City of Rifle, Colorado
Utility Department

November 20, 2019

Mr. Kevin Reidy
Colorado Water Conservation Board
1313 Sherman Street, Room 718
Denver, CO 80203

Re: City of Rifle's Water Efficiency Plan

In compliance with §37-60-126 C.R.S, the City of Rifle is submitting its Water Efficiency Plan to the Colorado Water Conservation Board (CWCB) Water Supply Planning Section for your review and approval. Our previous Water Conservation Plan was adopted by City Council and approved by CWCB in 2008. The City's attempt to implement its 2008 Water Conservation Plan was impacted by national economic conditions resulting from the "Great Recession." This resulted in much lower commodity pricing for natural gas which stalled the local economy and resulted in 30%-50% higher costs associated with construction market conditions concurrent with the construction of the City's new Rifle Regional Water Purification Facility (RRWPF). These factors collectively depleted the City's funds and kept staffing levels at a minimum. While staff efforts were focused on constructing and commissioning of the RRWPF, the scheduled 2015 update of the City's Water Efficiency Plan was postponed, then was re-initiated in 2018, and is now being completed in 2019. The seven-year planning period for this Plan is defined as 2019 through the end of 2025, with the next Plan being due in 2026, or seven years from approval of this plan.

This 2019 Water Efficiency Plan (2019 Plan) was prepared cooperatively by City staff and SGM Inc, following the CWCB's guidelines. Our staff committed time and resources to provide data, guidance, and input throughout the development of the City's 2019 Plan. We led the process of selecting water efficiency activities and provided a critical review of the 2019 Plan during the draft and final stages.

Public Review and Approval

The City's public review process consisted of posting the revised Water Efficiency Plan to the City's website and soliciting feedback from the public. The City posted a public notice in the Rifle Citizen Telegram (proof of publication included in **Appendix C**) for two weekly publications on June 6 and June 13, 2019. The draft Plan remained available on the City's website until adoption of the plan on August 21, 2019, remaining available for 76 days, which satisfied the 60-day period required. No public comments were received.

City of Rifle, Colorado
Utility Department

The approval process for the City was established by the City Manager. The City Manager established that the Council would review the revised Plan simultaneously with the public during the public review period, consider comments, make recommendations, and then approve. The City Council approved this plan on August 21, 2019 by a vote of 5 in favor and 0 opposed, with two council members not in attendance, agenda and meeting minutes included behind cover letter.

Thank you for your attention and support in reviewing this Water Efficiency Plan.

Sincerely,

Robert P. Burns

Utility Director
City of Rifle – Utility Department

Wednesday, November 20, 2019

City of Rifle

CITY COUNCIL AGENDA

City Council
Barbara Clifton, Mayor
Theresa Hamilton, Mayor Pro Tem
Joe Carpenter, Councilor
Brian Condie, Councilor
Joe Elliott, Councilor
Ed Green, Councilor
Sean Strode, Councilor

REVISED

City Hall
City Council Chambers
202 Railroad Avenue
Rifle, CO

Cablecast Live on
Comcast Channel 10

Streamed Live at RifleNOW.org

The City of Rifle will make reasonable accommodations for access to City services, programs, and activities and will make special communication arrangements for persons with disabilities. Please call (970) 665-6405 for assistance.

REGULAR MEETING
October 16, 2019

WORKSHOP 6:00 P.M.
COUNCIL CHAMBERS

6:00 P.M. 3rd Budget Workshop with City Council

REGULAR MEETING 7:00 P.M.
COUNCIL CHAMBERS

The City Council may take action on any of the following agenda items as presented or modified prior to or during the meeting, and items necessary or convenient to effectuate the agenda items.

7:00 p.m.	1.	Regular Meeting Call to Order, Pledge of Allegiance, and Roll Call
7:03 p.m.	2.	Citizen Comments (For items not listed as public hearings on the agenda. Please limit comments to 3 minutes.)
7:10 p.m.	3.	Consent Agenda – consider approving the following items: A. Minutes from the August 21, 2019 Regular Meeting B. (*Acting as Liquor Licensing Authority*) Liquor License Renewal for Box I, Inc. dba Jon's Liquors and Lilly's Kitchen Corporation dba Lilly's Kitchen
7:15 p.m.	4.	Action, if any, on Workshop Items (Mayor Clifton)
7:20 p.m.	5.	Presentation on BLM Rifle Arch Trails Plan from Rifle Area Mountain Biking Organization (RAMBO) and Roaring Fork International Mountain Biking Association (RFIMBA)

7:40 p.m.	6.	Appoint Samm Young to Greater Rifle Improvement Team Advisory Board (Nathan Lindquist)
7:45 p.m.	7.	Public Hearing - Willow Ranch Subdivision Final Plat and PUD Rezoning (Brian Rusche) A. Rezoning Willow Ranch from Tourist Commercial (TC) to Planned Unit Development (PUD) - Ordinance No. 17, Series of 2019 B. Willow Ranch Final Subdivision Plan and Final Plat - Ordinance No. 18, Series of 2019
7:55 p.m.	8.	Consider purchase of vehicle for Ground and Facilities Department (Tom Whitmore)
8:05 p.m.	9.	Consider Scalzo Ranch Subdivision Plan and Final Plat – Ordinance No. 15, Series of 2019 – 1st reading and Subdivision Improvement Agreement (Brian Rusche)
8:10 p.m.	10.	Consider North Pasture Subdivision Plan and Final Plat for Filing 6A and Re- subdivision for Filing 6 - Ordinance No. 16, Series of 2019 – 1st reading and Subdivision Improvement Agreement (Brian Rusche)
8:15 p.m.	11.	Consider adopting City of Rifle Strategic Plan (Scott Hahn)
8:25 p.m.	12.	Administrative Reports
8:30 p.m.	13.	Comments from Mayor and Council

The order and times of agenda items listed above are approximate and intended as a guideline for the City Council.

*Next Regular Meeting of Council**: November 6, 2019 at 7:00 p.m.***

RIFLE CITY COUNCIL MEETING

Wednesday, August 21, 2019

REGULAR MEETING

7:00 p.m. * Council Chambers

A regular meeting of the Rifle City Council was called to order at 7:00 p.m. by Mayor Barb Clifton.

PRESENT AT ROLL CALL: Councilors Joe Elliott, Ed Green, Theresa Hamilton, Sean Strode and Mayor Barb Clifton.

Councilor Hamilton moved to excuse Councilor Hostettler and Councilor Carpenter from tonight's meeting; seconded by Councilor Strode.

Roll Call: Yes – Elliott, Green, Hamilton, Strode and Clifton

OTHERS PRESENT: City Manager Scott Hahn, City Clerk Kristy Doll, City Attorney Jim Neu, Rifle Community Television (RCTV) Salvador Tovar-Guzman, Utilities Director Robert Burns, Chief of Police Tommy Klein, Public Works Director Brian Prunty, Civil Engineer Craig Spaulding, Planning Director Nathan Lindquist, Finance Director Michelle Duran, Ron Liston, Leslie Robinson, Tom Scott, Debra Figuroa, Jonathan Godes, and Steve Davis.

CITIZEN COMMENTS
Citizen comments were heard from Grand Valley Citizens Alliance's representative Leslie Robinson encouraging Council participation in the EAB.

At a prior City Council meeting Mary Huffine expressed her concerns about the number of dogs allowed at residences in the City limits and believed it was excessive. After a discussion with Chief Klein regarding the City's current animal code, Council's consensus was they would not be recommending changes to the City's animal code.

CONSENT AGENDA - APPROVE THE FOLLOWING ITEMS:
Consent Agenda – consider approving the following items:

A. Minutes from the July 1, 2019 Regular Meeting
B. (Acting as Liquor Licensing Authority) Liquor License Renewal for Loyal Order of Moose Lodge #1345 dba Loyal Order of Moose Lodge # 1345 and City of Rifle dba Ute Theater and Events Center
C. Amending Rifle Municipal Code with Violation of Bond Conditions - Ordinance No. 10, Series of 2019 – 2nd Reading
D. Changing the Name of Visitor Improvement Fund Advisory Board to GRIT Board - Ordinance No. 9, Series of 2019 – 2nd Reading
E. Adopting 2019 Water Efficiency Plan

F. Garfield County Federal Mineral Lease District Mini-Grant for New Senior Bus to transport Senior Citizens - Resolution No. 13, Series of 2019
G. Garfield County Federal Mineral Lease District Traditional Grant for Fravert Avenue, West 3rd Street and West 5th Street Reconstruction - Resolution No. 12, Series of 2019
H. Convey Deed of Cemetery Space Back to the City of Rifle

Councilor Hamilton moved to approve Consent Agenda Items A through H; seconded by Councilor Green.
Roll Call: Yes – Elliott, Green, Hamilton, Strode and Clifton

RECEIVE PRESENTATION FROM THE CITY OF GLENWOOD SPRINGS WITH REQUEST TO SUPPORT GLENWOOD SPRINGS MINING OPPOSITION – RESOLUTION NO. 15, SERIES OF 2019

A RESOLUTION OF CITY COUNCIL OF THE CITY OF RIFLE, COLORADO OPPOSING THE EXPANSION OF THE TRANSFER TRAIL MINE ABOVE GLENWOOD SPRINGS AND SUPPORTING COUNTY REGULATION OF THE MINE

Glenwood Springs City Manager Debra Figuroa, City Mayor Jonathan Godes, and Councilor Steve Davis shared their concerns with expansion of the Transfer Trail mining operations located above Glenwood Springs on Bureau of Land Management property. The City of Glenwood Springs is requesting support from the City of Rifle in opposing the expansion of the Transfer Trail Mine and supporting local regulation of the mine.

Council requested time to review the resolution and discuss with Councilors Hostettler and Carpenter upon their return. Council requested this resolution will considered at the next scheduled City Council meeting on September 4, 2019.

PUBLIC HEARING – PRELIMINARY PLAN APPROVAL FOR MAJOR SUBDIVISION LOT 10C OF RIFLE RETAIL VENTURES
Mayor Clifton opened the public hearing.

Planning Director Nathan Lindquist stated applicants are requesting approval of the Preliminary Plan for Major Subdivision Lot 10C of Rifle Retail Ventures.

The applicant requests Preliminary Plan approval for a Major Subdivision of Lot 10C of the Rifle Retail Ventures Subdivision 5th Amended Plat. This is the last remaining property of the Rifle Retail Ventures development, originally platted in 2002. Lot 10C is currently vacant and consists of approximately 15.549 acres. The eventual subdivision will create up to eight (8) additional commercial lots with the potential for up to 115,500 square feet of commercial development. The Planning Commission approved the plan with conditions at the May 28, 2019 meeting.

Mayor Clifton closed the public hearing.

Councilor Green moved to approve the Preliminary Plan for Major Subdivision Lot 10C of Rifle Retail Ventures with the 10 conditions outlined in the staff report; seconded by Councilor Hamilton.
Roll Call: Yes – Elliott, Green, Hamilton, Strode and Clifton

CONSIDER AMENDING LIQUOR LICENSE EDUCATION REQUIREMENTS – ORDINANCE NO. 11, SERIES OF 2019 -1ST READING

AN ORDINANCE OF THE CITY OF RIFLE, COLORADO, AMENDING SECTION 6-5-170 OF THE RIFLE MUNICIPAL CODE PERTAINING TO EDUCATION REQUIREMENTS FOR LIQUOR LICENSES

City Clerk Kristy Doll noted that RMC 6-5-170 which pertains to education requirements for liquor licenses needs to be updated to reflect the current practices. The City no longer conducts educational liquor training and adopted Resolution No. 21, Series of 2015 which established education liquor course requirements. Resolution No. 21, Series of 2015 requires educational liquor courses to meet standards for a seller and server training program established by the Colorado Department of Revenue Liquor Enforcement Division and that the trainers of such classes be approved by the Colorado Department of Revenue Liquor Enforcement Division. Staff recommends approval of Ordinance No. 11, Series of 2019.

Councilor Elliott moved to approve Ordinance No. 11, Series of 2019 on its first reading, as presented, and order it to be published as required by Charter; seconded by Councilor Strode.
Roll Call: Yes – Elliott, Green, Hamilton, Strode and Clifton

CONSIDER CONTRACT WITH UNITED COMPANIES FOR 2019 ASPHALT PAVING AND OVERLAY PROJECT

Public Works Director Brian Prunty and Civil Engineer Craig Spaulding stated staff received only one qualified bidder, for the 2019 Asphalt Project. The bid provided by United Companies for a total of $440,904.85 was both below the Engineer estimate and it met the required schedule. This project was not funded for this construction season and will require a Supplemental Budget Appropriation. Staff recommends approval of the contract with United Companies in the amount of $440,904.85, for 2019 Asphalt Paving and Overlay Projects.

Councilor Hamilton moved to approve the contract with United Companies for 2019 Asphalt Paving and Overlay Project in the amount of $440,904.85; seconded by Councilor Green.
Roll Call: Yes – Elliott, Green, Hamilton, Strode and Clifton

CONSIDER APPROVING COLORADO RIVER ENGINEERING FOR DESIGN AND CONSTRUCTION MANAGEMENT OF 3RD STREET & RAILROAD AVENUE RECONSTRUCTION PROJECT

Public Works Director Brian Prunty and Civil Engineer Craig Spaulding presented the design and construction management proposal from Colorado River Engineering for the 3rd Street and Railroad Avenue Reconstruction Project. This project is intended to beautify downtown Rifle while updating the infrastructure. This will be an opportunity to address some much-needed public works improvements, such as new traffic signal masts and controllers, replacement and improvement of storm water structures and expand street side dining. A Supplemental Budget Appropriation in the amount of $172,922 will be necessary to fund this project. Staff requests approval to award this design project to Colorado River Engineering in the amount of $242,922.00.

Councilor Hamilton moved to approve Colorado River Engineering for the design and construction management of 3rd Street & Railroad Avenue reconstruction project in the amount of $242,922.00; seconded by Councilor Strode.
Roll Call: Yes – Elliott, Green, Hamilton, Strode and Clifton

PUBLIC HEARING - CONSIDER APPROVING SUPPLEMENTAL BUDGET APPROPRIATION TO 2019 STREET IMPROVEMENT FUND

A. Resolution No. 14, Series of 2019 - Approving 2019 Amended Budget
B. Ordinance No. 12, Series of 2019 - Approving 2019 Supplemental Appropriation

City Clerk Kristy Doll requested the Public Hearing for the Supplemental Budget Appropriation for 2019 Street Improvement Fund be continued to September 4, 2019, City Council regular meeting.

ADMINISTRATIVE REPORTS
Administrative reports were given by City Manager Scott Hahn, City Clerk Kristy Doll, City Attorney Jim Neu, and Finance Director Michelle Duran.

COMMENTS FROM MAYOR AND COUNCIL
Comments were heard from Councilors Joe Elliott, Ed Green, Theresa Hamilton, Sean Strode and Mayor Barb Clifton.

Meeting adjourned at 8:27 p.m.

Kristy Doll	Barbara Clifton
City Clerk	Mayor

2019 WATER EFFICIENCY PLAN

CITY OF RIFLE
GARFIELD COUNTY, COLORADO

August 2019

Prepared for

202 Railroad Avenue
Rifle, CO 81650
970.665.6400

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ACRONYMS

AF	Acre-Feet
AF/year	Acre-Foot/year (equivalent to 325,828 gal/year)
AWWA	American Water Works Association
BCWTP	Beaver Creek Water Treatment Plant
BOR	Bureau of Reclamation
BPS	Booster Pump Station
CAWCD	Central Arizona Water Conservation District
City	City of Rifle
CO BIP	Colorado Basin Implementation Plan
CWCB	Colorado Water Conservation Board
CWRPDA	Colorado Water Resources and Power Development Authority
CWW	Colorado Water Wise
DMP	Drought Management Plan
DOLA	Department of Local Affairs
DW	Denver Water
EPA	Environmental Protection Agency
EQR	Equivalent Residential Unit
GMWTP	Graham Mesa Water Treatment Plant
gpc	gallons per capita
gpcd	gallons per capita per day
gpm	gallons per minute
HUP	Historic Users Pool
MG	Million Gallons
MGD	Million Gallons per Day
MWDSC	Metropolitan District of Southern California
Plan	Water Efficiency Plan
PRV	Pressure Reducing/Relief Valve
RRWPF	Rifle Regional Water Purification Facility
RWPS	Raw Water Pump Station
SCPP	System Conservation Pilot Program
SNWA	Southern Nevada Water Authority
SRF	State Revolving Loan Funds
SWSI	Statewide Water Supply Initiative
UCRC	Upper Colorado River Commission

1.0 Executive Summary

1.1 Background

A water provider that produces 2,000 acre-feet (AF) or more annually is considered a "covered entity" by the Colorado Water Conservation Board (CWCB) and is required to have a State-approved Water Efficiency Plan (Plan). The preparation of this Plan and the subsequent approval by the CWCB is a pre-requisite for borrowing from the Colorado Water Resources and Power Development Authority (CWRPDA) and for obtaining water efficiency implementation grants from the CWCB.

