BRWCD

BEAR RIVER WATER CONSERVANCY DISTRICT

CONSERVATION PLAN
2021 UPDATE

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CHAPTER 1 - INTRODUCTION

WATER CONSERVATION PLAN REGULATIONS

In response to the rapid growth occurring throughout the State of Utah and a sincere concern for the future availability and cost of the water supply, the Utah State Legislature passed and amended the "Water Conservation Plan Act" (73-10-32 Utah Code Annotated). This law requires water conservancy districts and retail drinking water providers to prepare a water conservation plan, submit the plan to the Utah Division of Water Resources and to update the plan at least every five years. The Board of Trustees of the Bear River Water Conservancy District ("the District") shares those same concerns. The District will comply with the regulations of the Water Conservation Plan Act to prepare, adopt and update a Water Conservation Plan outlining conservation goals and objectives for retail customers and to support and encourage wholesale customers to be wise stewards of water by implementing best management practices for homes and their community.

BACKGROUND

The Bear River Water Conservancy District was created September 8, 1988 by court decree, under the guidelines of the Utah Water Conservancy Act. The District's mission statement states, the District will endeavor to conserve and protect water and water rights; develop and provide water for municipal, industrial, and agricultural use; and use these resources to best serve the residents of Box Elder County. The District is governed by an eleven member Board of Trustees appointed by the Box Elder County Commission. Eight geographical areas within Box Elder County have been delineated with one Trustee appointed from each area. In addition, a member of the Box Elder County Commission, the Bear River Canal Company and a person representing independent water companies serve on the Board.

The District's service area includes the boundaries of Box Elder County. Box Elder County covers an area of about 6,594 square miles including approximately 1,000 square miles occupied by a portion of the waters of the Great Salt Lake. Box Elder is the fourth largest county in Utah with an estimated population in 2020 of 58,326, a 6.25% increase since 2010. The majority of this population resides in the Lower Bear River Valley.

The District currently has five public drinking water systems: the Harper Ward system, the Bothwell M&I system, the South Willard system, the Beaver Dam system, and the Collinston system. An estimated population of 735 is served by these systems. This was calculated by multiplying the number of active retail connections (226) by 3.25 average number of persons per connection. Usage numbers reported here are from 2016 -2020 plus January through November 2021. The number of active retail connections reported for each system are as of November 30, 2021.

CHAPTER 2 - BRWCD WATER SYSTEMS

BEAVER DAM CULINARY WATER SYSTEM

A culinary water system was completed in 2012 in the Beaver Dam area consisting of three flowing springs, an arsenic removal treatment plant, a 200,000 gallon water storage tank, and several miles of 8-inch diameter water mainlines. A small booster station lifts water from two of the springs which are located lower in elevation than the treatment plant. The Beaver Dam community is situated on Highway 30 just east of the Bear River and just west of the Cache County boundary to the east. The system has a total of 42.25 connections sold (fraction is due to large meters) and serves 30 active residential connections and 1 institutional connection.

BOTHWELL M & I SYSTEM

The District's wholesale system completed in 1996 is part of an overall master plan to provide additional culinary water supplies to augment existing public drinking water systems in the general vicinity of Tremonton City. The system consists of two separate water delivery systems. The west side system is located in the Bothwell Pocket and consists of two groundwater wells, a well house, a 500,000 gallon storage reservoir and transmission pipelines. This system wholesales water to Tremonton City, Thatcher/Penrose Service District, Bothwell Water Company, and the West Corinne Water Company to augment their existing supplies. There are 51 active retail residential connections connected to this system and 2 industrial connection and 2 commercial connections. The District wheels water from the west side system in the Bothwell pocket through Tremonton City's water distribution lines to a booster station located in East Garland to the east side system. The eastside system serves wholesale water to Ukon Water Company, Riverside/North Garland Water Company, and S & K Water Company.

COLLINSTON CULINARY WATER SYSTEM

A culinary water system was completed in 2015 in the Collinston area consisting of two booster stations, two 500,000 gallon tanks, and a main distribution pipeline that will serve residents of the Collinston area as well as providing wholesale water to Ukon Water Company, Cedar Ridge and Tremonton City. A new meter station to provide service to Garland Town is planned for the future. The water for this system is provided by the town of Deweyville through a surplus water sales agreement. The system serves 55 active residential connections, 3 industrial connections, 3 commercial connections, and includes 45 dry taps (these connections do not enter into the calculations of water usage or GPCD). Collinston is located in unincorporated Box Elder County near Highway SR-38. The water system begins at Deweyville City limits and extends to Highway 30 on the north.

HARPER WARD CULINARY WATER SYSTEM

The Bear River Water Conservancy District currently serves 89 active retail residential connections and 2 commercial connections in the unincorporated area of Harper Ward located between Brigham City and Honeyville City on Highway 38. The District has contracted with Brigham City for 100 acre feet of culinary water to serve these connections. The Harper Ward project was completed in 1995. Meter stations have been constructed on this system to serve Corinne City, West Corinne Water Company and Honeyville City on an emergency case basis.

The District has purchased property for a well site and storage reservoir in the Harper Ward area. A test well was drilled in 2021 on this property to provide a new source for the Harper Ward system that will be owned and operated by the District.

SOUTH WILLARD CULINARY WATER SYSTEM

A new culinary water system was completed in 2011 the South Willard area consisting of a groundwater well, pump station, 1,000,000 gallon reservoir and a main distribution pipeline that will serve the unincorporated area of South Willard from approximately 8100 South Hwy 89 to the Box Elder County south boundary line. This system serves 1 active retail connection, 1 institutional connection and 1 commercial connection. It also provides wholesale water to South Willard Water Company, and Hot Springs Mobile Home Park. There is a connection to provide emergency water to the Coleman Mobile Home Court. Pineview Water Systems will provide secondary water to this area. This effort is a result of goal #3 of the 2010 Water Conservation Plan. There are 2 planned developments in the Districts service area that will increase the number of retail connections when they are completed.

TOTAL WATER DELIVERIES

Detailed monthly usage totals broken down by system and type of connection is included Appendix A to this report. This data was used to compute general system totals and look for trends in the data to determine if conservation measures are making an impact on the users of these water systems. The type and number of connections including the usage numbers from 2016-2020 plus January through November 2021 for all District service areas are presented in Table 1.

Table 1
Total Connections and Usage (All District Service Areas)

Year	Type of Connection	Active Connections	Total Usage K-Gall	Per Capita Usage (gpcd)
2016	Retail	167	40,346	204
	Institutional	1	204	
	Industrial	3	991	
	Commercial	7	1,457	
2017	Retail	175	44,563	215
	Institutional	1	18	
	Industrial	3	1,220	
	Commercial	8	3,131	
2018	Retail	186	50,703	230
	Institutional	1	426	
	Industrial	4	1,212	
	Commercial	8	2,385	
2019	Retail	183	41,957	193
	Institutional	2	196	
	Industrial	4	1,192	
	Commercial	8	839	
2020	Retail	204	52,348	216
	Institutional	2	96	
	Industrial	4	923	
	Commercial	8	2,029	
2021	Retail	226	42,160	157
	Institutional	2	45	
	Industrial	5	968	
	Commercial	8	4,041	

Figure 1 below indicates the 2020 total monthly water usage in million gallons for residential connections for the combined systems.

