



2020 Water Conservation Plan

Richmond City

90 South 100 West

Richmond, UT 84333

Date: September 22, 2020

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Description of Richmond City and Its Water System

Purpose

Richmond, Utah, located in Cache Valley along US Highway 91, approximately 4 miles from the Utah/Idaho border, has a population on the rise. As of 2020, Richmond City's population is estimated at 2,800, consisting of approximately 849 housing units. The average household includes 3.2 people, with 76% of households being comprised of families. From 2009 to 2018, Richmond City gained around 281 new residents. The data show an 11.5% growth rate for those nine years. Estimates anticipate growth will continue at approximately 15% per decade into 2030, which would add at least 300 more residents by that time (David Eccles School of Business/ The University of Utah, 2018) (US Census Bureau, 2020) (Bear River Association of Governments, 2019).

Richmond is getting slightly older and more diverse. If Richmond City follows the trends of Cache County as a whole, those 55 and older will become a more significant portion of the total population by 2035. In Cache County during the year 2018, older adults made up 13.7% of the total population. By 2035 they are expected to make up 16% of the total population; by 2065 they will likely make up 18.2%.

Additionally, Richmond City is slowly becoming more diverse. Minority groups, which made up around 10% of the population in 2000, now make up over 16% of the population. Of that, those with Latino origins are leading all minority groups as of 2017 at 10.5%. Future housing will need to address the unique character of residents, including the growing number of older adults and Latinos.

This water conservation plan is to identify conservation opportunities that align with Richmond City's conservation goals. Richmond City is a community of 2,800; with projections as high as 4,754 residents by the year 2060, water conservation is even more critical in mitigating the demand on Richmond City's water system (Bear River Association of Governments, 2019).

Council Approval – September 22, 2020

Population

Richmond’s population as of the 2010 Census was 2,470. It is not easy to offer a projected estimate of our future population with any degree of accuracy. Richmond City does not actively seek annexation of additional lands; much of the eastern portion of the current city limits is on a hillside too steep to develop safely and has limited availability to supply culinary water. With these factors in mind and considering that the Governor’s Office estimates have consistently been much higher than actual numbers, we submit the following growth figures based on the historic 11.5% growth that Richmond has experienced over the past 10 years (David Eccles School of Business/ The University of Utah, 2018).

Historic Calculation	
Year	Estimated Population
2020	2,836
2025	3,025
2030	3,226
2035	3,441
2040	3,669
2045	3,903
2050	4,158

Richmond realizes that it is only a matter of time before the city sees an increase in growth. As the Wasatch Valley’s growth continues to move north into Cache County, the increase will push into Richmond and the neighboring areas. Based on the David Eccles School of Business/University of Utah the growth rate for Cache Valley is 1.8%, population projections show an increase to 4,843 by the year 2050 (David Eccles School of Business/ The University of Utah, 2018):

Kem C. Gardner Policy Institute	
Year	Estimated Population
2020	2,836
2025	3,101
2030	3,390
2035	3,706
2040	4,052
2045	4,430
2050	4,843

Total Culinary Water Connections

As of December 31, 2019, Richmond services 880 total water connections (Utah Division of Water Rights, 2020):

Year	Residential	Commercial	Industrial	Institutional	Total Connections	ERC Value
2019	830	28	4	18	880	1870
2018	826	28	4	18	876	2011.98
2017	840	25	1	4	870	2401.72
2016	799	24	2	15	840	1276.18
2015*	770	24	2	9	805	2260.34
2014	747	16	2	9	790	2825.62
2013	749	14	2	9	789	2436.4
2012	741	22	1	9	787	3658.28
2011	729	21	2	9	775	2023.75
2010	726	21	2	9	772	2092.32
2009	736	21	2	8	781	2073.03
2008	727	17	1	8	770	2131.12
2007	717	17	1	8	757	1333.8
2006	667	19	1	8	707	1117.91
2005	658	17	1	9	694	3798.09
2004	648	18	1	9	685	1903.37
2003	617	19	0	8	649	1940.81
2002	615	17	0	7	656	3146.6
2001	660	17	0	6	686	3464.25
2000	594	11	0	6	612	1511.38
1999	550	37	10	5	603	980.26

*Information on Utah Division of Water Rights is incorrect so this year's data has been adjusted to reflect the accurate number of hook ups.

Total Culinary Water Supply

Richmond’s culinary water supply is from a series of springs and two wells, one well of which is for emergency use only and the other as the city’s supplemental well (Utah Division of Water Rights, 2020).