1.2 Profile

The City of Rifle (City) was incorporated in 1905 and is located on the Colorado River in Western Garfield County, approximately 57 miles east of the City of Grand Junction along Interstate 70 at an elevation of approximately 5,400 feet. The City is a home rule city, municipal corporation, and political subdivision under the provisions of Article XX of the Constitution of the State of Colorado and the City's Home Rule Charter. The City is governed by an elected seven-member council and operated by a City Manager.

The City relies on surface water from the Colorado River. The City's water use is currently below the 2,000 AF threshold; however, they have voluntarily elected to update their existing Plan for the next seven-year planning horizon of 2019 - 2025.

The City experienced major changes in its water supply, treatment, and storage facilities between 2016 and 2018. The Rifle Regional Water Purification Facility (RRWPF), the City's new microfiltration membrane water treatment plant, was brought online in spring and summer of 2017. The City also decommissioned its other water treatment plants, the Beaver Creek Water Treatment Plant (BCWTP) and the Graham Mesa Water Treatment Plant (GMWTP) during this timeframe.

The City's preferred lender for water and wastewater capital projects is the CWRPDA [i.e., State Revolving Loan (SRF) Funds] and approval of this Plan would allow the City to continue applying for loans and avoid any potential loan surcharges.

1.3 Population

The City provides water and wastewater services to an estimated service population of 9,600 to 9,700. Population growth stagnated during the recent recession, 2008 through 2015, but has increased to near pre-recession levels. The City is estimating population growth at a 3% rate for the seven-year planning period of 2019 through 2025.

The City is re-evaluating its water system to understand if it can meet projected water demands. Specific areas of this evaluation include: review of the water rights portfolio and pending water right acquisition opportunities; inclusion of previously unrecognized water demand from marijuana grow operations in its demand numbers; review of assessment methods; and inventory of water infrastructure; to determine how much of the anticipated future water demands can be supported. Previous estimates projected that the existing water supplies could serve a population of 20,000 or more. The previous supply did not account for a drought reserve supply.

1.4 Future Demands

The City developed three demand forecast scenarios as a part of the water efficiency planning process. The Baseline Demand did not include the impact of any water efficiency activities and was based on a constant per capita demand applied to projected population increase. Baseline Demands were estimated based upon the 2018 population and were projected to increase from 1,600 AF/year in 2018 to 1,940 AF/year in 2025.

Two modified demand scenarios were also created: one included the impact of passive water savings only; and the second included both passive and active water savings. Passive savings account for demand reductions achieved when water customers replace old and inefficient fixtures with more water efficient ones, without incentive from the water utility. The 2025 demands with passive savings were projected to be 1,845 AF/year, a 5% reduction from the 2025 Baseline Demand. Active savings accounted for the projected impacts of the City enacting its selected water efficiency activities. The 2025 demands with passive and active savings were projected at 1,740 AF/ year in 2025, an 11% reduction from the 2025 Baseline Demand.

1.5 Efficiency Program

The City's attempt to implement its 2008 Water Conservation Plan was impacted by national economic conditions resulting from the "Great Recession". This resulted in much lower commodity pricing for natural gas which stalled the local economy and resulted in 30%-50% higher costs associated with construction market conditions concurrent with the construction of the RRWPF. These factors combined collectively depleted the City's funds and kept staffing levels at a minimum. Efforts were also focused on constructing and commissioning of the RRWPF. For these reasons, the scheduled 2015 update of the City's Water Efficiency Plan was postponed, was re-initiated in 2018, and is being completed in 2019. The seven-year planning period for this Plan is defined as 2019 through the end of 2025, with the next plan being due seven years from approval of this plan, in 2026.

The City does not have a dedicated water efficiency staff member and does not have the resources to hire this position. However, the current Utilities Director (Robert Burns) has taken on the responsibility of Water Efficiency Coordinator in addition to his other job duties. Mr. Burns provided high-level coordination among the consultants (SGM), the Utilities Department, and other City departments for this Plan Update. It is expected that implementation of water efficiency action items would be shared among many City Departments including Utilities, Planning, Parks and Recreation, Public Works, and the City Engineer.

1.6 Efficiency Planning Process

The City developed this Plan in accordance with the Colorado Water Conservation Act of 2004 so that it is consistent with all statutory requirements while considering the City's current financial circumstances and unpredictable growth rate. The City and SGM used the Colorado Water Conservation Board's *Municipal Water Efficiency Plan Guidance Document (April 2012)* to guide the development of this Plan.

1.7 Stakeholder Participation

This Plan was developed by the Utilities Department using information, guidance, and feedback from multiple City departments. The City also engaged the Planning Commission as the primary stakeholder group for the public outreach and review process as they are leading the Comprehensive Plan updates. The Planning Commission is also responsible for reviewing and creating land use policies and codes, specifically, ones that can benefit the City's water efficiency goals.

The City posted the Draft Plan for Public Review on its website for at least 60 days, complying with the 60-day public comment period requirement. Comments received during the Public Comment period were collected, reviewed, considered, and as appropriate, adopted into the final Plan.

1.8 AWWA Alliance/Multi-Program Benefits

The City is a member of the American Water Works Association (AWWA) Partnership for Safe Water Program, a voluntary effort for water providers to improve performance beyond current regulatory requirements by optimizing treatment plant performance and distribution system operation. The City is in the process of completing the Partnership for Safe Water Phase III Self-Assessment, in which City staff identified several action items that were also selected for implementation in this Water Efficiency Plan, including: conducting a water loss audit, developing a formal water line replacement program and asset management system of water lines, water meter accuracy checks, etc. These actions meet multiple objectives for the City through its partnerships with AWWA and CWCB: optimize operations of the new water treatment plant; provide high quality safe drinking water; and use water efficiently.

2.0 Profile of Existing Water Supply System

2.1 Overview of Existing Water Supply System

The City is located on the Colorado River in Western Garfield County. **Figure 2-1** depicts the general location of the City, its city limits, and water supply streams. **Figure 2-2** provides a simplified schematic of Rifle's water supply system. Note, for security reasons, the City would not be providing a detailed map of its water system.

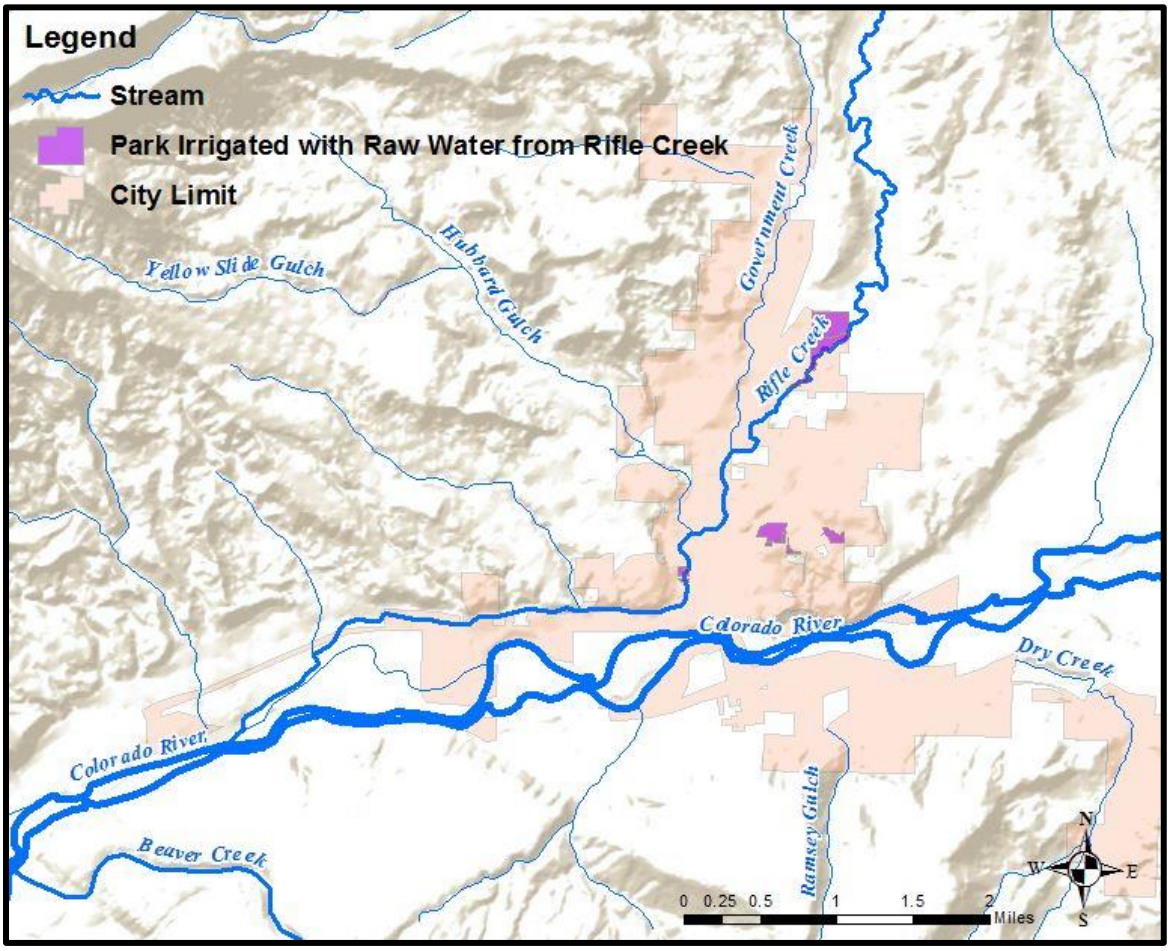

Figure 2-1. City of Rifle Water System Overview

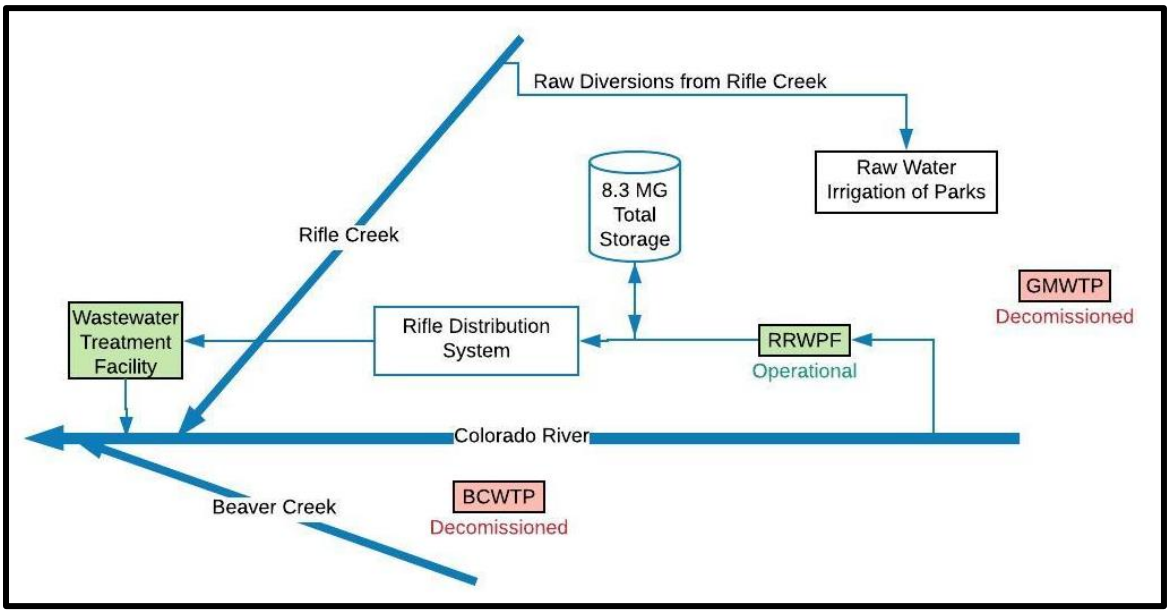

Figure 2-2. City of Rifle Simplified Water System Schematic

The City delivers potable (treated) water to approximately 3,345 customer accounts. Approximately 100 of these accounts are located outside the City limits. The City pumps and treats Colorado River water at its RRWPF. The RRWPF was commissioned in the spring and summer of 2017. The City has six storage tanks and reservoirs located on both sides of the Colorado River that serve multiple pressure zones.

The City also treats wastewater. The City does not reclaim its wastewater, and based upon input received during this project, it is unlikely to incur the debt to implement and sustain a wastewater reclamation facility and distribution system.

The City is a shareholder in various ditch companies. The City diverts water from Rifle Creek to provide irrigation water to its parks. The City also owns several groundwater wells that it does not use for potable purposes.

2.1.1 Potable System Production Facilities

All of the City's potable water is provided by surface water from the Colorado River. Colorado River water is diverted and conveyed through a large pre-sedimentation pond where it is then pumped up to the RRWPF. Once the water is treated it is pumped to a tank complex made up of 5 water tanks located within different parts of the City's service area. The tank complex has a total storage capacity of 8.3 million gallons (MG). Water is delivered to various parts of the distribution system from the tanks. Residuals from the water treatment process are discharged to drying beds on-site at the RRWPF. Water used in backwashing process is recycled to the head of the water purification facility. This process supports the City's water efficiency goals by minimizing water wasted from the treatment plant.

The RRWPF currently has a process capacity of approximately 6 million gallons per day (MGD) and is the City's only active water treatment plant. Buildout capacity is 8 MGD. Addition of another membrane skid would add approximately 2.6 MGD of capacity, though

the plant is design approval limited to 4 MGD per flocculation sedimentation train, for a total capacity of 8 MGD. The pumping capacity is currently limited to 6 MGD, so increasing the capacity to 8 MGD would also require installing additional pumps. The City could eventually expand beyond the 8 MGD buildout capacity by constructing a second adjacent facility, with significant costs.

The City had two water treatment plants before the RRWPF was constructed and commissioned. The GMWTP treated water from the Colorado River and had a capacity of 4.5 MGD. The BCWTP treated water from Beaver Creek. This plant was located on Taughenbaugh Mesa, south of the City, and had a capacity of 0.5 MGD.

2.1.2 Potable Water Distribution Facilities

The City's potable water distribution system consists of about 73 miles of transmission and distribution mains. These distribution mains cover four (northeast, intermediate, city, and airport) pressure zones, which are separated by two booster pump stations (BPSs) and multiple pressure reducing valves (PRVs). All (100%) of the finished water produced by the new RRWPF needs to be pumped. Roughly 20% of the City's current water use requires pumping from its booster stations. The percentage of booster pumping would rise significantly with future development in higher-elevation areas.

2.1.3 Raw Water System Infrastructure

The City also owns and operates raw water delivery facilities to provide irrigation water to Rose Hill Cemetery, Deerfield Regional Park, Centennial Park, Davidson Park and McIntosh Park. These areas are irrigated with Rifle Creek water. Raw water irrigation deliveries are not currently metered.

2.2 Water Supply Reliability

2.2.1 Statewide and Regional Context

Front Range and out-of-state downriver agencies are attempting to develop water from the Colorado River and its tributaries. It is projected that there could be 40 million people using the Colorado River to meet is water needs. The Colorado River partially supports the metropolitan areas of Denver, Las Vegas, Phoenix, Tucson, and Los Angeles, and is used to generate hydropower to the electrical power grid within the western United States.

By 2050, Colorado would need between 538,000 and 812,000 acre-feet per year (AF/year) of additional water to meet municipal demands (CDM, 2011). The municipal and industrial water supply gap projected for 2050 alone is projected to be between 190,000 and 630,000 AF/year. Although the population projections vary across the state, the Front Range river basins would continue to have the largest population in the state with the West Slope growing at a rate faster than these areas. The Colorado River basin is estimated to have a municipal and industrial gap in 2050 of 22,000 to 48,000 AF/year, depending upon the development of water infrastructure and storage projects. Since the Colorado River is one of the few available sources, it is the target of many entities seeking to develop additional supply or to firm-up their existing supply.