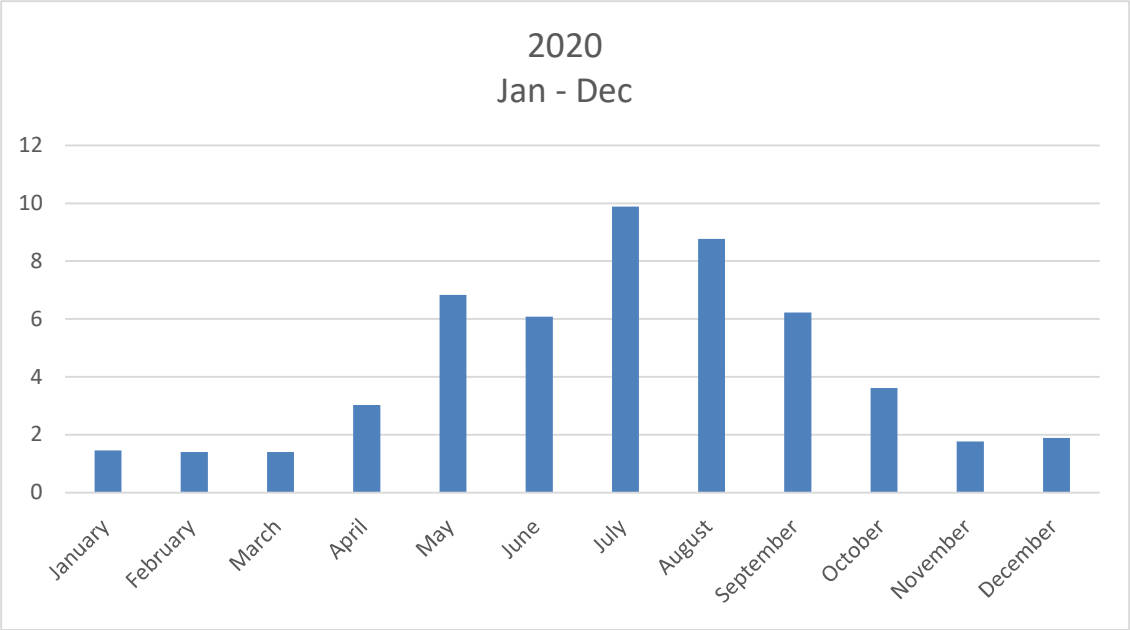


Figure 1: Monthly Average Residential Water Use (2020-All Systems)

BRWCD Residential Retail Systems GPCD Calculation (2020)

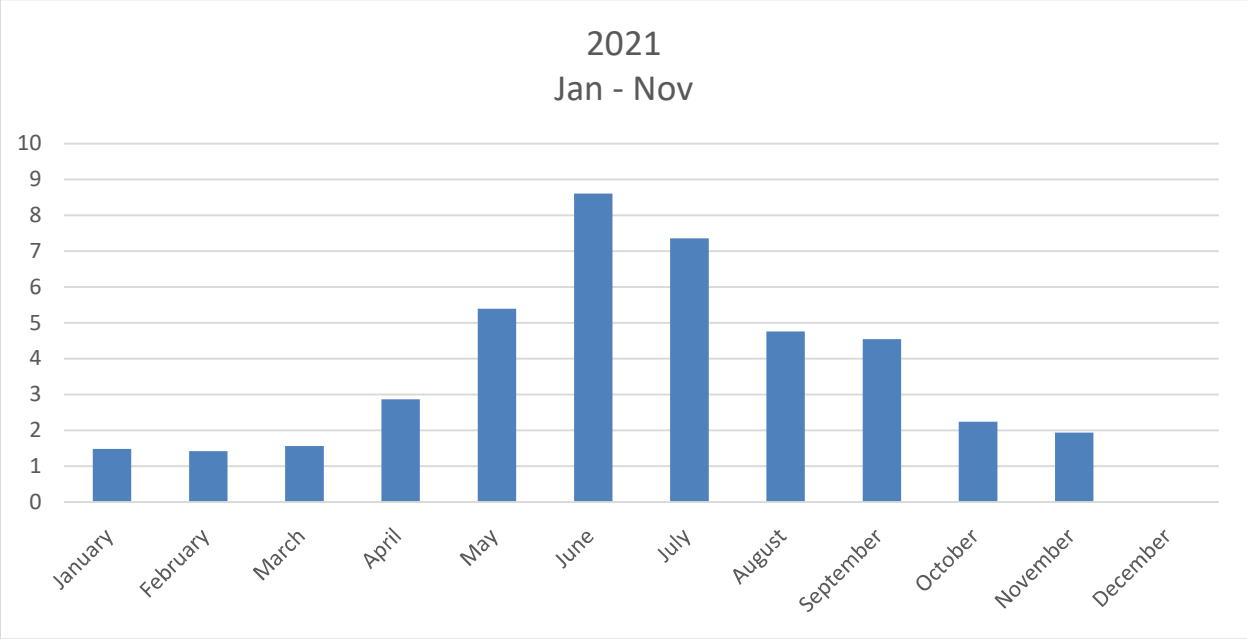
52,348,000 gallons / 663 population

= 78,956 gallons per capita per year

78,956 / 365 days = 216 gallons per capita per day

(Approximate Population based on 3.25 people per connection)

Figure 1a. below indicates the 2021 total monthly water usage in million gallons for residential connections for the combined systems.



BRWCD Residential Retail Systems GPCD Calculation (2020)

42,160,000 gallons / 663 population

= 57,361 gallons per capita per year

57361 / 365 days = 157 gallons per capita per day

(Approximate Population based on 3.25 people per connection)

2021 numbers reflect efforts to reduce water usage during the drought. GPCD was reduced from 216 per capita per day to 157 per capita per day. (See more regarding the Drought Response Plan implementation on page 15.)

The estimated gallons per capita per day was also computed in the same manner for each individual system from 2016 to November 2021 to determine if any trends exist in the data. The results of that analysis are presented in Figure 2.

