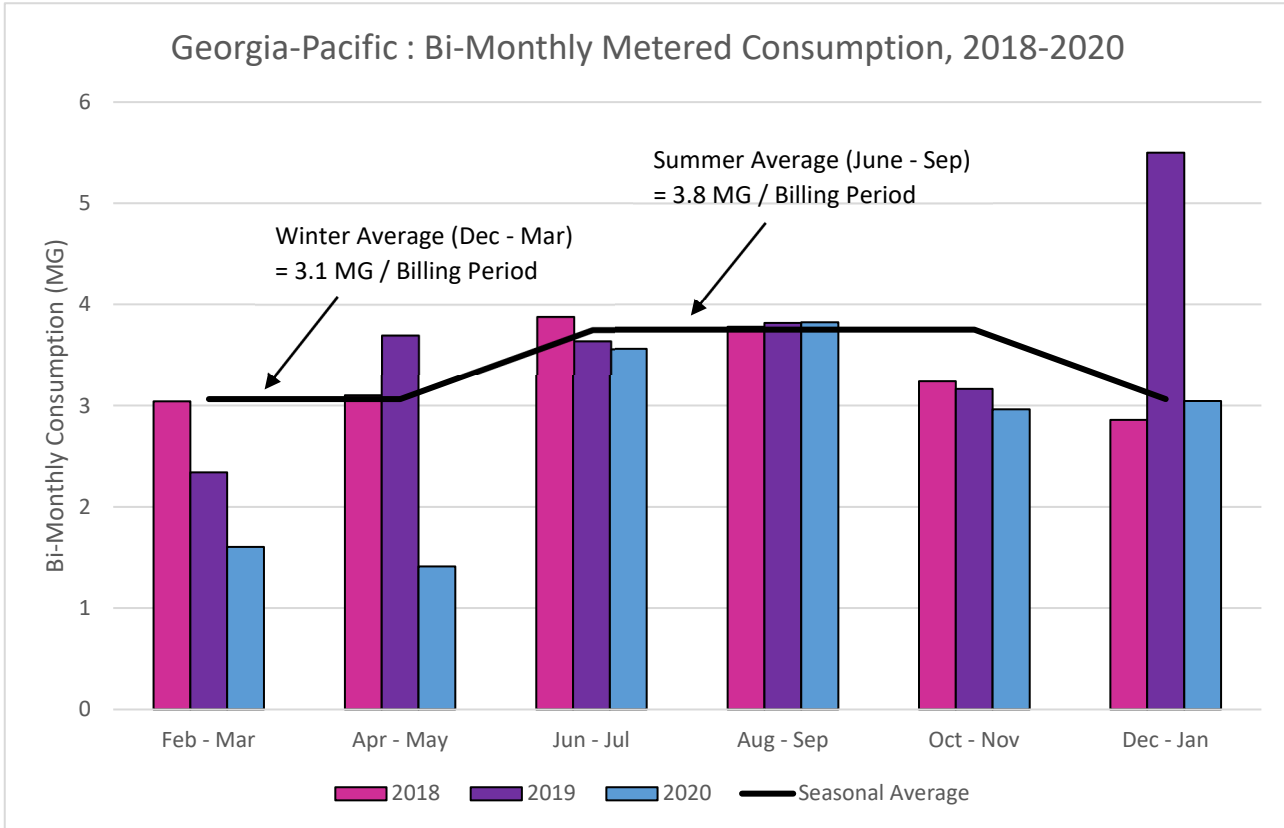
Description of Water Use

Georgia-Pacific produces formaldehyde and synthetic resins at their Millersburg location. Water is used in two cooling towers, in boilers, for washdown/cleaning and in final products. It is also used for personnel hygiene / safety and would be used for firefighting if needed. Recycled process water from the cooling towers, boilers, and wash down is used in the final product.