Although the City does not presently obtain its water supply from a river segment that is a designated critical water supply shortage area [per the Statewide Water Initiative (SWSI)],

there is intense pressure on the City's Colorado River water source because in a relatively short period of time, it has transitioned from a water source with unused allocations to a source with a forecasted deficit. The Upper Colorado River Commission (UCRC) managed a pilot program that explored the benefits and values that could be obtained from a demand management program within the Colorado River Basin to temporarily conserve water and see if it benefited the delivery of water to Lake Powell. The study was referred to as the System Conservation Pilot Program (SCPP). Four sponsors helped fund this program including: Denver Water (DW), Southern Nevada Water Authority (SNWA), Central Arizona Water Conservation District (CAWCD), and the Metropolitan Water District of Southern California (MWDSC).

2.2.2 Drought Planning Efforts

The purpose of a Drought Management Plan (DMP) is to understand and identify what, if any, redundant water supplies and actions need to be implemented to supply water during water short events. The City's Water Department is writing a DMP. The City's existing municipal code allows the City Manager to regulate the hours, dates, and locations of irrigation and/or prohibit the use of water for any purposes deemed non-essential until the DMP is complete and adopted.

2.2.3 City of Rifle's Water Resources

It has been and would remain, the City's practice to engage the services of a water resources consultant to manage the City's diverse water rights portfolio and augmentation plans. The City's water rights portfolio includes senior water rights on the Colorado River, some of which are protected by the Green Mountain Historic User's Pool (HUP). The reliability of the Colorado River supply is enhanced by an augmentation plan created in 1986 that relies on waters from Rifle Creek and Ruedi Reservoir.

The City's Colorado River water shares are currently sufficient to meet the City's water demands. The City is currently re-evaluating its: water rights; pending water right acquisition opportunities; previously unrecognized water demands from marijuana grow operations; assessment methods; and infrastructure to determine the future maximum population it could support. Previous water projections determined that the City could serve a population greater than 20,000, without the determination of a drought reserve. The City appears to have twice the water supply necessary to support its present population.

2.3 Water Supply-Side Limitations and Future Needs

Worksheet A (**Appendix A**) summarizes the water supply limitations and future needs of the City and how it would address them. The City appears to have twice the amount of water supply necessary to support its present population. Previously identified water supply limitations were associated with the capacity of the BCWTP and GMWTPs. These issues have been resolved with the commissioning of the RRWPF, which has a greater capacity.

3.0 Water Demands and Historical Demand Management

3.1 Demographics and Service Area Characteristics

The City of Rifle provides water and wastewater service to approximately 9,600 to 9,700 people or 3,345 customer accounts. Most of water delivery goes to residential customers (mostly single-family residences), followed by commercial accounts. This number fluctuates monthly, due in part to the high percentage of rental properties. The Department of Local Affairs (DOLA) estimated that 43% of the City's population in 2013 were renters, as compared to the statewide average of 35%. Family households were the fastest growing household type in the City, which is contrary to the State average. Most of the City's customers are within the city limits with some customers in adjacent areas of Garfield County. The City has a low vacancy rate (11%) which did not increase during the recession. The seasonal market in the City is very small, providing a steady estimate of population.

Population growth in the City slowed during the recession from 2008 to 2015 but has recently been climbing. According to a 2013 demographic and economic profile of the City of Rifle provided by DOLA, Garfield County experienced slower growth than the state average from 2010 through 2013. DOLA projected that Garfield County population would grow at rates faster than the Colorado average over the next few decades. This population growth is related to expected growth across all industries but especially retiree generated job growth.

Table 3-1 shows the customer categories as defined by the City's billing system. Customer information is stored with the utility's customer billing system (Caselle®).

Table 3-1. Customer Categories

Residential	Single Family
	Multi-Family
	Senior (80% of base rate)
	Senior MF (80% of base rate)
	Single Family Out-of-City (150% of all In-City rates)
	Multi-Family Out-of-City (150% of all In-City rates)
Commercial	Commercial Regular
	Commercial High
	Commercial Regular Out-of-City
	Commercial High Out-of-City
Other	Hyland Trucking
	Irrigation Only
	Standby

3.2 Historical Water Demands

This section describes historical demands at various places throughout the distribution system (total diversions, water produced at the plant, metered water, non-revenue water, etc.). **Figure 3-1** presents definitions and explains how the different water demands and loss types fit together. For reference, the colors of different types of water demands used in this figure generally correspond to the colors of water used in the graphs presented throughout this report.

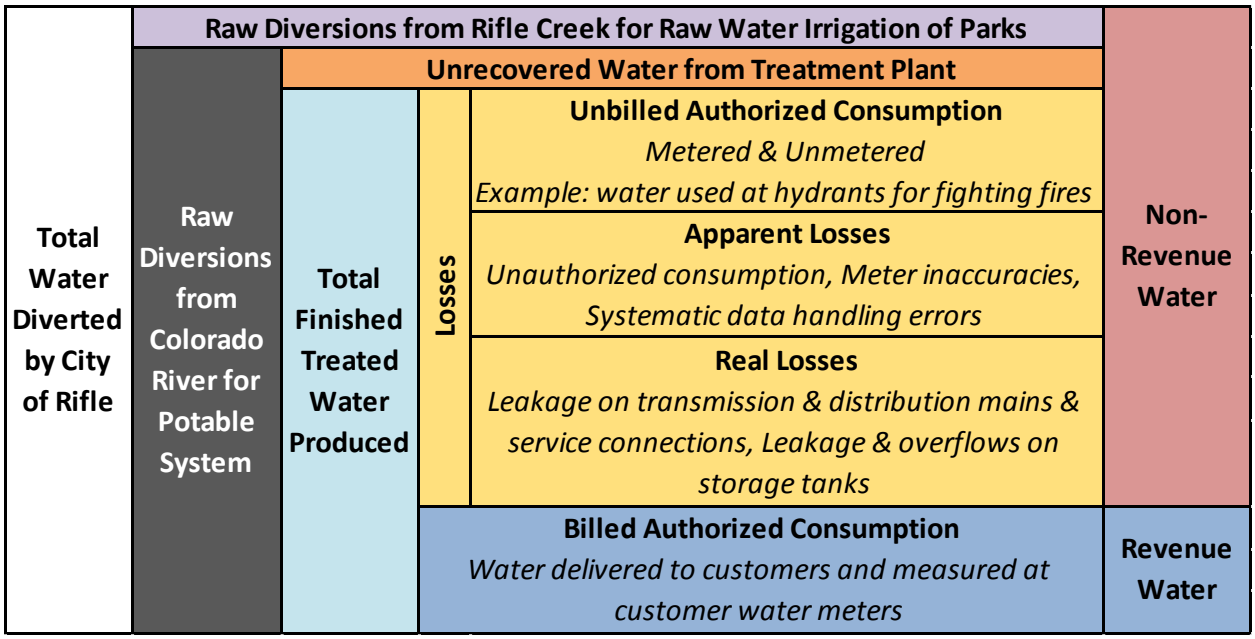

Figure 3-1. Infographic of Rifle Water Demand Types

Historical water demands are based on water production data and metered water delivery data from City of Rifle staff.

3.2.1 Annual Treated Water

Total diversions from the Colorado River for the City's potable system enter the treatment plant and either exit the treatment plant as total finished (treated) water produced or are lost as unrecovered water from the treatment plant. Unrecovered water accounts for any water used up during the treatment process, and may include backwash water, water evaporated from the sludge drying process, etc. **Figure 3-2** shows the total diversions to the water treatment plant, the unrecovered water, and total finished water produced.

A few known issues with the water treatment plant production data are presented below:

- The amount of unrecovered water for 2017 and 2018 is an underestimate. 2018 data is not included because a full year of data was not available at the time of writing this report. The numbers from January through June of 2018 show a water gain in 2018, rather than unrecovered water lost.
    - This is because the new RRWPF uses backwash water even when the plant is off, which leads to the recorded numbers showing negative losses in 2018. Staff are working to fix this problem and get accurate numbers from the meters. However, staff know that the percentage of unrecovered water from the new RRWPF is significantly lower because the plant's design uses less water; staff estimate it at 2% based on the design of the plant.

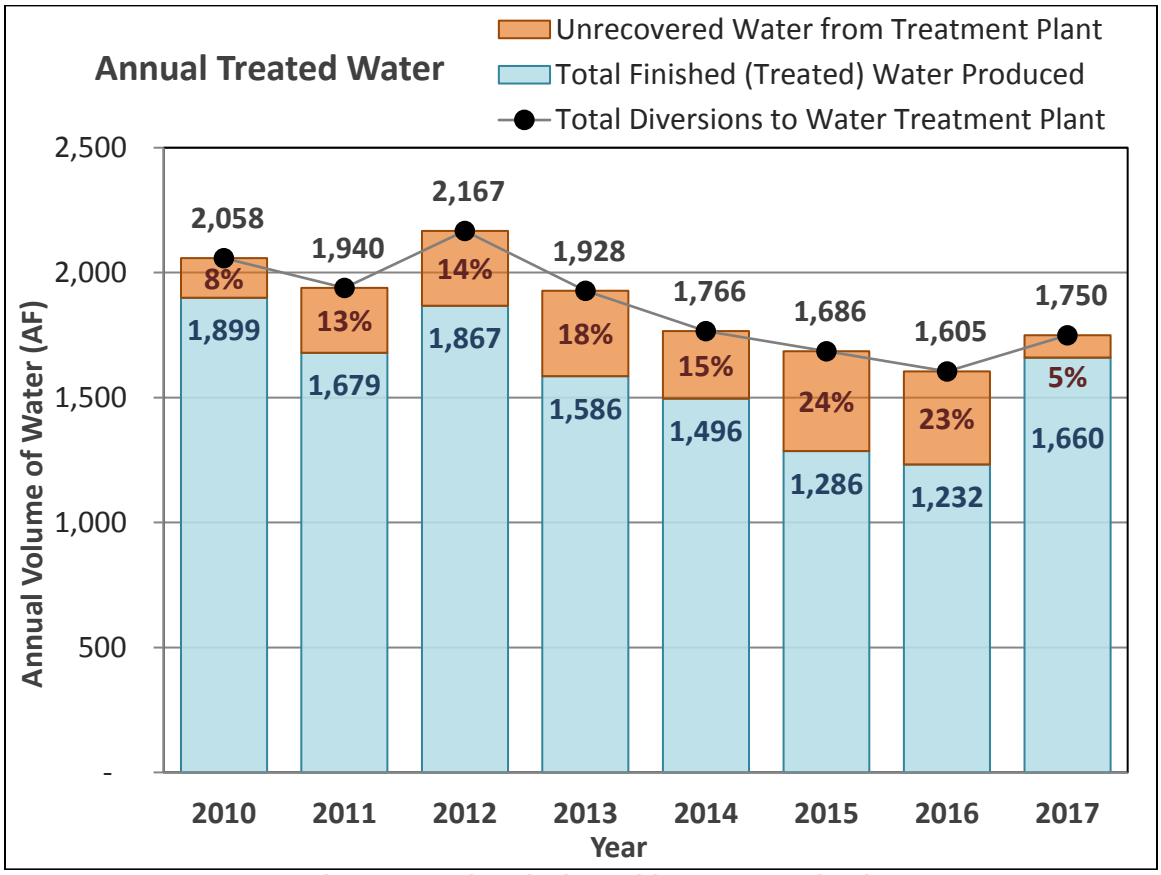

Figure 3-2. Historical Potable Water Production

- The total finished water produced in 2015 and 2016 was estimated. The unrecovered water for 2015 and 2016 is likely an overestimate.
    - The GMWTP meter that was measuring total water produced broke in 2015 and was not fixed because the plant was scheduled to be decommissioned. Instead, total finished water produced was estimated based on the metered water entering the plant and an estimated typical percentage of unrecovered water. It is likely that the unrecovered water in 2015 and 2016 is an overestimate, based on numbers from previous years.

3.2.2 Annual Raw Water

The City provides raw irrigation water from Rifle Creek to Rose Hill Cemetery, Deerfield Regional Park, Centennial Park, Davidson Park and McIntosh Park. These parks are irrigated from the beginning of May through the end of September. Raw water delivery to the parks are not metered but are estimated based on the park area and irrigation practices, which are consistent from year to year (**Table 3-2**). **Figure 3-3** shows the historical annual demands for treated water and raw water.

Table 3-2. Estimated Annual Volume of Raw Irrigation Water Applied

	Rose Hill Cemetery	Deerfield Park	Centennial Park	Davidson Park	McIntosh Park	Total Raw Irrigation
Acres Irrigated	9	48	6	3	1	67
Raw Demand* (AF/yr)	16.4	87.5	10.9	5.5	1.8	**122.2**

*Assumes each park is irrigated at 0.143 in/day for 153 days per year (May 1st -Sept 30).

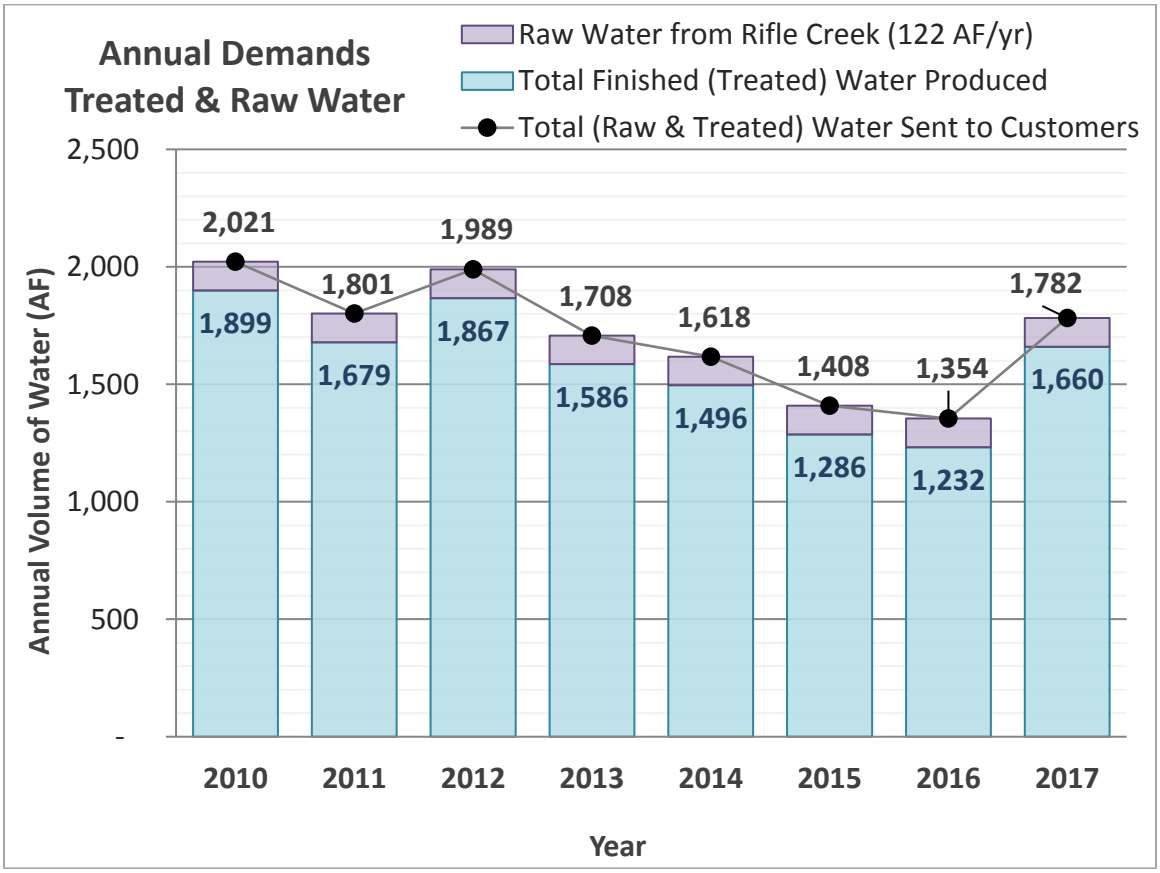

Figure 3-3. Annual Demands for Treated and Raw Water

3.2.3 Indoor and Outdoor Water Demands

Indoor and outdoor water use are not metered separately, therefore these values were calculated from monthly water use data recorded from 2010-2017. Total water deliveries are measured monthly by the amount of water produced at all the water plants minus the amount of water sent to storage. Indoor water demands were calculated by assuming that monthly indoor water demands were consistent throughout the year and that the total monthly demands from November through March consist solely of indoor water use. Based on these assumptions, the indoor water demands from April through October should be equal to the average value of the monthly November through March demands. Outdoor demands during the irrigation months were estimated by subtracting the average November through March indoor demand from the respective total monthly demands. **Figure 3-4** shows the historical annual percentage of water demand used indoors compared to the percent used outdoors. **Figure 3-5** shows the seasonal distribution of water demands, as an