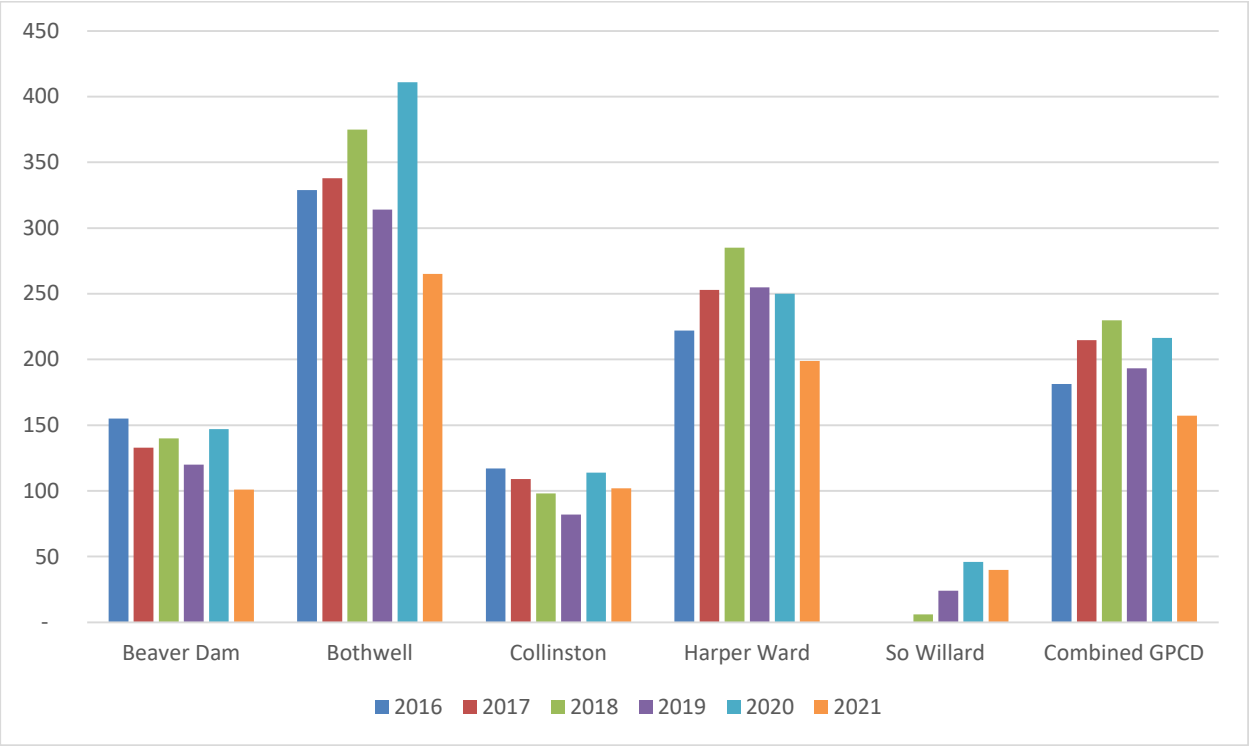


Figure 2: Estimated Per Capita Usage BRWCD Systems (2016-Nov 2021)

There is some fluctuation between the years which likely is a function of how wet or dry the conditions were in general.

The State has set a regional goal for the Bear River region to reduce the gpcd by 18% from 304 gpcd in 2015 to 249 gpcd in 2030. Total culinary water usage compared with the number of people served by BRWCD's retail systems is shown in the calculation above. The average BRWCD customer used 216 gallons of water per capita per day (gpcd) (all systems included) in 2020 and this number was reduced to 157 gpcd for the first 11 months of 2021. This is well below the projected goal of 249 gpcd.

BRWCD does not provide secondary water to any of these retail customers. Secondary water from private irrigation companies is available in the Harper Ward and South Willard areas. In the Beaver Dam and Collinston areas, some residents have individual private wells they use for irrigation and outdoor watering. In the Bothwell system area, there is one residential development where secondary water was provided by the developer from shares in the Bear River Canal Company that is being managed by an HOA. Therefore, the culinary water from these two systems being used for outdoor watering can only be estimated by comparing usage in the irrigation season.

INVENTORY OF CURRENT WATER SUPPLY SOURCES

The current water supply for each BRWCD source is presented in Table 2.

Table 2
Current Water Supply for Culinary Use
Does not include wholesale sales

System	Source	Annual Amount	Water Right				
Beaver Dam	Sleepy Hollow Spring/Lower East Spring/Lower West Spring	37.22 acre feet	**29-693 (a37735)**				
							Jan - Nov
	Retail Sales	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
	Residential	4,093,000	3,508,000	3,845,000	3,306,000	4,044,000	3,206,000
	Institutional	204,000	18,000	426,000	143,000	53,000	18,000
	Total Gallons	**4,297,000**	**3,526,000**	**4,271,000**	**3,449,000**	**4,097,000**	**3,224,000**
	Acre Feet	**13.19**	**10.82**	**13.11**	**10.58**	**12.57**	**9.89**
Bothwell M&I	**Source**	**Annual Amount**	**Water Right**				
	Newman Well/Back-up Well	1,669.5 acre feet	**29-1474 (a24585)**				
							Jan - Nov
	Retail Sales	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
	Residential	14,955,000	16,057,000	17,813,000	15,259,000	19,966,000	14,274,000
	Industrial			154,000	158,000	106,000	144,000
	Commercial	834,000	1,773,000	106,000	33,000	22,000	742,000
	Total Gallons	**834,000**	**1,773,000**	**106,000**	**33,000**	**22,000**	**742,000**
	Acre Feet	**2.56**	**5.44**	**0.33**	**0.10**	**0.07**	**2.28**
Collinston	**Source**	**Annual Amount**	**Water Right**				
	Surplus Culinary Water Purchased from Deweyville	250 acre feet	**29-4020** **29-4741 (a46389) pending approval**				
							Jan - Nov
	Retail Sales	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
	Residential	2,102,000	2,297,000	2,808,000	2,936,000	5,321,000	5,948,000
	Industrial	991,000	1,220,000	1,058,000	1,034,000	817,000	824,000
	Commercial	569,000	1,195,000	1,222,000	510,000	1,801,000	3,081,000
	Total Gallons	**3,662,000.00**	**4,712,000.00**	**5,088,000.00**	**4,480,000.00**	**7,939,000.00**	**9,853,000.00**
	Acre Feet	**11.24**	**14.46**	**15.61**	**13.75**	**24.36**	**30.24**
Harper Ward	**Source**	**Annual Amount**					
	Culinary Water Purchased from Brigham City	100 acre feet	**29-4225** **2.0 cfs (900 AF)**				
							Jan - Nov
	Retail Sales	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
	Residential	19,196,000	22,701,000	26,231,000	20,431,000	22,968,000	18,690,000
	Commercial	54,000	138,000	255,000	76,000	31,000	77,000
	Total Gallons	**19,250,000.00**	**22,839,000.00**	**26,486,000.00**	**20,507,000**	**22,999,000.00**	**18,767,000.00**
	Acre Feet	**59.08**	**70.09**	**81.28**	**62.93**	**70.58**	**57.59**
South Willard	**Source**	**Annual Amount**	**Water Right**				
	South Willard Well/Purchased from South Willard Water Company	1,647 acre feet	29-4145				
							Jan - Nov
	Retail Sales	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
	Residential			6,000	25,000	49,000	42,000
	Institutional				53,000	43,000	27,000
	Commercial		25,000	802,000	220,000	175,000	141,000
	Total Gallons		**25,000**	**808,000**	**298,000**	**267,000**	**210,000**
	Acre Feet		**0.08**	**2.48**	**0.91**	**0.82**	**0.64**

BRIGHAM CITY / HARPER WARD

When the District constructed the Harper Ward system in 1995, the District contracted with Brigham City to purchase water for this project. This arrangement continues presently and is renewable. The District has approved Water Right 29-4225 for 2.0cfs (900 AF) and owns property for two groundwater wells, a pump station and reservoir in the Harper Ward area in preparation for developing our own source. A test well was be drilled in the summer of 2021.