Exhibit C-1 summarizes city-supplied, metered water use for the periods 2018 through 2020. The average monthly use was 3.25 MG per bi-monthly billing period from 2018-2020. The highest bi-monthly total was 5.5 MG in the billing period between Dec 2019 and Jan 2020.

EXHIBIT C-1

Georgia Pacific Chemicals, Inc.: Monthly Metered Water Consumption, 2016-2020



Conservation Measures

Georgia-Pacific makes efforts to conserve and reuse water back into the process whenever possible. They have systems in place to recycle cooling tower blowdown water and washdown/cleaning water back into the finished process. They also try to minimize practices for water use where possible.

Georgia-Pacific has not had a formal water usage audit. They would possibly be interested in participating in a city funded industrial water audit program.

Curtailment

In the event of a severe drought or catastrophic water service interruption, Georgia-Pacific would shift production to other facilities.

APPENDIX C

Water Use Survey: Arauco

Contact

Jason Young
2550 Old Salem Rd.
Millersburg, OR 97321
541-917-6222
jason.young@arauco.com

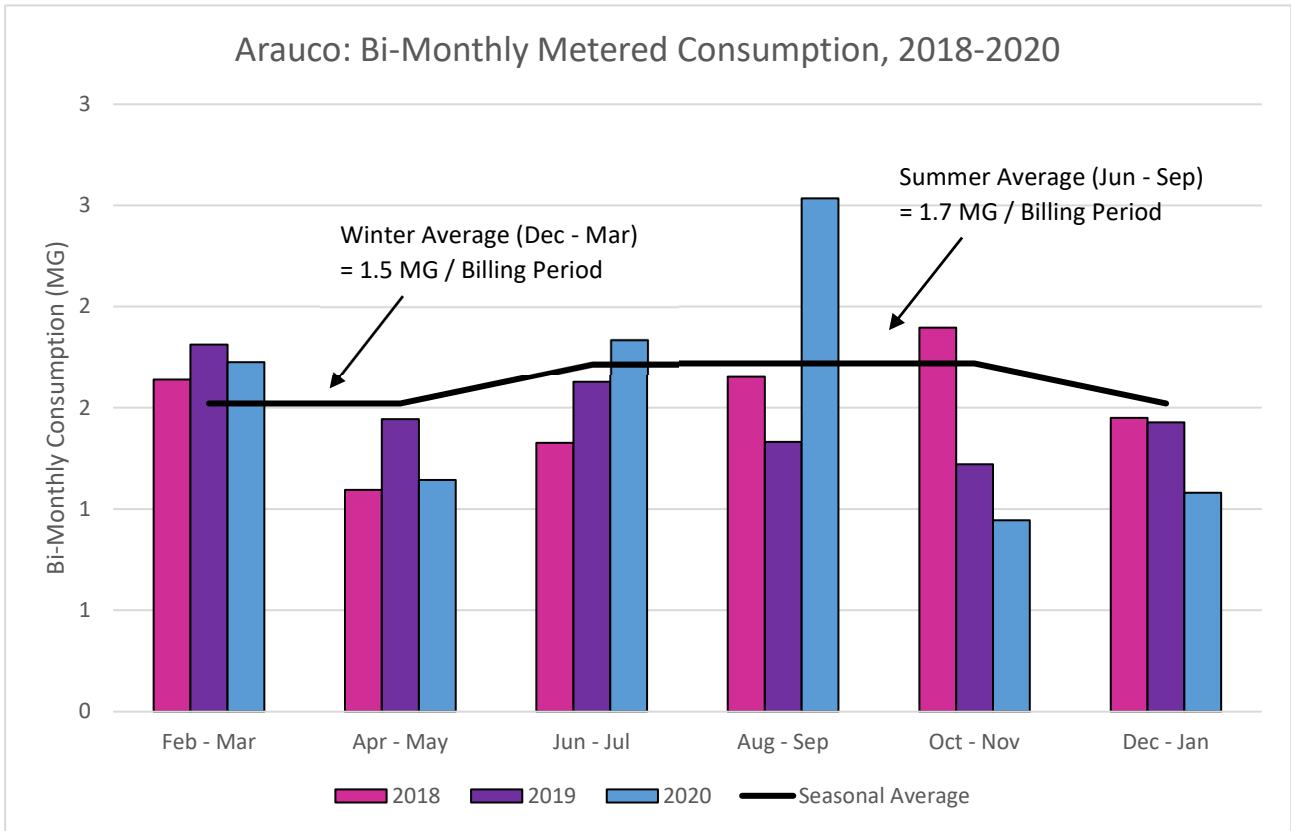
Description of Water Use

Arauco produces wood pressboard. The Mill uses municipal water for non-contact cooling water and boilers. They also use City supplied water for eye wash and shower stations, drinking water, and bathroom water. Arauco has a fire pond which is also used for stormwater treatment and surge capacity. The pond is primarily filled with well water. A 16" water line from the City goes directly to the pond for an emergency fire water supply. The supply line is rated for 5,400 gpm. The Mill tests their fire system monthly and flushes the emergency City supply line to control organic contamination between the backflow preventors and the control valve.

Exhibit C-2 summarizes city-supplied, metered water use for the periods 2018 through 2020. The average monthly use was 1.51 MG per bi-monthly billing period from 2018-2020. The highest bi-monthly total was 2.5 MG in August-September 2020.

EXHIBIT C-2

Arauco: Bi-Monthly Metered Water Consumption, 2018-2020



Conservation Measures and Opportunities

Arauco has implemented Dust Leak Repair projects to reduce washdown frequency. They have also installed cooling towers and improved the reliability of their Blender Chilling System to reduce noncontact cooling water usage.

Since the last WMCP they have begun recycling wastewater in several processes. Industrial wastewater is recycled back into the wet electrostatic precipitator. Water from the boiler blowdown is recycled to the Fire Pond for reuse and a recover tank is used to recycle city water for cooling towers and the boiler.

The plant also has a pond level management plan to effectively utilize stormwater while maintaining minimum requirements for their fire systems.

Arauco has not had a formal audit for water saving measures. They are planning to implement a water conservation project to utilize industrial discharge effluent more efficiently. This project would allow the mill to eliminate industrial wastewater discharge during normal operations.

Curtailment

Arauco does not have a current curtailment plan. The fire pond volume and ground water well on site are insufficient to meet the mill’s operational needs.