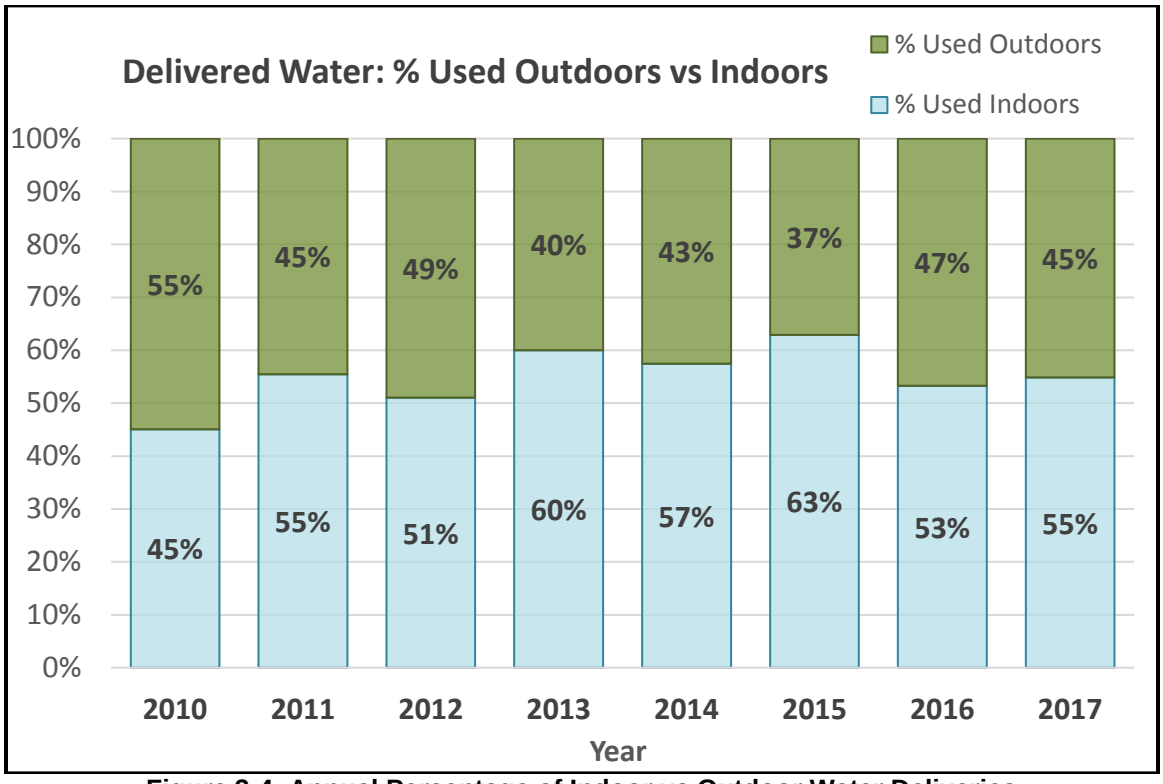

Figure 3-4. Annual Percentage of Indoor vs Outdoor Water Deliveries

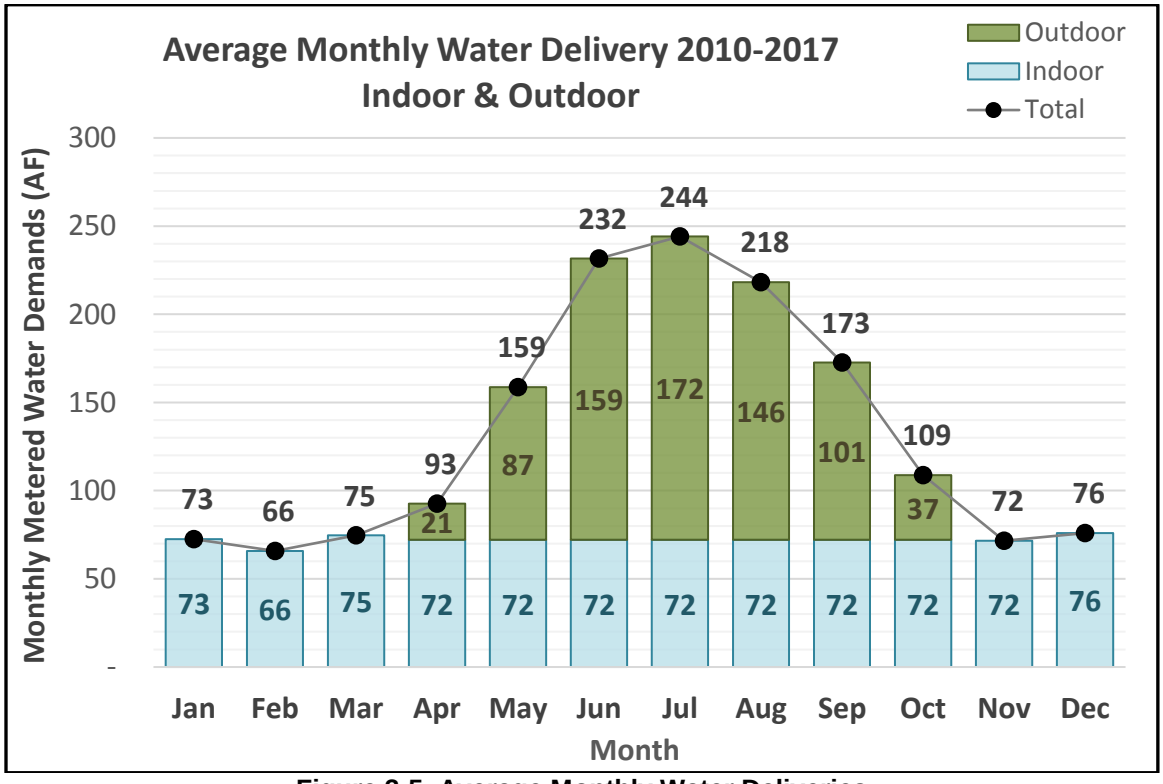

Figure 3-5. Average Monthly Water Deliveries

average monthly demand from 2010 through 2017 (2018 was not included as a full year of data was not available) at the time of writing this report.

In general, **Figure 3-4** shows a decreasing trend in the percent of water used outdoors, which indicates that the City is using less water for outdoor irrigation. In 2010 and 2012 the higher percentage of water demand for outdoor use may be a result of lower precipitation during the growing season in 2010 and 2012.

3.2.4 System Water Losses and Non-Revenue Water

The City recently conducted a water loss audit for 2018 using AWWA's free water audit software. The water audit identified approximately 38.8 MG/year of total losses (7-percent of total supply), with 9.3 MG/year being apparent losses and 29.5 MG/year being real losses. This is considered below average loss, but as shown in **Figure 3-6** the City has seen higher losses, including 17-percent in 2017. The average loss between 2010 and 2018 (excluding 2015 and 2016 as described below) is 11-percent.

Figure 3-6 compares the total finished treated water produced (what leaves the water treatment plant) with the metered water deliveries (what is delivered to customers). The difference between the two is losses (illustrated in the **Figure 3-1** infographic) which include:

- Real losses: leakage on transmission mains, distribution mains, and service connections; water main breaks; leakage and overflows from storage tanks.
- Apparent losses: unauthorized consumption, meter inaccuracies, and systematic data handling errors.
- Unbilled authorized consumption: this includes water used from hydrants for fighting fires and distribution system flushing, water used for wastewater plant operations, and could also include water used by City facilities that the water department does not bill.

Reducing real losses conserves water and reduces costs by reducing the amount of water the City needs to treat to serve its customers. Reducing apparent losses also helps the City bill for and receive revenue from all water produced. Reducing real and apparent losses aligns with goals of water efficiency and maintaining a stable revenue stream. The 2018 AWWA water audit estimated the annual cost at $184,000 for real losses and $58,000 for apparent losses. Reducing losses helps the City reduce unrecovered operating costs.

The losses shown in **Figure 3-6** represent real and apparent losses, but not all non-revenue water. Total non-revenue water also includes unrecovered water from the treatment plant (unrecovered water usage is shown in **Figure 3-2**) and the un-metered raw water from Rifle Creek used to irrigate parks (estimated raw water usage is shown in **Figure 3-3**).

The losses shown in **Figure 3-6** for 2015 and 2016 are atypical and unrealistic because the total finished water produced in 2015 and 2016 was an estimate, as described above. This was due primarily to the inability to measure total water produced at the GMWTP as a meter broke in 2015 and was not fixed because the plant was scheduled to be decommissioned. Instead, total finished water produced was estimated based on the metered water entering the plant and an estimated typical percentage of unrecovered water.

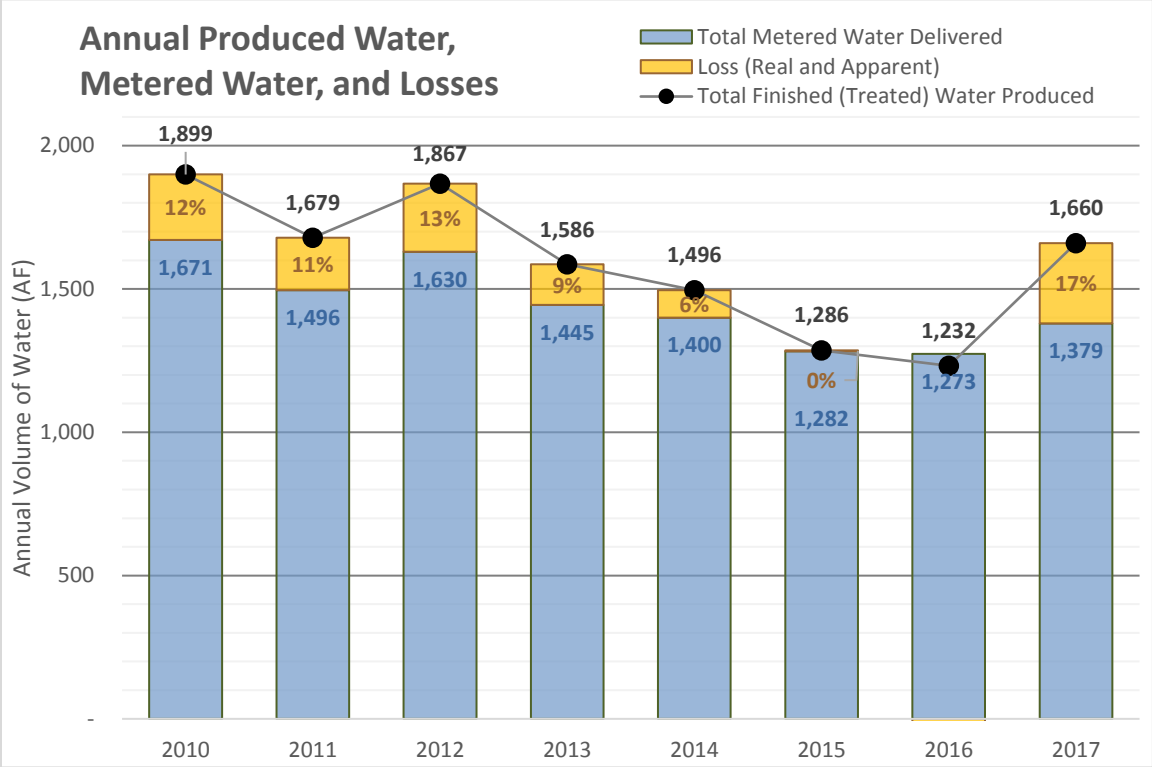

Figure 3-6. Annual Produced Water, Metered Water, and Losses

3.2.5 Annual Treated Metered Water Use by Customer Category

Residential use is the City's largest customer category by usage, representing an average of 68-percent of total metered water delivered. **Figure 3-7** shows the average percentage of metered water used by each of the City's main customer categories. Residential use is further divided into single family vs. multi-family and inside city limits vs. outside city limits. Usage outside city limits has been, on average, about two-percent of the total metered use. Seniors have a separate billing category (charged 80-percent of the standard base rate). This use category is not shown separately in the figure because this use is typically less than one-percent of the total.

Commercial and industrial use represents an average of 27-percent of total metered water deliveries. This includes large users such as the wastewater plant and the CoGen facility. The CoGen facility usage has been as high as 14.7 MG (2013). This accounted for only 2.8-percent of total metered water deliveries at that time, but for the past three years its usage has been between 2.5 and 3 MG (0.6 to 0.7-percent of total metered water deliveries). Commercial water use has been a stable revenue source for the City.

Irrigation-only accounts represent an average of 4-percent of total metered water deliveries. Irrigation-only accounts include customers such as ball-fields and parks; this category does not include irrigation in other customer categories such as residential. The miscellaneous category includes bulk water sales, water used by Hyland Trucking, and standby accounts.

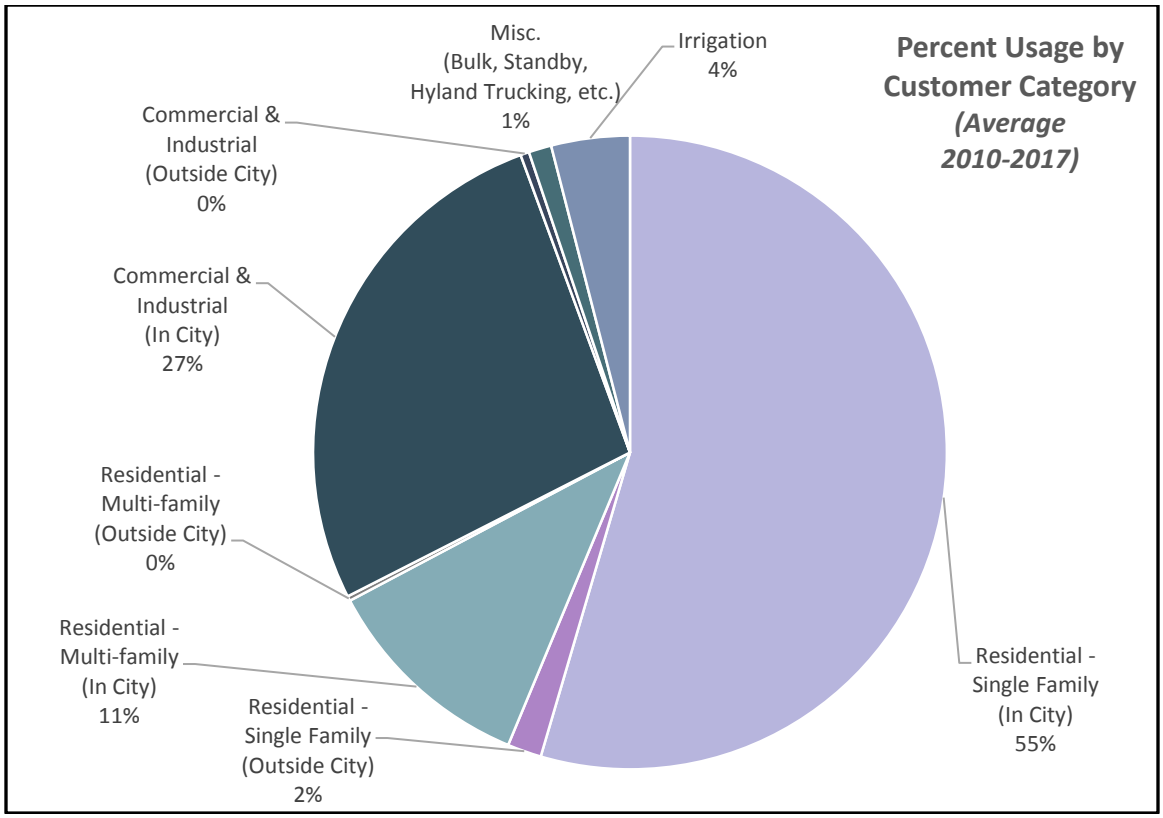

Figure 3-7. Percent Usage by Customer Category

Figure 3-8 shows how the usage in each customer category has fluctuated from 2010 to 2017. Commercial and industrial usage has remained stable and most of the water savings have resulted from the residential category. The City has chosen to focus on the residential sector outdoor water use because residential sector has the highest percent of water use and water savings, because lawn irrigation has a high consumptive use, and because this focus helps residential customers reduce their water bills. The City is focusing less on the commercial and industrial category because there are multiple commercial and industrial users such as schools and hospitals that have taken advantage of non-potable irrigation. The commercial and industrial users that use potable water for irrigation tend to have limited areas to irrigate and utilize xeric landscape in several areas.