DEWEYVILLE / COLLINSTON

The District has a contracted agreement with Deweyville Town to purchase surplus water from the Town to supply water for the Collinston System until the District has its own sources developed. This agreement goes through 2027. Water Right Change Application a75391 was approved in 2019 to move 250 A/F to Deweyville's sources for District use. The District drilled a culinary water well at Flat Canyon on property in Deweyville in 2019 that is currently in the development stages. The goal is to put this water to use in the Collinston system in the next 3 years. Water Right 29-4741 has been filed for 250 AF to divert water from this well.

NEWMAN WELL AND BACK-UP WELL

In 1993, the District purchased the Newman Farm located in the Bothwell area. The farm included four groundwater wells and the associated water rights for irrigation supply to 787.5 acres of land. After conversion to municipal use, these rights yield up to 1,669.5 acre-feet. A fifth well, known as the Newman Back Up well, was drilled in 2001 approximately 100 feet east of the Newman Well. Both wells are situated on farmland owned by the District and both wells can be used for either irrigation or M & I use. The Newman and Backup Wells are presently equipped at 3,100 gallons per minute and 2,400 gallons per minute, respectively.

SOUTH WILLARD CULINARY SYSTEM

In 2006, the District drilled a new well in the South Willard area for M & I use. Construction of a 1,000,000 gallon reservoir, pump station and distribution pipeline project began in 2009 and was completed in 2011. Significant future residential growth in this area is expected.

POPULATION GROWTH AND WATER DEMAND PROJECTIONS

Existing population and future growth trends directly impact water source and system capacity requirements. Estimated population growth and resulting connections for the BRWCD service areas are shown in Table 3 and Table 4 respectively. Many factors influence this projection and the estimates shown may vary substantially from the actual population experienced.

Table 3
Population Projections for 2030 and 2050

	2020	2030	2050
EXISTING DISTRICT SERVICE AREAS	**Population**	**Population**	**Population**
Beaver Dam Retail	85	147	151
Bothwell Retail	150	193	273
Collinston Retail	143	263	420
Harper Ward Retail	283	340	382
South Willard Retail	3	231	980

Table 4
Connection Projections for 2030 and 2050

	2020	2030	2050
EXISTING DISTRICT SERVICE AREAS	**Connections**	**Connections**	**Connections**
Beaver Dam Retail	26	42	43
Bothwell Retail	46	55	78
Collinston Retail	44	75	120
Harper Ward Retail	87	97	109
South Willard Retail	1	66	280

*Note: Sources of the population projections for 2030 and 2050 were based on data from the US Department of Commerce Census Bureau estimated population for Box Elder County. The population was calculated by multiplying projected connections by 3.25. According to Census Records, Box Elder County experienced a growth rate of 15.4% from 7/1/2010 to 7/1/2020.

PROJECTED WATER SUPPLY THAT CAN BE DELAYED BY IMPLEMENTING CONSERVATION PROGRAMS AND PRACTICES

Box Elder County is experiencing a rapid growth in 2020 and 2021. Conservation programs and practices are important to the water supply of the County. As our growth increases, we need to be prepared to be able to serve the residents of Box Elder County as well as the industrial and commercial entities that come with growth.

Included below is a list of items specific to the District regarding future water supply plans, details about the District's customer base, and the importance conservation could play in delaying development of future water sources.

1. The District's Per Capita usage is already low compared to the state average.
2. The District's users are predominantly rural large lots with other water sources for the outside watering including; wells, springs, and irrigation water sources.
3. Still, if conservation can reduce District water use even further, more homes can be served with existing supplies. New supplies can be delayed until they are actually needed.
4. The District is currently planning new sources of water to meet future demands. These future sources include new wells and the Bear River Water Development project, which is currently being studied by the State of Utah.
5. To the degree that conservation can reduce water use among existing users, the future water supply projects can be delayed until they are needed.

Two of the District's systems are currently served by surplus water from other providers. The District has contracted with Brigham City for the use of their surplus water to supply water to the Harper Ward area. The new Collinston project is supplied with surplus water from Deweyville. This helps to delay water supply projects and encourages the District's customers to conserve, since they are being served by surplus water and the District. The District acknowledges that these are temporary solutions and is working to develop new sources in both areas.

CURRENT PRICING STRUCTURE WATER RATES

Individual water meters are read at the beginning of each month. Retail customers of the Bear River Water Conservancy District are billed at the beginning of each month for water used the previous month. The water rates for each of the District's water systems are presented in Table 5 below.

Table 5
Current Retail Water Rates for All Water Systems

	Base Rate	Base Rate Up To	$1.00 per 1,000	$1.25 per 1,000	$1.50 per 1,000	$2.00 per 1,000
Beaver Dam	$40.00	11,000 Gallons	11,000 - 22,000	22,000-33,000	33,000-44,000	>44,000

	Base Rate	Base Rate Up To	$1.00 per 1,000	$1.25 per 1,000	$1.50 per 1,000	$2.00 per 1,000
Bothwell	$29.00	7,000 Gallons	7,000 - 14,000	14,000-28,000	28,000-56,000	>56,000
Collinston	$40.00	7,000 Gallons	7,000 - 14,000	14,000-28,000	28,000-56,000	>56,000

	Base Rate	Base Rate Up To	$2.00 per 1,000	$3.00 per 1,000	$5.00 per 1,000	$7.00 per 1,000	$10.00 per 1,000
Harper Ward	$49.00	10,000 Gallons	10,000-100,000	100,000-200,000	200,000-400,000	400,000-700,000	>700,000

	Base Rate	Base Rate Up To	$2.00 per 1,000
South Willard	$35.00	7,000 Gallons	>7,000

To encourage conservation, the retail water rates for the Harper Ward System were adjusted March 1, 2021. The retail rates for the District's other systems are being reviewed. The wholesale water rate is currently $345.00 per acre foot. The wholesale water customers of BRWCD are billed quarterly for the contracted amount of water.

WATER PROBLEMS, CONSERVATION MEASURES AND GOALS

The following problem areas have been identified, reviewed, and prioritized for meeting conservation goals outlined in this plan.

1. With the exception of the Harper Ward System, the District's retail water rates have been in place since the construction of the projects. The customers pay the basic monthly charge for a minimum amount of usage and pay an overage charge for usage beyond the minimum. The collective rates have been calculated at each project based on cost. New tiered rates were implemented January 2019 to provide incentives for conservation. However, the challenge is to adopt rates that encourage conservation but provide sufficient revenue to meet the District's financial obligations. The District relies on the water revenue to repay bonds issued to fund construction of infrastructure.

2. For those water users who use District water for lawns and gardens, some users may lack information and understanding of landscaping water requirements and efficient water use habits and practices. Users may lack the knowledge in the amount of water required to maintain healthy landscaped areas and how to consistently use water efficiently outdoors. Many customers irrigation and indoor practices are based on convenience rather than plant needs and water supply considerations.

