

**RICHMOND CITY WATER CONSERVATION PLAN
SUMMARY
As Authorized by Richmond City Ordinance 2014-6**

1. Population per 2010 Census - 2,470

a. **Projected population increase:** It is difficult 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 hillside too steep to safely develop, and we are limited on available culinary-level water supplies. 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:

Year	Estimated Population
2019	2,595
2024	2,855
2029	3,465
2034	3,985
2039	4,595
2044	5,376
2050	6,451

2. **Total culinary water connections** as of December 31, 2013 with **average use per day** in thousands of gallons.

Type	Total Connection	Total Annual Usage in Thousand Gallons	Average/Day in Thousand Gallons
Residential	749	123,021	0.45
Commercial	14	1,861	0.36
Industrial	2	12,137	16.63
Institutional	9	8,737	2.66
Dairy/Feed Lot	5	12,057	6.6
City/Unmetered	10	242,358	66.4

3. **Total culinary water supply** is from a series of springs supplemented upon need by one well. A second well is currently unusable due to turbidity. A third, unpermitted, well is currently under development but no flow data is yet available. Complying with Homeland Security recommendations, exact water sources will not be listed in this document. At this point the **average annual spring source** supply was 392,232 thousand gallons, and the sole **operating well** 7,939 thousand gallons for a **total** of **400,171** thousand gallons.

a. On-going current annual figures can be obtained from the Water Use Report submitted to the Division of Water Rights each year.

4. Currently **projected per annum water supply** is estimated to be:

a. Springs - 395,000 thousand gallons.

b. Current Operating Well - 155,431 thousand gallons

c. New Well - (allocated, unverified) - 335,100 thousand gallons.

d. Inactive Well (turbidity) subject to future diversion request - Unevaluated since turbidity prevented the operation of the well for the required amount of time and casing has since been removed.

5. **Projected needed supply:** 885,531 thousand gallons.

6. **Current per capita per day** is approximately 443.9 gallons based upon total usage; however, this figure is skewed since we host three public schools as well as high-use Industrial and Agricultural users. **Using only the residential figures, the gcpd is reduced to 136.5** which compares favorably (although higher) to the 2010 State average of 127 gpcd.

7. **Conservation goals:** Meter all of the currently un-metered water being used primarily by the City; Reduce residential consumption by an average of one quarter of one percent (.0025) per annum with annual meter usage comparisons.

8. **Continue replacing meters with new, radio-read meters** - about 50% have been replaced, all new connections are using radio-reads and goal is to replace at least 200 meters per annum. Radio-read meters have the capability of alerting the City to possible post-meter leaks.

9. Current culinary water price schedule:

Usage	Amount	Price
Residential	Base 10,000 gallons	\$54.00*
Residential	10,001 - 75,000	\$0.85 per 1,000
Residential	75,001 - 100,000	\$0.90 per 1,000
Residential	100,001 - up	\$1.00 per 1,000
Usage	Amount	Price
Commercial, Industrial, Public Buildings, Agriculture	Base 10,000	\$54.00*
Commercial, Industrial, Public Building, Agriculture	10,001 - 75,000	\$0.85 per 1,000
Commercial, Industrial, Public Building, Agriculture	75,001 - 500,000	\$0.90 per 1,000
Commercial, Industrial, Public Building, Agriculture	500,001 - 1,000,000	\$1.25 per 1,000
Commercial, Industrial, Public Building, Agriculture	1,000,001 - up	\$1.50 per 1,000

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

10. **Current Water Conservation Plan per Ordinance 2009-3** appears to be working as indicated by the anticipated 2014 gpcd was 162 versus our actual 127.

11. **Active conservation measures currently in place** consist of the City watching the watering times of public lawns and periodical conservation articles in the City newsletter. Unable to ascertain if the newsletter articles are having any positive effect.

12. **Public education programs** utilizing the local public schools have ceased since the State Legislature has been micro-managing education with the intended or unintended consequence of eliminating any “spare” time that in the past could be utilized for water conservation assemblies, etc.

13. **Water Conservation Coordinator:** We do not have a specified Water Conservation Coordinator on our staff which consists of five employees - a part-time City Manager, a part-time Treasurer, a Superintendent of Maintenance and two other full-time maintenance employees. The City Manager is acting as the *ad hoc* coordinator without appointment.

14. **Proposed BMP's:** All meters will be radio-read; Meters will be added to currently un-metered users, primarily City facilities; Continued efforts will be made to resolve secondary water share attachments to specific properties through the Richmond Irrigation Company; Active efforts will continue to "purple pipe" effluent water from our MBR wastewater treatment plant into the culinary system via water swap with Richmond Irrigation Company.

15. This Water Conservation Plan was reviewed and approved by Ordinance 2014-6 by the Richmond City Council on November 18, 2014. (Attached.)

ELABORATION OF SUMMARY

OVERVIEW:

1. 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 on-going water project 2012 to date.
2. The City Maintenance Department consists of total staff of three full-time and one part-time member. They are responsible for all infrastructure and surface (lawns, building, streets, roads, sidewalks, etc.) maintenance requirements and are not dedicated to only culinary water support.
3. We follow all best management practices feasible considering our size, staffing limitations, and financial obligations.
4. A chlorine-gas system is used for disinfection, and we do not utilize any floridation. Chlorine residuals are measured a minimum of three times per week in a minimum of three separate and disparate locations.

SECONDARY WATER:

1. The Richmond Irrigation 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 fifty shares in the Richmond Irrigation Company but this is an insignificant number compared to the typical outlying farmer who may own shares in the mid- and high-hundreds of shares.
2. Richmond City endeavors to develop means by which irrigation water remains associated with land being developed by residential development; however, Richmond Irrigation Company by-laws 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.

FINANCIAL CONSIDERATIONS:

1. Richmond City is essentially “maxed out” in the area of funding. Federal and State mandates over the past ten years have placed us into a position where we are paying off nearly \$10 million dollars in bonds - just over half of that amount being for a water improvement project related to adequate fire flow that is currently in the final stages. (The balance of our financial obligation is for a mandated wastewater treatment plant [MBR] that has been on-line for five years.) Keep in mind that these financial obligations are being applied to a current population of 2,500 people with approximately 700 water hook-ups.
2. One of the realistic problems faced is how to encourage the conservancy of water while still selling enough to generate the funds to pay off our obligations.

PROJECTED NEEDS:

1. Richmond City tasked our contract engineering firm, J*U*B, to conduct a study and develop a Water Master Plan. Under this plan, Richmond will be close to our buildout limit by 2040.
2. Recognizing such planning is “looking through a crystal ball darkly” at best. It is estimated that by 2040 the service area will 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 are based upon the assumption that all future outdoor watering will be accomplished through secondary irrigation water, which is a risky presumption at best.

CONSERVATION:

1. Richmond City, on an annual basis, places water conservation notices in *The Richmond Record*, a local newsletter that is mailed out with the utility billing. We often refer to the study conducted by Utah State University’s Water Laboratory which lists the optimum watering for this area over the normal watering season.
2. 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 extremely difficult to effectively monitor compliance to this request since the Richmond Irrigation Company water turns run on daily or partial day usage. This results in citizens using the secondary water during the heat of the day since that is part of their “turn.” Anyone familiar with the history of water usage in Utah since 1847 is conversant with the issue.
3. The issuance of this plan is a “best effort” situation but it must also be recognized that the introduction of a significant industry or other business can drastically change the dynamics involved in developing our “best estimate, best goal” work.