Losses (previously shown in **Figure 3-6**) are also shown in **Figure 3-8**. As described above, the 2015 and 2016 losses are atypical and unrealistic because the total finished water produced in 2015 and 2016 is an estimate due to a meter break.

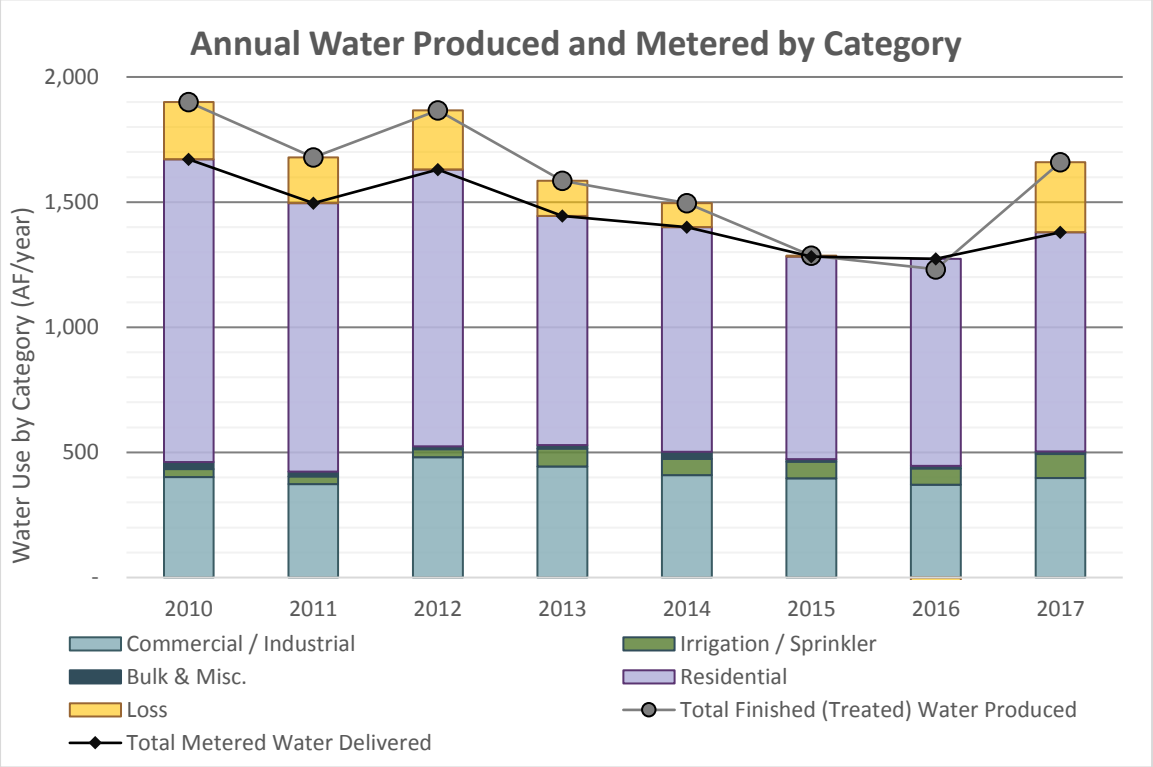

Figure 3-8. Annual Water Produced and Metered by Category

3.2.6 System-wide Per Capita Water Demands

Per capita water demand, typically expressed in gallons per capita/day (gpcd), was calculated by dividing the total water produced by the population. This calculation of per capita demands includes non-revenue water. Per capita water demand from 2010 to 2018 is shown in **Figure 3-9**.

The increase in per capita water demands from 2016 to 2017 and 2018 is most likely due to the water demands required for commissioning the new RRWPF. This activity combined with less precipitation and warmer temperatures also impacted outdoor irrigation demands. The per capita demand for 2018 was estimated based on water demands from January through June.

3.2.7 Annual Peak Day Demands

The new RRWPF came online in 2017. Its current capacity is 6 MGD with the option to expand to 8 MGD (additional membrane rack on-line). This facility would be sufficient to meet foreseeable future water demands for the City including peak day water demands. However, peak day demands are a consideration for future capital improvement requirements. As peak demands increase, there would be a need to increase plant capacity, eventually requiring the addition of a fourth membrane rack. Peak day demands are often driven by high irrigation demands late in the growing season but can also be impacted by factors such as tank filling and servicing, fire flows, unidirectional flushing of hydrants for distribution system water quality, or even commissioning of the new water plant.

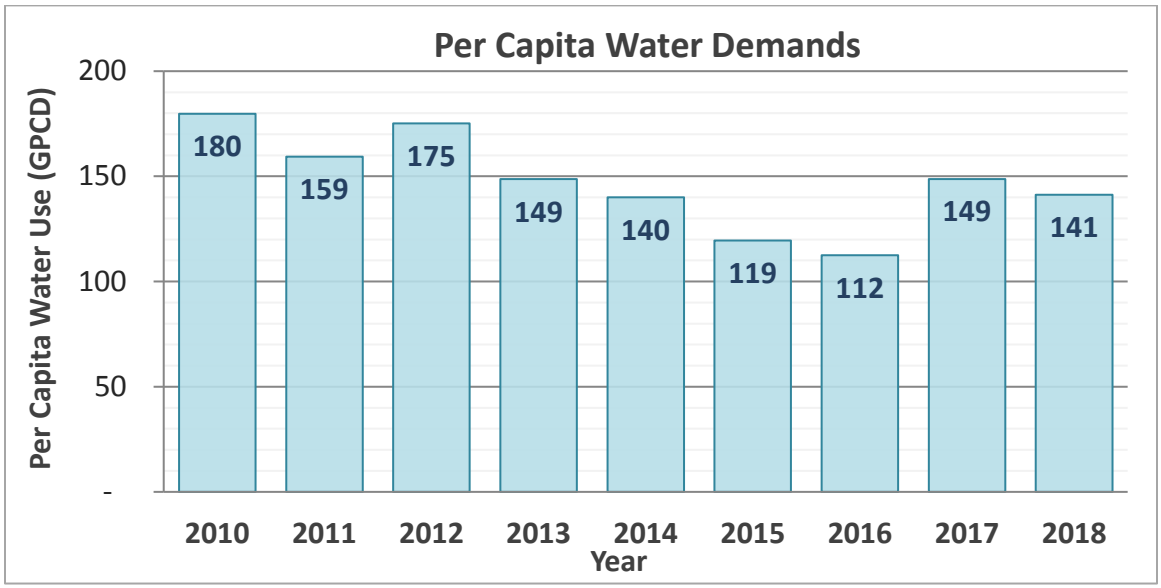

Figure 3-9. Per Capita Water Demands

Figure 3-10 shows the peak day demands and max month demands compared to the average day demand. Annual average day demand and max month average day demands are well within the current capacity. However, peak day demands are closer to meeting the current plant capacity. As such, one of the goals of this plan would be to focus on reducing or shifting the peak demands. Note the spikes in the peak day demands in 2016 and 2017 were due to new tanks coming on-line and the associated refilling activities.

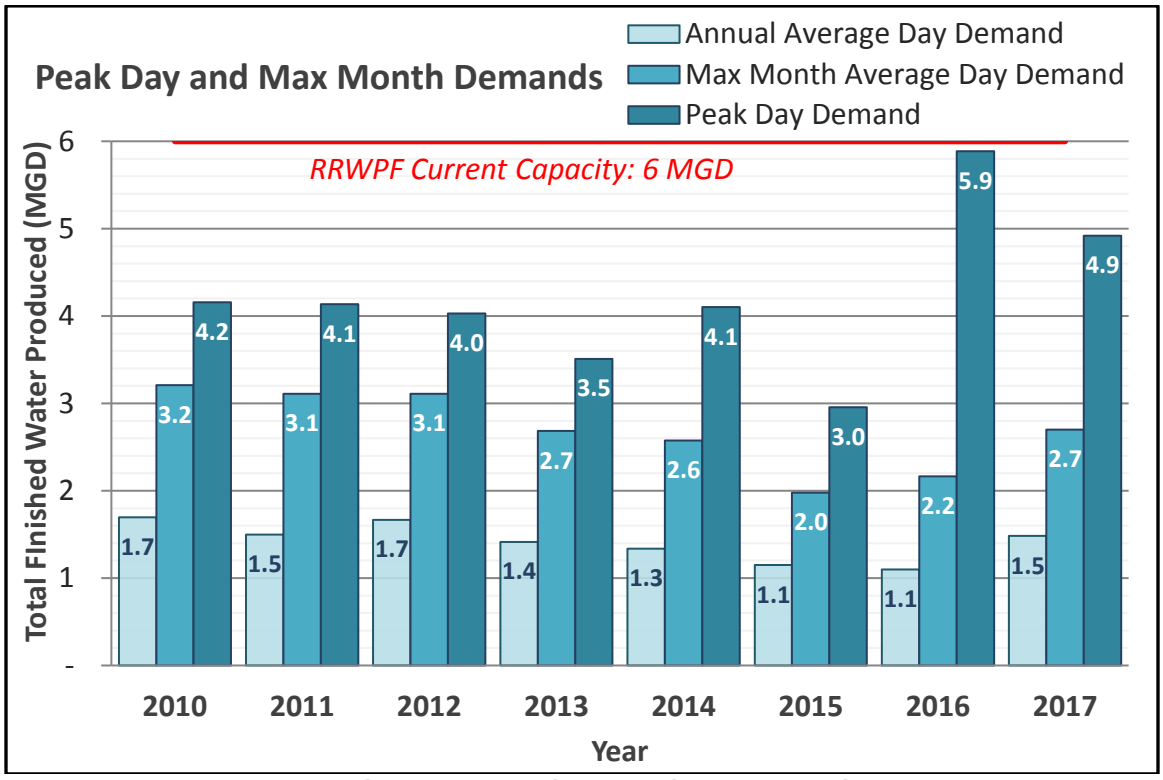

Figure 3-10. Peak Day and Max Demands

3.3 Past and Current Demand Management Activities

Per capita and total water demands decreased from 2010 to 2017 by 239 AF/year, or 13%. Water efficiency measures implemented in the past 5 years (2013 through 2017) are documented in **Worksheet B** found in **Appendix A**, which is based on the *Municipal Water Efficiency Guidance Document*. **Worksheet B** estimates the total water savings achieved by each of the water efficiency activities described in acre-feet. A selection of key water efficiency activities is described in more detail below and illustrated in **Figure 3-11**.

- In 2011 a water appliance rebate program was initiated – impact was insignificant due to the lack of interest and slowed rate of population growth at the time. City staff are interested in trying giveaways instead of a rebate program in the future due to the lack of success with the rebate program.
- In 2013, the City implemented a new more efficiency-oriented tiered rate structure with four tiers instead of the previous two tiers. Under the new rate structure, the base fee only includes 2,000 gallons per month instead of the previous 4,000 gallons per month. The average bill for 7,000 gallons increased from $29/month to $47/month. This rate structure meets the definition of a "conservation-oriented rate structure" from both the Colorado Best Practices Guide for Municipal Water Conservation and the AWWA Water Conservation Programs - A Planning Manual, M52. **Table 3-3** shows the City's 2018 water rates, which have the same structure as implemented in 2013.

Table 3-3. City of Rifle 2018 Water Rates

Tier	Water Usage (gallons)	In-City Rate *
Base Rate	0 - 2,999	$ 30.63
Tier 1	3,000 - 4,999	$ 4.09
Tier 2	5,000 - 8,999	$ 4.34
Tier 3	9,000 - 20,999	$ 5.10
Tier 4	> 20,000	$ 6.12

*Notes:
1) Out of City rates are charged 150% of In-City rates.
2) Senior discount rate is 80% of the base rate (20% discount).
3) Hydrant water is charged 400% of the In-City applicable rate.
4) Bulk water from the water dock station is charged $10 per 1000 gallons.

- In 2014, 2015, 2016, 2017, and 2018 the City implemented 5% rate increases.
- 2017 commissioning of the RRWPF:
  - Water lost during the water treatment process (shown as unrecovered water in **Figure 3-2**) from the GMWTP and BCWTP ranged from 8% to 24%, with an average of 16%.
  - While the City is still not confident in their exact calculations of unrecovered water (due to the meter issues discussed above) the losses from the RRWPF are drastically lower and are estimated at 2%.
  - While demands increased when the new plant went online in 2017 the demands are expected to drop back to where they were before the plant, but with even less unrecovered water.
- In 2019, the City conducted a water loss audit using AWWA's free water audit software, which helped the City to identify priority action items.

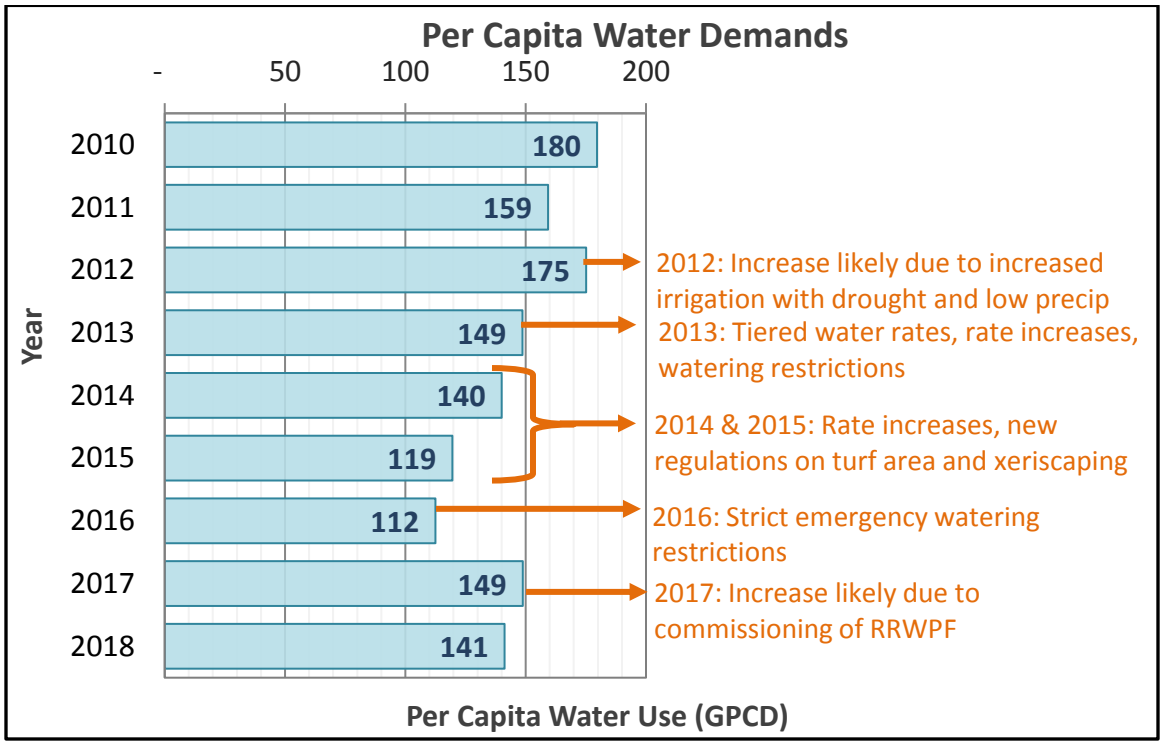

Figure 3-11. Water Savings Estimates Using Demand Data

3.3.1 Passive and Active Water Savings

Demand management water savings are comprised of active savings and passive savings. Passive savings are a result of replacing older less water efficient fixtures and appliances with newer more water efficient fixtures and appliances. This naturally occurs over time as fixtures age. Demand management activities that promote the replacement of old inefficient indoor fixtures and appliances (e.g. toilet and washing machine rebates) essentially accelerate the timing of when the savings would occur. Active savings are a result of the implementation of demand management activities. Passive savings are estimated to be 1.3% per year by the downward trend in indoor per capita water demands, as shown in **Figure 3-12.**

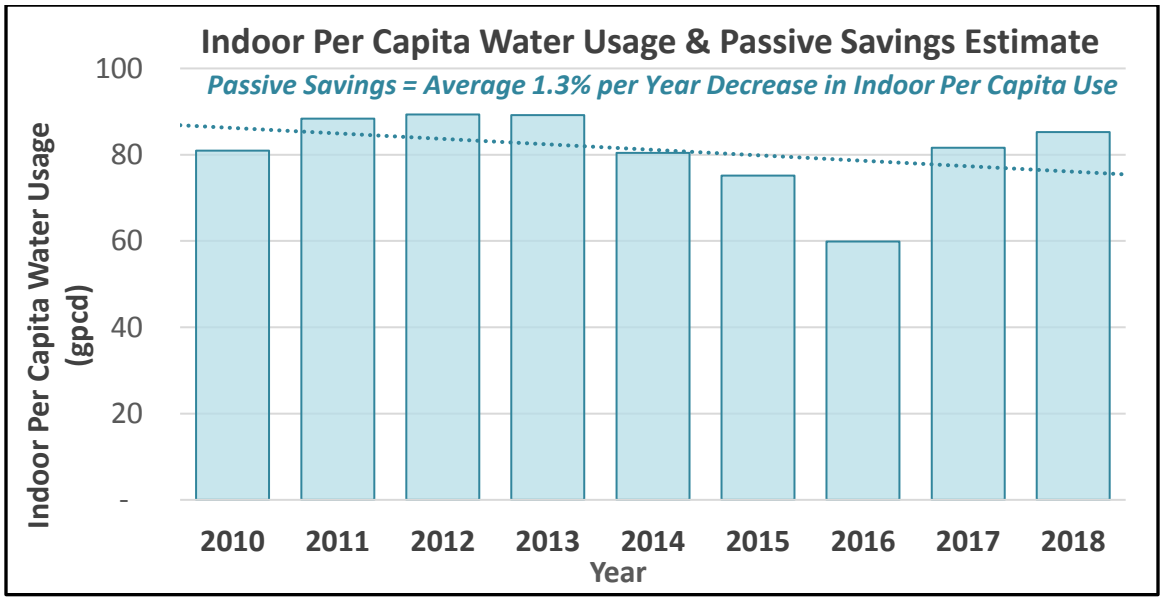

Figure 3-12. Estimated Passive Water Savings

3.4 Demand Forecast

3.4.1 Population Projection

The City has experienced re-occurring periods of boom, bust, stagnation, and declines in population which offer challenges when evaluating future water demands. Population growth in the City slowed during the recession between 2008 and 2015 to an average of 0.6-percent but increased during 2016 and 2017 (an average of 1.9-percent growth). The average growth from 1980 to 2018 was 3-percent (including a population boom in the early 1980s and the recent recession). A 2013 DOLA report projects that Garfield County's population is expected to increase more rapidly than the statewide average over the next few decades. The City used a 3-percent projected growth as a conservative number based upon this information (**Figure 3-13**).