3. As water meters age, they become less accurate which leads to loss of revenue.

4. The District wholesales water to fourteen other public water suppliers in Box Elder County through annual take or pay contracts and other systems on an emergency case basis only including: Tremonton City, Bothwell Water Company, Thatcher Penrose Water Company, S & K Water Company, Box Elder County Road Department, Ukon Water Company, Riverside North Garland Water Company, Cedar Ridge, Hot Springs Mobile Home Park, Coleman Mobile Home Court, South Willard Water Company, Corinne City, West Corinne Water Company, and Honeyville City. The District's use of take or pay contracts for these customers guarantees the revenue needed to pay bond obligations for constructed infrastructure but may not encourage conservation since the District's wholesale customers pay for the contracted amount of water whether they use it or not.

GOALS:

1. To follow the water conservation goal of the State of Utah to decrease water use by 18% by the year 2030 in the Bear River Region through the conservation methods stated in this plan. The savings will be measured by consistently reading the meters every month on the retail systems and determining the gpcd for each year.

2. To maintain a financially viable water system while supporting and encouraging water conservation through good operation and maintenance procedures and implementing good management practices.

3. To educate customers on the use of water wise landscaping. The District has added links to several conservation websites from the District's website and continue to provide conservation messages on our Monthly Newsletters, also posted on our website.

4. To develop and implement a meter replacement schedule for the retail systems and monitor wholesale meters and replace them as necessary. The District began replacing meters in the Harper Ward system in 2020 and will continue to replace all meters that have been in service more than 15 years. Wholesale meters are replaced as needed.

5. The District is working with the municipalities and other public water suppliers in the County to develop a Drought Resiliency Plan that will best serve the residents of Box Elder County. We have met with many stakeholders with a goal of strengthening partnerships between the stakeholders and the District, to identify drought vulnerabilities and their potential risk levels, and to discuss potential projects that could help mitigate the drought vulnerabilities in the region.

6. To develop, prepare and adopt a resolution requiring customers of the District to connect to secondary water systems where available and preserve the culinary water for indoor use only.

7. Adopt more aggressive rates that encourage water conservation while preserving adequate revenue for the District.

CURRENT CONSERVATION PRACTICES

The District has developed and adopted this water conservation plan as required by law and submitted it to the State of Utah, Division of Water Resources and updated the plan according to law in July 2021.

The District's current water conservation program is directed primarily at providing useful material to assist residents to use water more efficiently and to conserve and protect water. This includes educational bill stuffers to inform customers of conservation practices. The District is also actively seeking secondary water sources for new development and future customers.

The District is supportive and has adopted the practice as recommended by the State of Utah to refrain from outdoor watering between the hours of 10:00 a.m. and 6:00 p.m. We have recommended following this schedule to our customers through mailings and through our website at www.brwcd.com.

Large amounts of water can be lost through leaks in a water system that are undetected or slow to be repaired. The District works diligently to detect leaks and quickly make repairs. The District compares water produced with water sold each month. This allows the District to determine how much unaccounted for water was lost. Historically, the District has had much success in tracking down the cause of unaccounted for water and making the necessary repairs. The water meters are read each month and readings reviewed for any abnormality in water use that could be caused by a leak.

Rules and Regulations for Retail Service were revised and adopted by the Board of Trustees in May of 2010. Conservation measures described in these rules include:

> Section 1.1.5 .13 – "residential water provided by the District pursuant to this agreement is for household use and limited outdoor use".
>
> Section 5.1.3 – "to promote water conservation and encourage the immediate repair of a leak, the District may adjust the customer's bill by crediting the average cost of wholesale water for the estimated amount of water lost because of a leak. The account will not be adjusted until the customer has presented sufficient proof that the leak in the water line has been repaired successfully."
>
> Section 5.1.5 – "The District shall periodically, or upon reasonable request of the customer, test water meters for accuracy. Faulty meters shall be repaired and replaced by the District."

The Rules and Regulations also address limitations in water service due to scarcity or drought. The Board of Trustees or General Manager can issue a proclamation to "limit water use for any purpose to the extent as in its judgment is required for the public good".

All residential, commercial, institutional, industrial, and wholesale connections are metered and read each month. The District will continue to monitor wholesale and retail usage and replace meters when necessary.

The District's Assistant General Manager has been designated as the Water Conservation Coordinator for the District. They will facilitate conservation information to be posted on the District website and/or added to the monthly utility bills.

The District encourages Box Elder County to develop and adopt landscaping ordinances that require water-efficient landscaping, irrigation efficiency standards and acceptable plant materials for commercial and residential developments.

Information on efficient outdoor and indoor water use is available to our retail customers through annual mailings and the District web site (www.brwcd.com).

ADDITIONAL CONSERVATION MEASURES IMPLEMENTED IN RESPONSE TO THE CURRENT DROUGHT CONDITIONS.

In June 2021 the District implemented the following Drought Response Plan. The results of the plan have been significant in reduced water usage. As shown on tables 1 and 1a on page 5 and 6 the gpcd was reduced from 216 to 157. Meters were read weekly during the high usage months, rather than monthly, and the results were posted on our website for the customers to view and then adjust their watering habits. The new rates and reading meters weekly also aided several customers to find leaks on their properties.

Table 6 Drought Response Plan

BRWCD Retail System Drought Response Plan For 20% Indoor Use Reduction and 50% Oudoor Use Reduction						
		Retail Water Systems				
Heading	Metric	Harper Ward	Bothwell	Beaver Dam	South Willard	Collinston
Water Rates	Base Monthly Water Rate ($):	$49.00	$49.00	$40.00	$35.00	$40.00
	Tier 1 Monthly Water Rate:	= $5.00 per 1000 gallons over base rate, up to 50,000 gallons				
	Tier 2 Monthly Water Rate:	= $10.00 per 1000 gallons over 50,000 gallons				
Monthly Targets (Gallons included in Base Rate) by Customer by System	Monthly Targets for January	9,000	8,000	9,000	9,500	7,000
	Monthly Targets for February	9,000	8,000	9,000	9,500	7,000
	Monthly Targets for March	9,000	8,000	9,000	9,500	7,000
	Monthly Target for April	11,000	12,000	9,000	9,500	8,000
	Monthly Target for May	17,000	24,000	10,000	9,500	11,000
	Monthly Target for June	26,000	35,000	14,000	9,500	14,000
	Monthly Targets for July	30,000	44,000	18,000	9,500	20,000
	Monthly Targets for August	30,000	44,000	18,000	9,500	20,000
	Monthly Targets for September	19,000	26,000	11,000	9,500	14,000
	Monthly Targets for October	12,000	14,000	8,000	9,500	10,000
	Monthly Targets for November	10,000	12,000	8,000	9,500	10,000
	Monthly Targets for December	10,000	12,000	8,000	9,500	10,000

In conjunction with the retail plan and pricing, wholesale customers were not required to take the minimum contracted amount of water if it was not needed.

IMPLEMENTATION, MONITORING AND EVALUATION

The General Manager will oversee the implementation of this plan. The following procedures are indicated to accomplish the goals outlined on Page 14 of this plan:

Goal #1 – The General Manager will ensure that the water usage meters are read on a minimum of once per month and reports of the usage are prepared and reviewed to evaluate progress in accomplishing the State of Utah goal to decrease water use by 25%. The gpcd will be calculated at the end of each year for comparison.