Year	Status	2019	2018	2017	2016	2015
Boulder Spring		0	0	0	0	0
Cherry Canyon Springs (WS001)		740.41	722.32	658.54	651.24	675.03
Cherry Creek Well		597.74	171	349.05	28.72	0
City Canyon Springs (WS002)		75.52	72.59	72.81	81.28	67.76
Dairy Well		0	0	0	0	31.89
Pine Spring		0	0	0	0	0
Ranger Spring		0	0	0	0	0
Existing 12', 150 feet deep Well	Inactive	0	0	0	0	0
Proposed Well (8', 150' to 450')	Inactive	0	0	0	0	0
Proposed Well 2 (8', 150-450')	Inactive	0	0	0	0	0
Spring	Inactive	0	0	0	0	0
Surface Source	Inactive	0	0	0	0	0
Well (16')	Inactive	0	0	0	0	0
Total Per Year		1,413.67	965.91	1,080.40	761.25	774.68

Projected Needed Supply: 885,531,000 gallons

Current Per Capita Per Day Usage (GCPD): is approximately 291.9 gallons based upon total usage. Richmond hosts two public schools as well as high-use industrial and agricultural users. Looking at only residential users, the GCPD is 122.9.

Conservation Goals: meter all the currently un-metered water used by the city and continue to maintain all meters and keep them in good working order. Richmond has replaced and upgraded meters as needed and as budget allows. Richmond has updated all touch read meters to radio-read meters.

Replacement of meters with new, radio-read meters: Richmond has replaced 100% of the old-style touch read meters to radio-read meters. In 2019 Richmond switched from the positive displacement meters to velocity meters to capture water usage at lower flows.

Current Culinary Water Price Schedule:

Usage	Amount	Price
Residential/Commercial	Base 10,000 gallons	\$60.00*
Residential/Commercial	10,001 – 100,000	\$1.00 per 1,000 gallons
Residential/Commercial	100,000+	\$2.00 per 1,000 gallons

*Per ordinance, the base rate is increased by \$1.00 annually on July 1st.

Current Water Conservation Plan, as per Ordinance 2014-6, seems to be working as anticipated since we have seen the GPCD drop from 127 to 123.

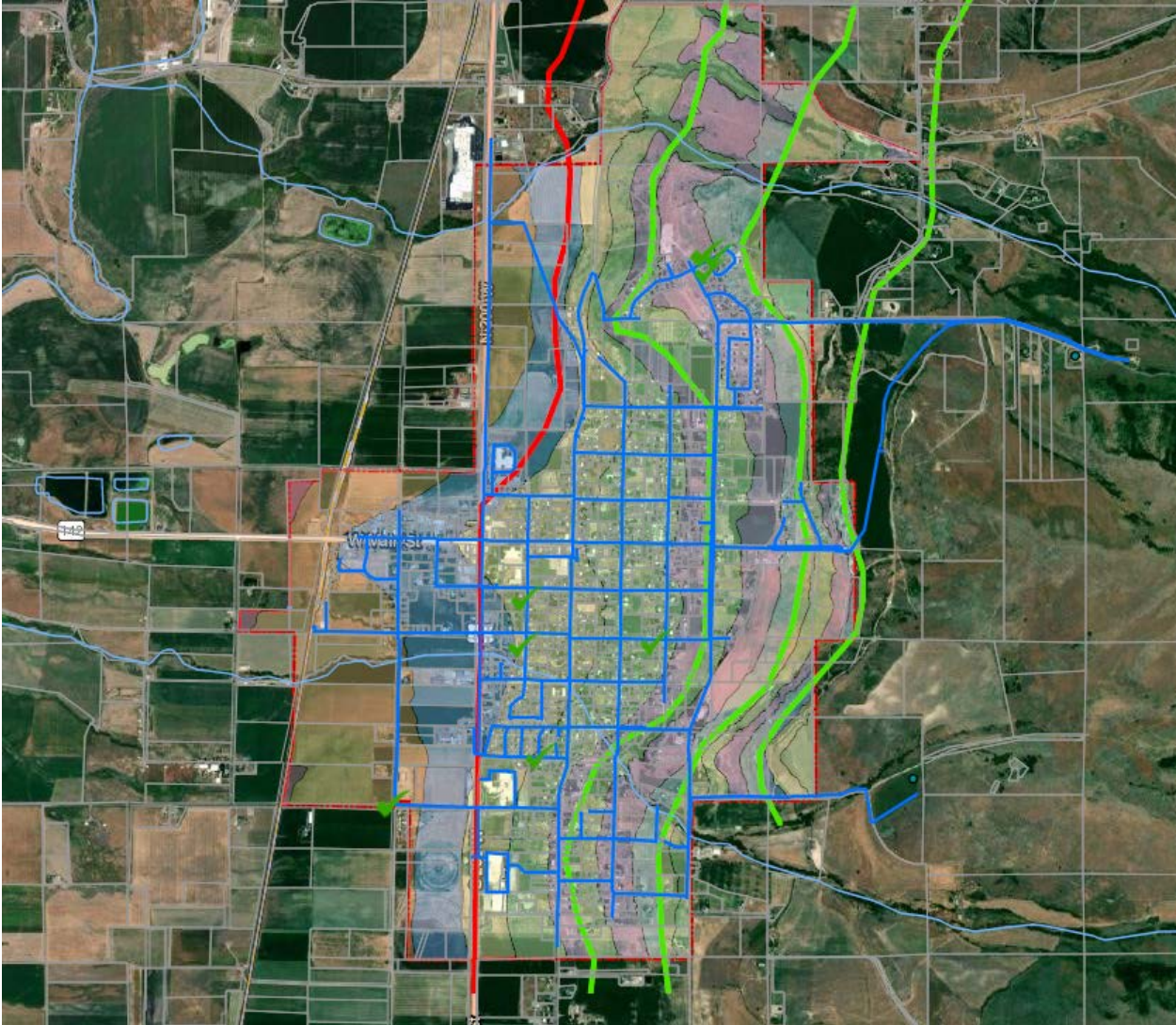
Active conservation measures currently in place consist of educating the public to water during nighttime hours and water-wise landscaping ideas through the utilization of the city newsletter, city website, and social media.