A revised demand forecast with the effects of passive and active water savings is presented and described in the following section.

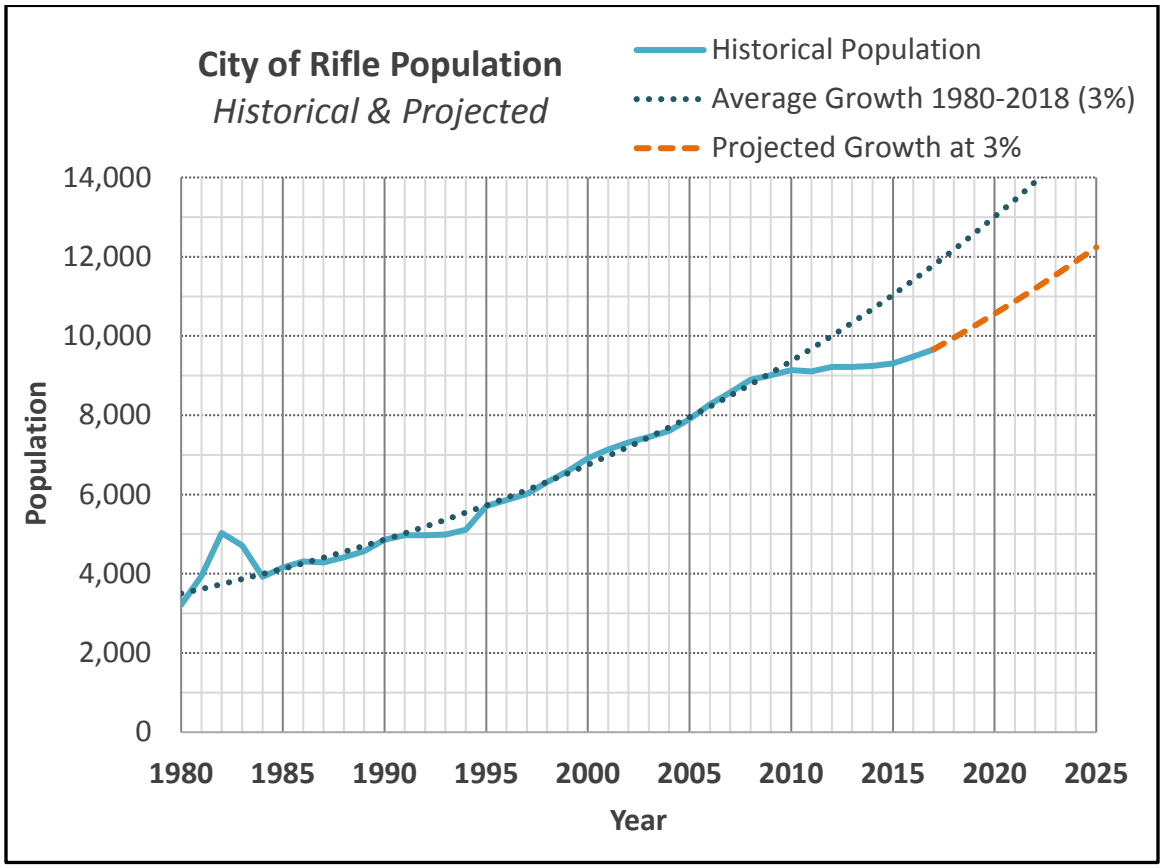

Figure 3-13. Historical and Projected City Population

3.4.2 Baseline Water Demand Forecast

The City prepared a baseline (unmodified) demand forecast as part of this Plan update, which does not include any impacts from water efficiency activities. The baseline forecast depicted in **Figure 3-14** includes the projected demands starting in 2018 and going through the seven-year efficiency planning period horizon of 2025.

In the baseline forecast, potable water demands increase with population (estimated at 3-percent growth) at a constant per capita usage rate of 132 gpcd, which was the average treated water usage rate over the past 5 years (based on total treated water produced at the plant). Demands were based on total treated water produced (which includes losses) rather than deliveries to show the effect of water efficiency activities aimed at reducing non-revenue water and system losses. Population projections used to project baseline demands are shown in **Figure 3-13**. The baseline water demand forecast is shown in **Figure 3-14.** The 2018 demands are based on the population projections and average per capita demands.

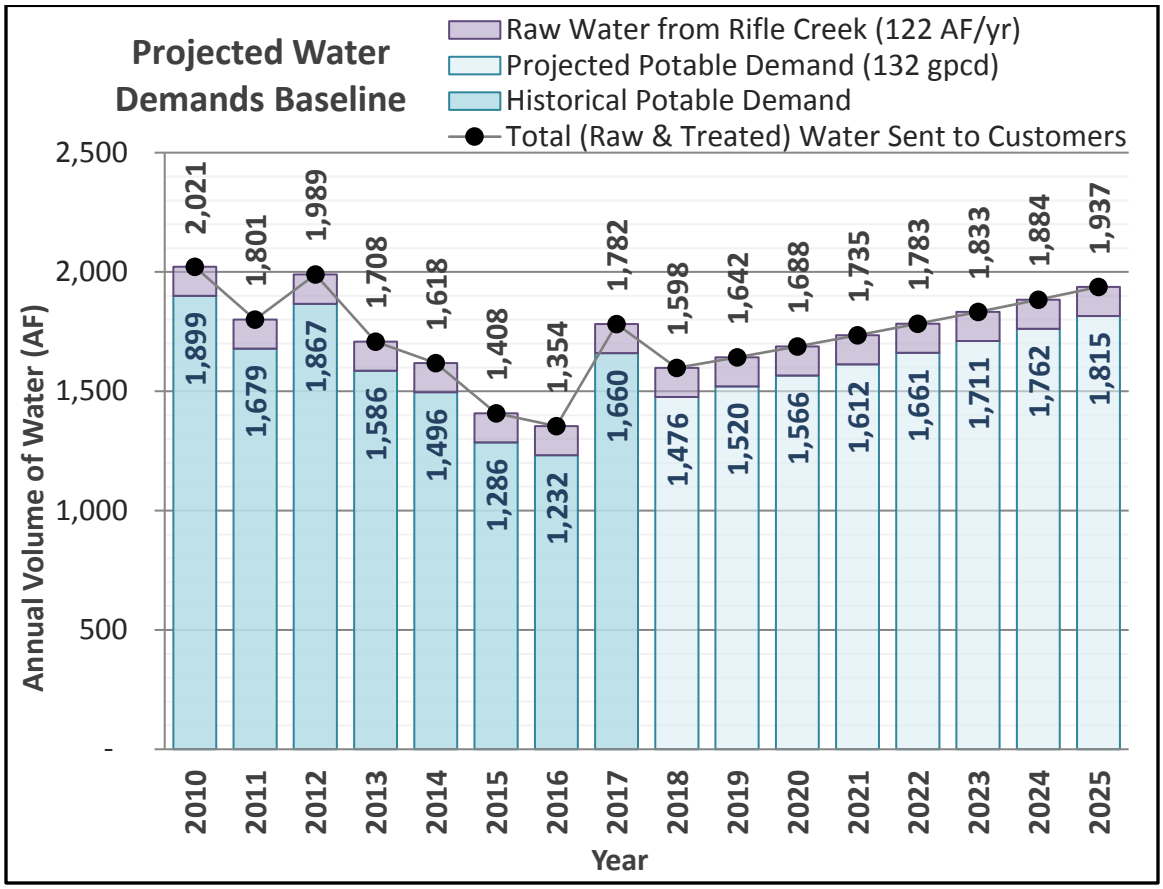

Figure 3-14. Forecast Water Demands: Baseline

3.4.3 Modified Demand Forecast

SGM and City staff projected the total reduction in demand that could be achieved during the 2019 through 2025 planning period is approximately 200 AF. This demand reduction is shown in **Figure 3-15** as the difference between the unmodified 2025 demand and the modified demand with active savings in 2025. This demand reduction includes non-revenue water, passive savings, and active savings from the efficiency activities selected (explained in the following sections). Modified demands with passive savings, shown in **Figure 3-15,** are calculated with the increasing population by applying the annual per capita water use (with indoor per capita water use decreasing by 1.3-percent per year).

3.4.4 Passive Savings

Passive savings include the water savings achieved when customers (without any utility incentive) replace old and inefficient fixtures and appliances with new more water efficient models. This happens as old fixtures and appliances reach the end of their useful life or because of remodeling and renovations. Passive savings are driven by national plumbing codes, department of energy standards, and the increasing availability of efficient appliances (such as EnergyStar® rated products), rather than by the municipality. Passive water savings were calculated at 1.3-percent per year decrease in indoor per capita use, as shown in **Figure 3-12.** Modified demands with passive savings, shown in **Figure 3-15,** are calculated with the increasing population by applying the annual per capita water use (with indoor per capita water use decreasing by 1.3-percent per year).

3.4.5 Active Savings (Water Efficiency Plan)

Active savings include the predicted water usage reductions from implementing all the selected water efficiency activities. **Worksheet H** includes predicted water usage reductions for each activity evaluated, and a total reduction for all activities selected. Active savings for each activity were based on estimating a reasonable percentage water use reduction (from the Handbook of Water Use and Conservation by Amy Vickers), and applying that percentage to recent water use for the relevant customer category affected. **Worksheet H** estimates that by implementing all the water efficiency activities selected for implementation the City can reduce the total water demand (raw and potable, including non-revenue water) by a total of 108 AF per year. SGM assumed that the City would implement these activities gradually, so the demand reduction is spread out over the seven-year period. These active savings are in addition to passive savings. **Figure 3-15** shows that the demand forecast with active savings is 1,737 AF per year by 2025, which is 108 AF lower than the demand forecast with passive savings of 1,845 AF and is 200 AF lower than the baseline demand of 1,937 AF.

The cumulative water savings from all efficiency activities over the 2019 – 2025 implementation period is 760 AF. This is visually shown as the cumulative difference between the baseline demand line and the modified demand with active savings line shown in **Figure 3-15** between 2019 and 2025.

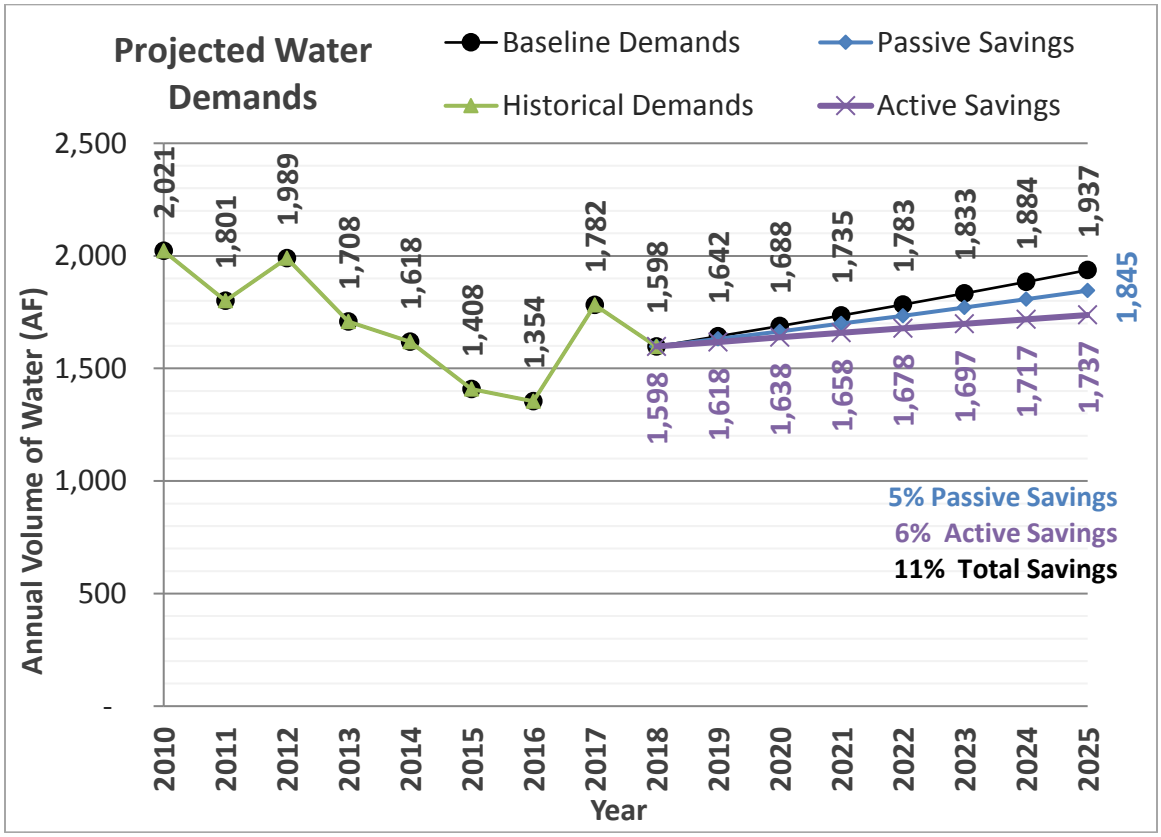

Figure 3-15. Projected Water Demands: Baseline, Passive Savings, and Active Savings

4.0 Integrated Planning and Water Efficiency Benefits and Goals

The City recognizes that water efficiency provides multiple benefits at the local, regional, and statewide levels and within the societal, political and environmental arenas. SGM worked with Water Department staff and with the City's Planning Commission to develop realistic goals for the City's Plan Update.

4.1 Water Efficiency and Water Supply Planning

Previous estimates projected water supplies to be able to serve a population greater than 20,000, which would carry the City to 2042 at a projected 3% growth rate. Under the City's current water source supply, drastic water efficiency efforts are not necessary. However, to prepare for future unforeseen population growth and/or increased pressure on the Colorado River supply source, the City would implement selected efficiency activities to reduce strain on the current supply and to promote continued growth with the current supply.

The City does not have immediate concerns about the water treatment facility capacity. The RRWPF has a current capacity of 6 MGD, with a buildout capacity of 8 MGD. Annual average day demand and max month average day demands are well within the current capacity, but peak day demands are closer to meeting the current plant capacity. As such, one of the goals of this plan would be to focus on reducing or shifting the peak demands.