Goal #2 – The General Manager will provide training in all conservation measures, best management practices and operation and maintenance procedures for the Certified Systems Operator and ensure that the systems operator continues to maintain certification.

Goal #3 – A new Water Service Policy to be adopted by the Board of Trustees to include provisions for the requirement of secondary water lines to be constructed in new developments and customers to connect where secondary water is made available.

Goal #4 – The District will begin replacing meters after 2.25 million gallons of water have passed through them per the manufacturer's recommendations.

Goal #5 – The District will consider implementing a more conservation based rate structure.

WATER CONSERVATION PLAN UPDATE

The Bear River Water Conservancy District will update its Water Conservation Plan every five years as required by law. The process is as follows:

1. Review the current plan
2. Set new goals
3. Input new data as it becomes available
4. Hold a public meeting on the updated plan
5. Adopt the plan by resolution of the Board of Trustees

APPENDIX A

All Available Retail Water Usage Data from 2016 to November 2021 for all BRWCD Systems

2016 Water Usage by System and by Type

	January	February	March	April	May	June	July	August	September	October	November	December	**Total**	Active Connections
Residential														
Beaver Dam	228,000	183,000	175,000	202,000	206,000	524,000	771,000	676,000	364,000	234,000	290,000	240,000	**4,093,000**	25
Bothwell	331,000	371,000	404,000	492,000	1,126,000	2,684,000	4,075,000	2,798,000	1,471,000	383,000	387,000	433,000	**14,955,000**	43
Collinston	70,000	75,000	97,000	121,000	160,000	160,000	497,000	429,000	245,000	84,000	76,000	88,000	**2,102,000**	17
Harper Ward	723,000	732,000	639,000	756,000	1,202,000	3,093,000	3,609,000	3,511,000	2,160,000	1,085,000	851,000	835,000	**19,196,000**	82
	1,352,000	**1,361,000**	**1,315,000**	**1,571,000**	**2,694,000**	**6,461,000**	**8,952,000**	**7,414,000**	**4,240,000**	**1,786,000**	**1,604,000**	**1,596,000**	**40,346,000**	**167**
Institutional														
Beaver Dam	1,000	2,000	1,000	2,000	55,000	129,000	9,000	5,000	-	-	-	-	**204,000**	1
Industrial														
Collinston	71,000	76,000	81,000	84,000	81,000	81,000	91,000	101,000	90,000	72,000	73,000	90,000	**991,000**	3
Commercial														
Bothwell	1,000	-	1,000	51,000	44,000	65,000	131,000	144,000	113,000	124,000	116,000	44,000	**834,000**	2
Collinston	43,000	45,000	15,000	4,000	14,000	14,000	45,000	169,000	120,000	30,000	38,000	32,000	**569,000**	3
Harper Ward	6,000	4,000	3,000	3,000	4,000	6,000	6,000	6,000	6,000	5,000	3,000	2,000	**54,000**	2
	50,000	**49,000**	**19,000**	**58,000**	**62,000**	**85,000**	**182,000**	**319,000**	**239,000**	**159,000**	**157,000**	**78,000**	**1,457,000**	**7**

2017 Water Usage by System and by Type

	January	February	March	April	May	June	July	August	September	October	November	December	**Total**	Active Connections
Residential														
Beaver Dam	201,000	190,000	186,000	144,000	221,000	585,000	639,000	596,000	303,000	144,000	144,000	155,000	**3,508,000**	25
Bothwell	319,000	339,000	433,000	365,000	1,586,000	3,099,000	3,164,000	2,962,000	1,703,000	934,000	649,000	504,000	**16,057,000**	45
Collinston	71,000	63,000	84,000	69,000	169,000	428,000	465,000	435,000	263,000	88,000	80,000	82,000	**2,297,000**	20
Harper Ward	717,000	688,000	888,000	768,000	1,938,000	4,408,000	4,031,000	3,782,000	2,154,000	1,248,000	1,145,000	934,000	**22,701,000**	85
	1,308,000	**1,280,000**	**1,591,000**	**1,346,000**	**3,914,000**	**8,520,000**	**8,299,000**	**7,775,000**	**4,423,000**	**2,414,000**	**2,018,000**	**1,675,000**	**44,563,000**	**175**
Institutional														
Beaver Dam	4,000	-	-	-	-	3,000	4,000	1,000	-	1,000	3,000	2,000	**18,000**	1
Industrial														
Collinston	84,000	74,000	87,000	74,000	91,000	117,000	109,000	137,000	138,000	137,000	85,000	87,000	**1,220,000**	3
Commercial														
Bothwell	47,000	54,000	71,000	105,000	160,000	158,000	142,000	201,000	206,000	239,000	235,000	155,000	**1,773,000**	2
Collinston	39,000	33,000	51,000	59,000	57,000	106,000	188,000	383,000	159,000	67,000	22,000	31,000	**1,195,000**	3
Harper Ward	3,000	12,000	11,000	7,000	7,000	21,000	13,000	10,000	14,000	12,000	15,000	13,000	**138,000**	2
South Willard								-	-	10,000	8,000	7,000	**25,000**	1
	89,000	**99,000**	**133,000**	**171,000**	**224,000**	**285,000**	**343,000**	**594,000**	**379,000**	**328,000**	**280,000**	**206,000**	**3,131,000**	**8**

2018 Water Usage by System and by Type

	January	February	March	April	May	June	July	August	September	October	November	December	**Total**	Active Connections
Residential														
Beaver Dam	163,000	153,000	227,000	187,000	443,000	550,000	710,000	612,000	302,000	165,000	151,000	182,000	**3,845,000**	26
Bothwell	355,000	364,000	379,000	696,000	2,059,000	3,261,000	3,484,000	3,545,000	2,293,000	598,000	413,000	366,000	**17,813,000**	45
Collinston	69,000	88,000	74,000	80,000	190,000	446,000	569,000	581,000	320,000	127,000	136,000	128,000	**2,808,000**	27
Harper Ward	741,000	706,000	940,000	1,230,000	2,368,000	4,500,000	4,721,000	4,562,000	3,041,000	1,424,000	1,046,000	952,000	**26,231,000**	87
South Willard				1,000	-	1,000	1,000	1,000	1,000	-	-	1,000	**6,000**	1
	1,328,000	**1,311,000**	**1,620,000**	**2,194,000**	**5,060,000**	**8,758,000**	**9,485,000**	**9,301,000**	**5,957,000**	**2,314,000**	**1,746,000**	**1,629,000**	**50,703,000**	**186**
Institutional														
Beaver Dam	2,000	1,000	2,000	1,000	-	1,000	9,000	215,000	186,000	5,000	2,000	2,000	**426,000**	1
Industrial														
Bothwell										24,000	125,000	5,000	**154,000**	1
Collinston	66,000	87,000	76,000	80,000	119,000	136,000	93,000	101,000	61,000	80,000	77,000	82,000	**1,058,000**	3
	66,000	**87,000**	**76,000**	**80,000**	**119,000**	**136,000**	**93,000**	**101,000**	**61,000**	**104,000**	**202,000**	**87,000**	**1,212,000**	**4**
Commercial														
Bothwell	19,000	20,000	16,000	10,000	14,000	16,000	1,000	-	4,000	5,000	1,000	-	**106,000**	2
Collinston	36,000	33,000	50,000	63,000	59,000	132,000	313,000	320,000	124,000	70,000	18,000	4,000	**1,222,000**	3
Harper Ward	25,000	26,000	34,000	23,000	23,000	58,000	35,000	13,000	10,000	3,000	3,000	2,000	**255,000**	2
South Willard	17,000	21,000	9,000	9,000	11,000	17,000	24,000	24,000	17,000	13,000	110,000	530,000	**802,000**	1
	97,000	**100,000**	**109,000**	**105,000**	**107,000**	**223,000**	**373,000**	**357,000**	**155,000**	**91,000**	**132,000**	**536,000**	**2,385,000**	**8**