Water Conservation coordinator: Richmond does not have a specified Water Conservation Coordinator on staff. Richmond has minimal staff, and therefore the City Administrator is acting as the *ad hoc* coordinator without appointment.

Proposed Best Management Practices:

- Radio-read meters will be added to current un-metered users, primarily City facilities.
- Continue efforts to resolve secondary water share attachments to specific properties through the Richmond Irrigation & Power Company.
- Richmond will continue active efforts to move toward “purple pipe” effluent water from our Membrane Bioreactor (MBR) wastewater treatment plant into the culinary water system via water swap with the Richmond Irrigation Company (Utah Department of Natural Resources, 2017).

Map of Service Area



Summary

- The Richmond City Culinary Water system services residences, public schools, businesses, public buildings, and agricultural endeavors within the city limits. The delivery system was essentially replaced in a 1993 water project with a second major water project 2012 to 2015.
- The City Maintenance Department consists of an entire staff of three full-time and one part-time member. They are responsible for all infrastructure and surface (lawns, buildings, streets, roads, sidewalks, water, wastewater, etc.) maintenance requirements and are not dedicated to only culinary water support.
- We follow all best management practices feasible considering our size, staffing limitations, and financial obligations.
- A chlorine-gas system is used for disinfection, and Richmond does not utilize any fluoridation. Chlorine residuals are measured a minimum of three times per week in a minimum of three separate and disparate locations.

Secondary Water

- The Richmond Irrigation & Power Company, a private company, is the sole proprietor of a combination canal/pressurized pipe secondary water system which services a large area, including Richmond City. The city owns 80.5 shares in the Richmond Irrigation & Power Company, but this is an insignificant number compared to the typical outlying farmers. They may hold shares in the mid- and high hundreds of shares.
- Richmond City endeavors to develop means by which irrigation water remains associated with land being developed by residential development; however, Richmond Irrigation & Power Company bylaws place considerable restrictions on what the city can do. An on-going dialogue continues on this issue but the City cannot take into consideration secondary water application when computing our future water availability, demand, and conservation (Richmond Irrigation Board, 2018).

FINANCIAL CONSIDERATIONS:

- Richmond City is essentially “maxed out” in the area of funding. Federal and State mandates over the past ten years have placed the City into a position where we are paying off approximately 10 million dollars in bonds - half of that amount being for a water improvement project related to adequate fire flow. The balance of our financial obligation is for a mandated wastewater treatment plant (MBR) that has been online for 10 years. Keep in mind that these financial obligations are applied to a current population of 2,800 people with approximately 880 water hook-ups.
- One of the real problems facing Richmond is how to encourage the conservancy of water while still selling enough to generate the funds to pay off our obligations

PROJECTED NEEDS:

- Richmond City tasked our contract engineering firm, J.U.B. Engineers, Inc., to conduct a study and develop a Water Master Plan. Under this plan, Richmond will be close to our buildout limit by 2040 (J.U.B. Engineers, Inc., 2011).
- Recognizing such planning is “looking through a crystal ball darkly” at best, Richmond estimates that by 2040 the service area would require 2,808,000 gallons of culinary water per day on average, with a peak service demand of 5,616,000 gallons of culinary water per day. These figures assume that all future outdoor watering will be through secondary irrigation water, which is a risky presumption at best.

CONSERVATION:

- Richmond City, on an annual basis, places water conservation notices in *The Richmond Record*, a local newsletter that emailed and posted online monthly. We often refer to the study conducted by Utah State University’s Water Laboratory, which lists the optimum watering for this area over the regular watering season (Utah State University, n.d.).
- We consistently request that citizens NOT use culinary water out of doors between the hours of 10 a.m. and 6 p.m. That being said, it is challenging to effectively monitor compliance to this request since the Richmond Irrigation & Power Company water turns are on daily or partial day usage resulting in citizens using the secondary water during the heat of the day since that is their “turn.” Anyone familiar with the history of water usage in Utah since 1847 is conversant with the issue.
- The issuance of this plan is a “best-effort” situation. Still, it should be noted that the introduction of a significant industry or other business can drastically change the dynamics involved in developing our “best estimate, best goal” work.

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