As peak demands increase, there would be a future need to increase plant capacity by installing a fourth membrane rack, consisting of 90 modules and associated components (estimated cost of $1 Million). Should efficiency measures prove effective, this project could possibly be moved to a later date by installing additional modules (54 modules total) on existing racks at an estimated cost of $250,000 (estimated cost savings of $750,000).

4.2 Water Use and Land Use Planning

An increased emphasis is being placed on the importance of integrating land use and water use planning in Colorado and the Western United States. The Colorado Water Plan identified a goal of integrating land use and water planning (Chapter 6.3). The Colorado Basin Implementation Plan (CO BIP) devoted one of its six themes to promoting local water conscious land use strategies. The CO BIP emphasized that land use authorities have a responsibility to take on water management as an issue when planning. Colorado Senate Bill SB15-008, introduced in 2015, directed the CWCB, with assistance from DOLA, to incorporate land use planning into water efficiency planning. The bill directed CWCB and DOLA to implement training to support integration of these concepts and make recommendations regarding management practices that a municipality could include in its water efficiency plan that can be implemented through land use planning efforts.

Land use planning and zoning within the City service area is governed by Garfield County and by the City of Rifle. Garfield County Land Use and Development Code requires that any proposed development must show that it has adequate, reliable, physical, long-term, and legal water supply to serve its use (7-104). While there are other measures that could be useful at the county level, this Plan focused on measures at a City level, where the City has more influence. **Figure 4-1** provides a schematic of how the Plan interrelates with other elements of the City's land use planning codes and documents.

4.2.1 Landscape Design

The Colorado Water Wise (CWW) Best Practices Guide outlines seven basic principles and key considerations for water efficient landscape design:

1. Planning and design: Consider site conditions including existing slope, soil, drainage, and plants
2. Soil improvement: Provide soil most appropriate to the plants
3. Hydrozoning: grouping plants with similar water demands
4. Practical turf areas: Limit turf areas to those needed for practical purposes
5. Efficient irrigation: Use efficient irrigation systems (such as drip systems, automatic systems, sprinkler timers, and rain shutoffs)
6. Mulching: Mulch over soil and around plants to reduce evaporation
7. Selection of native and low-water-use plants

The City has incorporated these principles into its Municipal Code. Section 16-13-20 outlines the seven basic principles and key considerations for water efficient landscape design from the CWW Best Practices Guide:

1. Design. Identify zones of different water requirements and group plants together that have similar water needs;
2. Appropriate Use of Turf. Limit high-irrigation turf and plantings to appropriate high-use areas with high visibility and functional needs;
3. Low-Water-Using Plants. Choose low-water-demanding plants and turf where practicable;
4. Irrigation. Design, operate and maintain an efficient irrigation system;
5. Soil Preparation. Incorporate soil amendments before planting;
6. Mulch. Add mulch to planting beds to a minimum depth of three (3) inches;
7. Maintenance. Provide regular and attentive maintenance

4.2.2 Rifle Comprehensive Plan Update

Land use planning is strongly guided by the City's Comprehensive Plan: a periodically updated plan which outlines the City's vision and goals for community, future land use, sustainable growth patterns, and economic base, and other categories. The Comprehensive Plan is used to guide the City's land use regulations (Chapter 16 of the City Municipal code), zoning ordinances, subdivision regulations (which ensure new developments would have sewer, water, streets, and other utilities), and building regulations (which ensure proper construction of buildings).

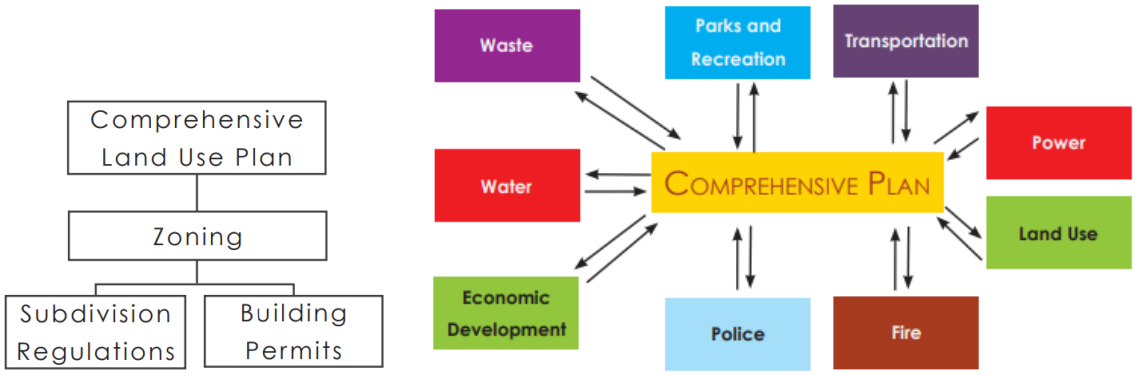

Figure 4-1. Relationship of the Comprehensive Plan to other Regulatory Departments (excerpts from 2009 Comprehensive Plan)

The Comprehensive Plan was updated and approved by the Planning Commission in November 2009. The 2009 Comprehensive Plan's landscape design guidelines encouraged water smart urban design principals that reduce water use in the City's arid climate, such as use of xeric planting methods, low-water use plants, and native vegetation (Section 4.9). It also identified the important connection between water supply availability and land use planning (Section 6.4). It identified the need for water conservation activities and outlined the following strategies and objectives. Since 2009, the City has made progress toward many of these, as described below, which suggests that the Comprehensive Plan has been a useful tool in guiding the City's incorporation of water efficiency principles into land use planning. Specific goals outlined in the 2009 Comprehensive Plan and progress made toward these goals are summarized below:

1. Evaluate the use of "raw water" (less than fully treated water) for irrigation. *The City currently uses raw water for irrigation of a few parks.*
2. Limit the size of irrigated lawns on residences. *Lawn sizes are not currently limited.*
3. Increase the use of low-water (xeric) landscape materials. *Progress has been made through the development and approval of two ordinances since 2009: Ordinance No. 20 - 2014 (regulations on new and renovated construction for multi-family housing, commercial development, etc. promotes water conservation through xeriscaping); and Ordinance No. 11 – 2011 (site design standards for projects within Historic Core sub-district. Required: minimum of 50% xeric plant material).*
4. New development must provide adequate water rights to serve itself, and properties annexing to the City would dedicate groundwater rights (to the City). *This strategy is currently reflected in the City's water rights dedication policy (Rifle municipal code Section 13-6).*
5. The City should implement the water conservation measures identified in the City's "Water Conservation Plan" [examples given]. *Progress has been made toward many of these goals.*
6. Design and construct water plant to process Colorado River water for known future water needs as well as to improve water quality for current water users. *This goal was accomplished with construction of the RRWPF.*
7. Offer continuing education to plant operators and O&M crew. *This is an ongoing process.*

8. Continually evaluate energy use, system efficiency, water quality improvements, and rate structure equity. *This is an ongoing process.*
9. Develop a tiered rate structure to encourage water conservation and considered use of this most precious resource. *This goal was accomplished with implementation of the new inclining-tier rate structure in 2013.*

The City is currently updating its Comprehensive Plan (a process which involves City staff, City Council, the Planning Commission, and regional agencies, and the public). The concurrent updating of the City's Comprehensive Plan and Water Efficiency Plan allows for opportunities for aligning the goals of both plans. The City would incorporate key land-use planning related goals outlined in this report into the next update of the Comprehensive Plan, which is scheduled for 2019.

Furthermore, City staff and SGM have engaged the Planning Commission as a stakeholder in the public outreach and review process. Because the Planning Commission is involved in the Comprehensive Plan and other land use decisions, one goal of their involvement is to help align the goals of water and land use planning. The Planning Commission were involved in the evaluation process of efficiency activities.

4.3 Water Efficiency Goals

SGM and City staff reviewed the City's 2008 Water Conservation Plan (including its goals), the achieved water savings, and the City's water customer metered usage data between 2010 and 2018 to develop the water efficiency goals for the Plan Update. The City's situation has changed since the 2008 Water Conservation Plan. The projected population increases have not occurred; rather population growth slowed to almost no growth during the recession. In 2017 the RRWPF was commissioned, increasing the City's drinking water process capacity and reliability. The capacity of the new RRWPF was designed in anticipation of the expected population increase which has not occurred. The City no longer has immediate need to drastically reduce demands.

The City now has increased debt service due to the RRWPF construction costs, and the Water Enterprise Fund is sensitive to reductions in revenue from drastic water use reduction. Financing of the RRWPF was also more difficult than anticipated because of reduced revenue from tap fees did not come to fruition during the recession. The RRWPF project is sales tax funded with essentially no tap fee revenue. Other factors that have influenced the City's current situation since the 2008 Water Conservation Plan include deferred capital expenditures, recent construction cost market conditions, a stagnant poorly-diversified local energy economy with depressed natural gas commodity prices, and steep rate increases. There was considerable downward pressure on future water demand relative to what the community can afford.

Goals and efficiency activities such as reducing system losses and non-revenue water, implementing efficiency-oriented rate increases and tap fee structures, and reducing peak day demands all align with the City's principles of promoting water efficiency while considering the immediate need to maintain a revenue stream.

SGM and City staff selected three goals that are achievable. The three main water efficiency goals for this planning period are:

1. **Reduce total non-revenue water (with a focus on real system losses) from an average of 11% to below 10%.** The success of this goal would be quantitatively measured by comparing future water production volume to metered deliveries, and then calculating the total system losses and non-revenue water. Non-revenue water includes real losses due to leaks and water main breaks and apparent losses due to billing and metering errors. The 2010 through 2017 water losses (real and apparent) averaged 11-percent, excluding loss from 2015 and 2016 (as losses from 2015 and 2016 are estimates because the GMWTP meter was not functional, as described in previous sections). Water loss was as high as 17-percent in 2017. The goal was to reduce all non-revenue water (with a focus on real system losses) from an average of 11-percent to be consistently below 10-percent.
2. **Reduce summer peak day water use by 10%.** The success of this goal would be quantitatively measured by tracking future peak day water demand (water produced at the plant minus water sent to storage). This metric includes non-revenue water. Past peak day water use is shown in **Figure 3-10**. Between 2010 and 2017, peak day demand and has ranged from 2.96 MGD (2015) to 5.89 MGD (2016). This goal could include shifting peak day demands or reducing peak day demands. Success of this goal can also be measured by tracking max month water demands.
3. **Maintain sufficient revenue stream to pay for the City's outstanding debts (including the RRWPF) and fund operations and maintenance costs in an equitable manner.** The success of this goal would be quantitatively measured by tracking the City's revenue stream from water sales and comparing the revenue stream to its expenses including its debt service. The City would also monitor the expenses spent on water efficiency activities and the water savings achieved to monitor the cost effectiveness of the activities implemented.

5.0 Selection of Water Efficiency Activities

5.1 Summary of the Selection Process

SGM and City staff worked collaboratively to select water efficiency actions, using the CWCB's four phase process. SGM documented input using CWCB's Worksheets A-H, (included in **Appendix A**).

5.1.1 Phase 1 – Assessment

Phase 1 included the assessment of key water supply limitations and future needs (described in **Worksheet A**), the City's past water efficiency activities (described in **Worksheet B**), and capital improvement projects being considered that could be impacted by water efficiency (described in **Worksheet C**).

Key water supply limitations identified in **Worksheet A** include the aging distribution system and the high likelihood of political and public opposition to future rate increases. Key lessons learned from past activities documented in **Worksheet B** include: the rebate program showed low participation and no success, and that efficiency results achieved over the past five years are likely due low efficiency-oriented rates, water line replacements, watering restrictions, and landscaping design ordinances. The key takeaway from **Worksheet C** is that future expansion of the water treatment plant capacity could be postponed and/or costs could be reduced if efficiency measures are successful (specifically reducing peak demands).

5.1.2 Phase 2 – Identification

SGM and City staff started with the CWCB's activities included in **Worksheets D, E, F, and G** to identify a list of potential water efficiency activities that are generally compatible with the City's system and needs. Additional activities were included based on past efficiency activities that showed success, by based on suggestions and plans from City staff and the Planning Commission.

5.1.3 Phase 3 – Qualitative Screening

SGM and City staff identified six qualitative screening criteria:

1. Has measure been budgeted?
2. Is measure cost effective?
3. Is there an above average potential to save water?
4. Are City staff resources available?
5. Is measure legally feasible?
6. Is measure technically feasible

Worksheets D-G document the screening process. The first criteria (has the measure been budgeted?) was included to give weight to those measures that the City has already budgeted. Some efficiency activities that have not been budgeted were carried to evaluation.

5.1.4 Phase 4 – Evaluation and Selection

The evaluation criteria used in this phase reflected the goals developed in Step 3 (Section 4.3). The evaluation process also included the development of estimated implementation costs and identified potential volume of water savings (where possible). This process was documented in **Worksheet H**. The initial qualitative goals (reduce non-revenue water and system losses, reduce peak day demands, and maintain a sufficient revenue stream) developed during this process, were transferred into the quantitative goals outlined in Section 4.3.

SGM and City staff relied upon the following resources to estimate the water savings:

- The CWCB's Colorado Water Wise Guidebook of Best Practices for Municipal Water Conservation in Colorado, 1st edition August 2010.
- Handbook of Water Use and Conservation by Amy Vickers, 1st edition September 2001.

Worksheet I outlines the City's selected water efficiency activities for their seven-year planning period of 2019 through 2025 (summarized in **Table 5-1**).

5.2 Demand Management Activities

Demand management activities are described and grouped by the CWCB's SWSI Levels Framework, as shown in **Figure 5-1**. Foundational activates form the base of the cylinder and should be in place before undergoing the other three categories of activities: targeted technical assistance and incentives, ordinances and regulations, and education activities. **Table 5-1** provides complete list of the selected water efficiency activities, but more detail about each activity is included in the table of selected water efficiency activities in **Worksheet I.** A brief discussion of the activities chosen by SWSI level category is included below. More specific information about each individual activity can be found in **Worksheets I-J**.

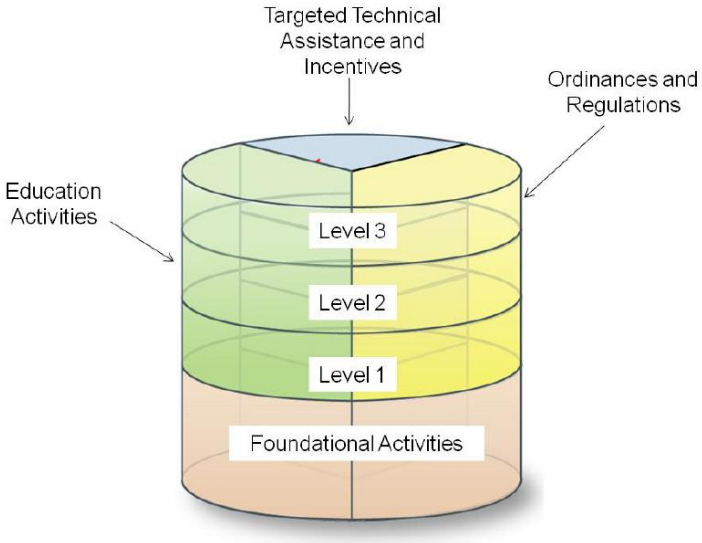

Figure 5-1. SWSI Levels Framework of Demand Management Activities

Table 5-1. Selected Water Efficiency Action Items (Summary of Worksheet I)