APPENDIX C

Water Use Survey: ATI Metals

Contact

Noel Mak

1600 NE Old Salem Rd.

Millersburg, OR 97321

541-926-4211

Noel.Mak@ATImetals.com

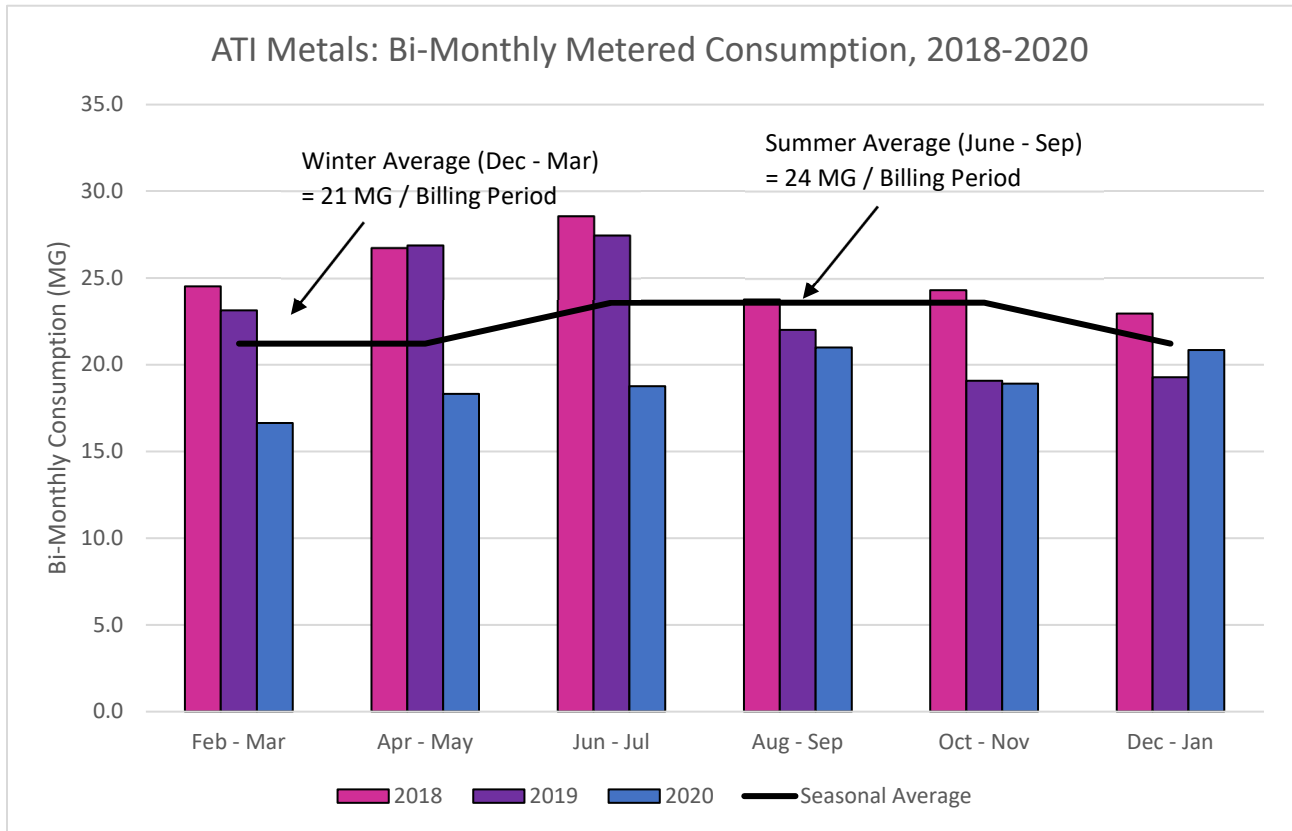
Description of Water Use

ATI uses approximately 2-3 MGD of water from the Willamette River for manufacturing. This includes water for production processes, cooling, a small amount of yard irrigation, and fire protection. These uses are permitted under ATI's Willamette River water right. Between 2018 and 2020, approximately 310,000 gpd of city-supplied water was used throughout the plant. This water was used for domestic purposes, backup and primary industrial usage, and lab usage. Domestic usages include bathroom and breakroom appliance. As of 2019 the plant has approximately 900 employees. Municipal water is a backup for critical processes, such as cooling towers, if the river pumps were to go down. It is also the primary source of water for processes that require less particulate content than river water and is further filtered to generate deionized water for lab equipment.

Exhibits C-3 summarize city-supplied, metered water use for the periods 2018 through 2020. The average monthly use was 22.4 MG per bi-monthly billing period from 2018-2020. The highest bi-monthly total was 28.6 MG in May-July of 2018.

EXHIBIT C-3

ATI: Bi-Monthly Metered Consumption, 2018-2020



Conservation Measures

ATI has implemented water recycling and reuse for most of their large industrial processes, including the majority of their cooling towers.

ATI would be interested in participating in a city-sponsored water audit program that was aimed at helping industries reduce their city water demands and associated costs. They do capture aspects of water use in energy and sustainability audits they participate in.

Curtailment

In case of a short-term disruption industrial processes that relied on municipal water would be idled or converted to river water. Backup water could also be trucked in. The company does not have a plan for a long-term drought in which both municipal and river water sources are limited.