2019 Water Usage by System and by Type

	January	February	March	April	May	June	July	August	September	October	November	December	**Total**	Active
Retail														
Beaver Dam	172,000	166,000	246,000	178,000	160,000	348,000	599,000	688,000	271,000	151,000	151,000	176,000	**3,306,000**	26
Bothwell	349,000	330,000	405,000	428,000	1,123,000	2,219,000	3,601,000	3,721,000	1,584,000	577,000	483,000	439,000	**15,259,000**	46
Collinston	119,000	115,000	136,000	127,000	178,000	372,000	608,000	519,000	231,000	191,000	154,000	186,000	**2,936,000**	34
Harper Ward	985,000	916,000	765,000	730,000	1,580,000	2,806,000	4,487,000	4,532,000	1,888,000	693,000	545,000	504,000	**20,431,000**	76
South Willard	1,000	1,000	1,000	2,000	3,000	3,000	4,000	3,000	2,000	2,000	1,000	2,000	**25,000**	1
	1,626,000	**1,528,000**	**1,553,000**	**1,465,000**	**3,044,000**	**5,748,000**	**9,299,000**	**9,463,000**	**3,976,000**	**1,614,000**	**1,334,000**	**1,307,000**	**41,957,000**	**183**
Institutional														
Bothwell	-	-	-	-	-	-	-	7,000	-	58,000	93,000	-	**158,000**	1
Collinston	69,000	69,000	67,000	54,000	75,000	101,000	77,000	81,000	93,000	106,000	117,000	125,000	**1,034,000**	3
	69,000	**69,000**	**67,000**	**54,000**	**75,000**	**101,000**	**77,000**	**88,000**	**93,000**	**164,000**	**210,000**	**125,000**	**1,192,000**	**4**
Industrial														
Beaver Dam	2,000	1,000	3,000	1,000	2,000	2,000	60,000	66,000	2,000	1,000	1,000	2,000	**143,000**	1
South Willard					6,000	-	3,000	6,000	7,000	5,000	23,000	3,000	**53,000**	1
	2,000	**1,000**	**3,000**	**1,000**	**8,000**	**2,000**	**63,000**	**72,000**	**9,000**	**6,000**	**24,000**	**5,000**	**196,000**	**2**
Commercial														
Bothwell	-	-	7,000	12,000	9,000	4,000	-	-	-	1,000	-	-	**33,000**	2
Collinston	1,000	2,000	3,000	4,000	15,000	82,000	147,000	155,000	64,000	14,000	12,000	11,000	**510,000**	3
Harper Ward	3,000	1,000	12,000	12,000	4,000	5,000	8,000	12,000	5,000	10,000	3,000	1,000	**76,000**	2
South Willard	32,000	9,000	14,000	11,000	15,000	16,000	18,000	32,000	35,000	13,000	15,000	10,000	**220,000**	1
	36,000	**12,000**	**36,000**	**39,000**	**43,000**	**107,000**	**173,000**	**199,000**	**104,000**	**38,000**	**30,000**	**22,000**	**839,000**	**8**

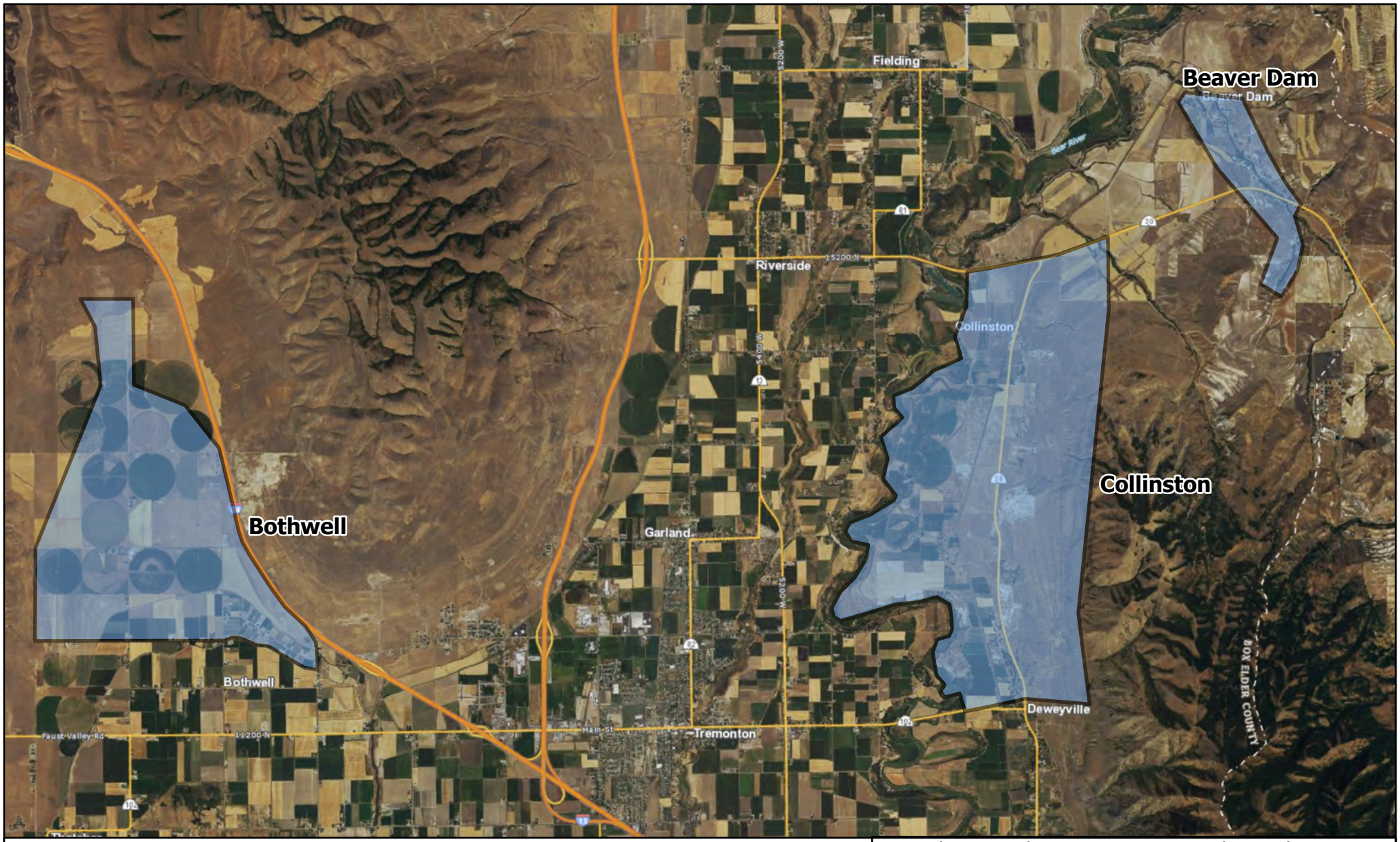
2020 Water Usage by System and by Type

	January	February	March	April	May	June	July	August	September	October	November	December	**Total**	Active Connections
Retail														
Beaver Dam	257,000	386,000	243,000	234,000	362,000	406,000	548,000	603,000	374,000	249,000	194,000	188,000	**4,044,000**	26
Bothwell	489,000	433,000	445,000	1,238,000	2,772,000	2,363,000	3,706,000	3,209,000	2,470,000	1,347,000	709,000	785,000	**19,966,000**	46
Collinston	193,000	124,000	156,000	208,000	542,000	556,000	1,064,000	970,000	671,000	473,000	176,000	188,000	**5,321,000**	44
Harper Ward	519,000	462,000	553,000	1,341,000	3,150,000	2,749,000	4,564,000	3,978,000	2,704,000	1,546,000	684,000	718,000	**22,968,000**	87
South Willard	1,000	2,000	1,000	3,000	5,000	6,000	6,000	8,000	5,000	4,000	3,000	5,000	**49,000**	1
	1,459,000	**1,407,000**	**1,398,000**	**3,024,000**	**6,831,000**	**6,080,000**	**9,888,000**	**8,768,000**	**6,224,000**	**3,619,000**	**1,766,000**	**1,884,000**	**52,348,000**	**204**
Institutional														
Bothwell	-	-	-	-	-	-	-	-	-	31,000	71,000	4,000	**106,000**	1
Collinston	112,000	78,000	68,000	60,000	72,000	77,000	84,000	31,000	50,000	61,000	58,000	66,000	**817,000**	3
	112,000	**78,000**	**68,000**	**60,000**	**72,000**	**77,000**	**84,000**	**31,000**	**50,000**	**92,000**	**129,000**	**70,000**	**923,000**	**4**
Industrial														
Beaver Dam	2,000	1,000	-	1,000	-	1,000	15,000	18,000	12,000	1,000	1,000	1,000	**53,000**	1
South Willard	5,000	3,000	6,000	1,000	3,000	6,000	9,000	10,000	-	-	-	-	**43,000**	1
	7,000	**4,000**	**6,000**	**2,000**	**3,000**	**7,000**	**24,000**	**28,000**	**12,000**	**1,000**	**1,000**	**1,000**	**96,000**	**2**
Commercial														
Bothwell	-	-	1,000	3,000	4,000	3,000	6,000	3,000	1,000	-	-	1,000	**22,000**	2
Collinston	15,000	20,000	48,000	61,000	155,000	141,000	247,000	217,000	211,000	241,000	191,000	254,000	**1,801,000**	3
Harper Ward	2,000	2,000	3,000	2,000	2,000	4,000	3,000	3,000	3,000	4,000	2,000	1,000	**31,000**	2
South Willard	11,000	10,000	12,000	15,000	15,000	17,000	18,000	18,000	13,000	25,000	11,000	10,000	**175,000**	1
	28,000	**32,000**	**64,000**	**81,000**	**176,000**	**165,000**	**274,000**	**241,000**	**228,000**	**270,000**	**204,000**	**266,000**	**2,029,000**	**8**

2021 Water Usage by System and by Type

	January	February	March	April	May	June	July	August	September	October	November	December (not yet reported)		Active Connections
Retail														
Beaver Dam	147,000	152,000	157,000	231,000	369,000	662,000	581,000	301,000	286,000	190,000	130,000	-	**3,206,000**	30
Bothwell	612,000	556,000	616,000	1,263,000	2,110,000	2,674,000	2,144,000	1,293,000	1,136,000	858,000	1,012,000	-	**14,274,000**	51
Collinston	166,000	159,000	178,000	306,000	652,000	1,421,000	1,096,000	694,000	712,000	331,000	233,000	-	**5,948,000**	55
Harper Ward	552,000	548,000	603,000	1,065,000	2,256,000	3,842,000	3,532,000	2,470,000	2,404,000	859,000	559,000	-	**18,690,000**	89
South Willard	4,000	3,000	4,000	4,000	4,000	6,000	3,000	3,000	4,000	3,000	4,000		**42,000**	1
	1,481,000	**1,418,000**	**1,558,000**	**2,869,000**	**5,391,000**	**8,605,000**	**7,356,000**	**4,761,000**	**4,542,000**	**2,241,000**	**1,938,000**	-	**42,160,000**	**226**
Institutional														
Bothwell	-	-	-	-	-	-	-	-	-	76,000	68,000	-	**144,000**	2
Collinston	57,000	59,000	75,000	77,000	75,000	84,000	88,000	90,000	95,000	50,000	74,000	-	**824,000**	3
	57,000	**59,000**	**75,000**	**77,000**	**75,000**	**84,000**	**88,000**	**90,000**	**95,000**	**126,000**	**142,000**	-	**968,000**	**5**
Industrial														
Beaver Dam	-	1,000	-	2,000	1,000	3,000	4,000	3,000	2,000	1,000	1,000		**18,000**	1
South Willard	-	-	-	-	-	-	-	1,000	20,000	4,000	2,000		**27,000**	1
	-	**1,000**	**-**	**2,000**	**1,000**	**3,000**	**4,000**	**4,000**	**22,000**	**5,000**	**3,000**	-	**45,000**	**2**
Commercial														
Bothwell	5,000	12,000	20,000	21,000	1,000	-	1,000	19,000	196,000	262,000	205,000	-	**742,000**	2
Collinston	182,000	187,000	225,000	241,000	286,000	441,000	413,000	308,000	278,000	264,000	256,000	-	**3,081,000**	3
Harper Ward	1,000	3,000	6,000	12,000	3,000	4,000	28,000	6,000	5,000	4,000	5,000	-	**77,000**	2
South Willard	9,000	9,000	12,000	12,000	12,000	15,000	16,000	15,000	15,000	14,000	12,000		**141,000**	1
	197,000	**211,000**	**263,000**	**286,000**	**302,000**	**460,000**	**458,000**	**348,000**	**494,000**	**544,000**	**478,000**	-	**4,041,000**	**8**

BRWCD System Service Areas



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0 1 2 4 Miles

Disclaimer: These service areas show what areas the Bear River Water Conservancy District currently has the ability and infrastructure to serve water to. As development progresses and systems are built out, these service areas are subject to change.

BRWCD System Service Areas

Disclaimer: These service areas show what areas the Bear River Water Conservancy District currently has the ability and infrastructure to serve water to. As development progresses and systems are built out, these service areas are subject to change.