Selected Water Efficiency Activities	Implementation Period of Historical Activities	Historical Total Water Savings (AF)	Implementation Period of New Activities	Projected Water Savings (AF)	
				Total	Annual Average
Foundational Activities					
Inclining/Tiered Rates (The City already has inclining tiered rates, and is planning another water rate basis evaluation in 2019)	2013-2014	210	-	-	-
Water Rate Adjustments (Water rate basis evaluation planned for 2019)	2014-2017	30	2020-2025	200	40
Tap Fees with Water Use Efficiency Incentives (Tap fee evaluation)	-	-	2020-2025	35	7
Meter Installation - Non-potable irrigation to City property	-		2019-2025	24	4
Meter accuracy check program	-	-	2019-2020	3	3
System Wide Water Audits (annually using AWWA water audit software)	2019	-	2020-2025	Unk.	Unk.
Water Line Replacement Program (Develop formal replacement program)	-	-	2020-2025	20	4
Asset management of water system pipelines	-	-	2019-2025	Unk.	Unk.
Capital Improvement Plans (Water and wastewater CIPs under development)	-	-	2016-2025	Unk.	Unk.
Drought Management Plan (in progress)	-	-	2019-2025	Unk.	Unk.
Designate Existing Staff as Efficiency Coordinator	-	-	2018-2025	Unk.	Unk.
Planning Group/Committee Dedicated to Efficiency - Coordinate with Planning Commission on Efficiency Plan & Activities	-	-	2018-2025	Unk.	Unk.
Assure consumers maintain service line	-	-	2018-2025	14	2
Targeted Technical Assistance and Incentives					
Removal of Phreatophytes - in City managed ditches for raw water irrigation of City Parks	-	-	2019-2025	6	1
Outdoor Irrigation Controllers - targeted giveaways of smart irrigation controller or system timers, esp. for large customers. Target 5 of largest customers with irrigation, evaluate participation and success.	-	-	2019-2025	6	1
Outdoor Irrigation Controllers - on City managed parks / green spaces that are on potable water.	-	-	2019-2025	12	2
Rain Sensors - targeted giveaways of rain sensors, esp. for large customers. Start with 50, evaluate participation.	-	-	2019-2025	36	6
Rain Sensors - implement on City managed parks / green spaces	-	-	2019-2025	6	1
Xeriscape - xeriscape demonstration gardens on City managed parks / green spaces	-	-	2019-2025	12	2
Specialized Nonresidential Surveys, Audits and Equipment Efficiency Improvements - Commercial & Industrial Self-Audit Assistance & Incentive: Provide WaterSense C&I self-audit checklist, with incentive for completion (such as giveaways, website recognition, free cross connection test, etc.)	-	-	2020-2025	24	4
Give-aways: (Give away irrigation system timers). Start with 50, evaluate participation.	-	-	2019-2025	18	3

Table 5-1. Selected Water Efficiency Action Items (Summary of Worksheet I) - continued

Selected Water Efficiency Activities	Implementation Period of Historical Activities	Historical Total Water Savings (AF)	Implementation Period of New Activities	Projected Water Savings (AF)	
				Total	Annual Average
Ordinances and Regulations					
Rules and Regulations for Landscape Design/ Installation (Municipal Code Sec. 16-13-20 outlines the seven basic principles and key considerations for water efficient landscape design from CO Water Wise Best Practices Guide (pg. 127)).	2014-2018	20	2019-2025	6	1
Soil Amendment Requirements (included in Municipal Code Sec. 16-13-20)	2014-2018	-	2019-2025	Unk.	Unk.
Turf Restrictions: General landscape requirements for commercial, industrial, civic, and multi-family uses may have a maximum of 50% area with Turf (Sec. 16-13-80 (c))	2014-2018	40	2019-2025	21	3
Turf Restrictions: EQR defined as up to 5,000 SF. Irrigated area above that is allowed but charged a higher tap fee (Sec. 13-4-60). Update code to include regulations limiting area of turf for single family residential development.	2012-2018	Unk.	2019-2025	Unk.	Unk.
Xeriscape Requirement: General landscape requirements for commercial, industrial, civic, and multi-family uses must have at least 50% xeric plants (Sec. 16-13-80 (c))	2014-2018	40	2019-2025	7	1
Water Waste Ordinance	-	-	2019-2025	30	5
Time of Day Watering Restriction	-	-	2019-2025	0	0
Day of Week Watering Restriction	-	-	2019-2025	0	0
Water Overspray Limitations	-	-	2019-2025	30	5
Landscaper Training and Certification	-	-	2019-2025	Unk.	Unk.
Irrigation System Installer Training and Certification	-	-	2019-2025	Unk.	Unk.
Education Activities					
Web Pages (Improve & add to existing web pages)	-	-	2019-2025	18	3
Bill Stuffers (electronic and paper)	-	-	2019-2025	18	3
K-12 Teacher and Classroom Education Programs	-	-	2019-2025	18	3
Interactive Websites (provide links to useful webpages created by EPA, Water Wise, etc.)	-	-	2019-2025	18	3
Provide specific information regarding gray water and rainwater	-	-	2019-2025	6	1
Totals:					
			Total Annual Estimated Savings		**108**
			Raw Water		***5***
			Potable Water		***103***

5.2.1 Foundational Activities

The City has a solid foundation and is focusing on efficiency-oriented rates and tap fees, reducing system losses, planning, and staffing.

5.2.1.1 Metering and Data Collection

The City is fully metered, bills monthly, and uses Caselle for billing which allows it to track and categorize water use. The City already has an efficiency-oriented four-tier inclining-block rate structure. **Worksheet D** documents the screening process of foundational activities. Past foundational activities were included if they were recently implemented, but some of the CWCB's identified foundational activities were adopted prior to the 2008 Water Conservation Plan and are considered standard practice. These standard practice activities were not carried to evaluation. Some of these activities include:

- Identify unmetered/unbilled treated water uses, & meter installation (the City already estimates that it has no unmetered taps).
- Frequency of meter reading, frequency of billing, and volumetric billing (the City switched from bi-monthly to monthly water billing frequency in January 2006).
- Tracking water use for all customers, tracking water use by customer type, and upgrade billing system to track use by sufficient customer types (the City has had this ability since before the 2008 Water Conservation Plan).

The City is focusing on installing meters for its delivery of raw ditch water for irrigation of parks, which is the only area of the system that is not yet metered.

5.2.1.2 Water Use Efficiency Oriented Rates and Tap Fees

The City plans to focus on water rates and tap fees for this planning horizon. The City has efficiency-oriented rates that were implemented in 2013 after the most recent water rate evaluation. The City is planning its next water rate and tap fee study for 2019, which is planned to re-evaluate the rate structure and consider more efficiency-oriented rates and plans to evaluate the potential for a more efficiency-oriented tap fee structure. The CWW Best Practices Guide recommends water efficiency-oriented tap fees as an important strategy for growing communities, as they "encourage water efficiency during the construction process and … ensure that new customers pay their fair share of system and water resources development costs." This is applicable to the City as it is expecting to grow.

5.2.1.3 System Water Loss Management and Control

The City is also focusing on activities that would reduce system losses, including developing a formal asset management program of its water system pipelines, developing a formal waterline replacement program, and assuring customers maintain service lines. A leak detection program is not feasible because it does not work well with PVC pipes (which make up much of the distribution system), and the City finds that scheduled replacement is more cost effective.

The City recently conducted a water loss audit for 2018 data using AWWA's free water audit software and plans to continue conducting these audits on an annual basis. The 2018 water audit identified customer metering inaccuracies as a priority area of focus to improve

apparent losses and to improve water audit accuracy. The City plans to start a meter accuracy check program in 2019 or 2020.

These action items also align with the recommendations from the AWWA Partnership for Safe Water Phase III Self-Assessment, which identified the following priority areas to optimize treatment plant performance and distribution system operation: water audits, meter accuracy checks, and developing a formal water line replacement program and asset management system of water lines.

5.2.1.4 Planning

The City is also targeting completion of its water and wastewater system Capital Improvement Plan and its Drought Management Plan, both of which are currently in progress. The Capital Improvement Planning effort would align with the City's focus on water line replacement and asset management programs. The Drought Management Plan would align with the City's focus on drought-triggered watering restrictions.

5.2.1.5 Staff

While the City does not have resources to hire a full-time water efficiency coordinator, the City's current Utilities Director has taken an active role in the preparation of this Plan and has been designated as the City's water efficiency lead. The City has also engaged the City of Rifle Planning Commission as a stakeholder in the public outreach and review process, with the goal of better aligning land use and water use planning goals.

5.2.2 Targeted Technical Assistance and Incentives

The City is focusing more on outdoor water efficiency to reduce peak summer water use, rather than focusing on indoor water use and reducing baseline demand.

5.2.2.1 Low Water Use Landscapes

Improvements to City managed parks and irrigated areas set an example for customers, demonstrate the City's dedication to water efficiency, reduce peak outdoor water use, and can reduce potable water costs for the City. The City is focusing on the following improvements: removal of phreatophytes in raw water ditches; installing irrigation controllers and rain sensors for parks on potable where they don't exist; and installing xeriscape demo gardens and/or placing information placards on City managed areas that already have xeriscape.

5.2.2.2 Water- Efficient Industrial & Commercial Water-Using Processes

The City will provide targeted information and resources to all commercial and industrial customers to help them conduct self-audits on their water use. The City plans to give out the following tools to commercial and industrial customers:

- WaterSense "Simple Water Assessment Checklist for Commercial and Institutional Facilities," which is a checklist of 145 different water-efficient projects and practices for commercial and industrial water users to consider. The checklist prompts the customer to check whether they have evaluated, implemented, and done each project or practice.

- WaterSense brochure “Fight Leaks and Water Waste in your Facility with Water Sense,” which includes four tips and a 1-page checklist for spotting water waste.

The City will then provide some type of incentive for commercial and industrial customers to complete the self-assessment checklist(s). The type of incentive would depend on the availability of funding and approval of the governing body (City Council); possible incentives include: giveaways, recognition on the City of Rifle website, and one free test of non-fire system cross connection control device by certified City of Rifle staff.

5.2.2.3 Incentives

Give-aways suit the City better than a rebate program. The City implemented a rebate program in 2011 after the 2008 Water Conservation Plan but had very low participation and little success. The City has selected giveaways of outdoor irrigation controllers, rain sensors, and irrigation timers. These can be given to the largest irrigation customers and/or to engaged or concerned customers. This is an effective way to target the commercial and industrial sector outdoor water use. Give-aways also tie in with the City’s education efforts; the Water Department can use giveaways to incentivize participation in surveys or activities on the City’s website.

5.2.3 Ordinances and Regulations

City staff and the Planning Commission agree that ordinances and regulations are an effective and cost-efficient way of promoting water efficiency.

5.2.3.1 General Water Use Restrictions

The City is currently working on writing its Drought Management Plan to incorporate watering restrictions, including: water waste ordinance, water overspray restrictions, time of day watering restriction, and day of week restrictions. The City is using snowpack and runoff information to support early season decisions regarding potential watering restrictions and operations. These restrictions are incorporated into the Drought Management Plan and would be included into City's updated Comprehensive Plan for new development and may be adopted into the Municipal Code. The City already rolled out watering restrictions if deemed necessary, but a Drought Management Plan to engage pre-written restrictions when a set parameter triggers a drought response would allow the City to respond faster.

5.2.3.2 Landscape Design and Installation Rules and Regulations

The City’s Municipal Code outlines the seven basic principles and key considerations for water efficient landscape design as documented in the CWW. The City also already has certain turf restrictions and xeric planting requirements. General landscape requirements require that commercial, industrial, civic, and multi-family customers have less than half of the landscaped area planted with turf and over half of the landscaped area planted with xeric plants. There are no turf restrictions for single family residential, although one equivalent residential unit (EQR) is defined as up to 5,000 square feet, and lots with more irrigated area are assigned more EQRs and consequently pay higher tap fees. The City has selected to pursue regulations limiting area of turf for single family residential development.

The City would also like to pursue requirements for training and certification for landscapers and irrigation system installers. However, staff and Planning Commission members have some concerns about the expense and burden this may place on contractors, developers,

and the community. The City plans to research opportunities for trainings and certifications, specifically the City of Aspen's pilot program, before drafting any regulations.

5.2.4 Education Activities

The City has selected to pursue customer education through improving its existing water efficiency webpage. Activities would include adding content to the existing webpage, and adding links to additional webpages, interactive tools, and resources created by entities such as WaterWise, the Environmental Protection Agency (EPA) WaterSense, etc.

The City would also educate customers through bill suffers to be sent with both electronic and paper bills. Bill stuffers could contain information about how the City's tiered rate structure works and useful tips for household indoor and outdoor water efficiency. Bill stuffers would have the added benefit of providing a resource to help customers understand and manage their water bills. The City would also like to provide specific information to customers about how to use gray water, by adding language to bills so customers can navigate to the water efficiency portions of the website.

The City has also selected to pursue K-12 teacher and education programs. Young students are the next generation of water customers, and K-12 programs can have the added benefit of promoting interest in water and wastewater utility careers.

6.0 Implementation and Monitoring Plan

City staff and SGM collaboratively developed the implementation and monitoring plans to guide the City's efforts to enact the 2018 Water Efficiency Plan over the course of the 2019 to 2025 planning period.

6.1 Implementation Plan

Worksheet J outlines the City's implementation plan. By documenting specific action items, annual budget, entities and staff responsible, the City staff have an action-plan to effectively implement its activities over the seven-year planning period.

6.2 Monitoring Plan

By detailing the types of data needed, along with who is responsible to collect, process, and analyze the data, City staff have a plan to monitor the future success of each water efficiency activity.

Most demand data are collected and recorded monthly, and some data is recorded daily. (such as plant production data). Demand data would be reviewed annually to monitor the City's progress on its efficiency activities. **Worksheet K** documents demand data that would be recorded or calculated. The key demand data that would be collected and recorded are:

- Total finished treated water produced (metered as water leaving the treatment facility)
- Raw water delivered to water treatment plant before treatment
- Total treated water delivered (sum of customer meters)
- Treated water delivered by customer category
- Metered raw water delivery to City managed raw water irrigated parks

The City can calculate the following parameters during the annual review from the above demand data:

- Per capita water use
- Indoor and outdoor treated water deliveries
- Treated water peak day produced
- Non-revenue water
- Water use of specific large users, including City managed potable water irrigated parks

In addition, the City would document other data, including:

- Annual cost to implement selected efficiency activities
- Lessons learned
- Water savings estimates
- Administration data, such as:
    - Length of pipeline replaced
    - Upgrades to City facilities or City managed parks

    - Number and type of fixtures purchased and given away
    - Customer address and customer type that receive a giveaway
    - Names and contact information for schools that participate in K-12 educational activities
- Relevant public feedback
- Records of significant changes
- Customer compliance with ordinances and regulations
- Annual revenue

Worksheet L documents the details of the monitoring plan, specifically: what metrics would be used to monitor the success of each activity; who would be responsible for monitoring each activity; and the monitoring schedule.

7.0 Public Review and Approval Process

7.1 Public Review Process

The City's public review process consisted of posting the revised Water Efficiency Plan to the City's website and soliciting feedback from the public. The City posted a public notice in the Rifle Citizen Telegram (proof of publication included in **Appendix C**) for two weekly publications on June 6 and June 13, 2019. The draft Plan remained available on the City's website until adoption of the plan on August 21, 2019, remaining available for 76 days, which satisfied the 60-day period required. No public comments were received.

7.2 Efficiency Plan Approval Process

The approval process for the City was established by the City Manager. The City Manager established that the Council would review the revised Plan simultaneously with the public during the public review period, consider comments, make recommendations, and then approve.

7.2.1 City Council Approval

The City Council approved this plan on August 21, 2019 by a vote of 5 in favor and 0 opposed, with two council members not in attendance.

7.2.2 CWCB Approval

The City Council-approved Plan has been submitted to the CWCB for approval.

7.3 Water Efficiency Plan Review and Update

The CWCB requires this plan to be updated every seven years; the next revision is due in the year 2026.

8.0 References

State of Colorado. 2007. Article XX, Home Rule Cities and Towns.

Appendix A

Water Efficiency Program Measure Screening Worksheets

WORKSHEET A - WATER SUPPLY LIMITATIONS AND FUTURE NEEDS

Limitation and/or Future Need [1]	[2] Yes	[2] No	Comments on Limitation or Future Need [3] [4]	How is Limitation or Future Need Being Addressed [4]
System is in a designated critical water supply shortage area?		X	With the increased possibility of a Colorado River Compact Call and transbasin diversions, the City considers it prudent to assume that a supply shortage could occur.	The City is considering designating its 350 AF/yr Ruedi Reservoir supply or other reservoir as drought reserve
System experiences frequent water supply shortages and/or emergencies?		X	The City experienced challenges with its Beaver Creek system, but this issue has been resolved through the consolidation of facilities at the new RRWPF[A].	The new RRWPF[A] is a more robust facility and provides greater reliability.
System has substantial non-revenue water?		X	Non-revenue water includes real losses, billing system inefficiencies, and water used at unmetered taps. The City estimates that it has no unmetered taps. However, the City has ____% non-revenue water, which could be real losses or billing system inefficiencies.	The City recognizes the opportunity to further reduce real losses by implementing a water loss or leak detection program.
Experiencing high rates of population and demand growth?		X	The City experiences unpredictable patterns of population growth and decline. These circumstances present challenges and constraints. Long term, short term, and period specific growth rates are widely varying.	The RRWPF helps to support the unpredictable population growth because it has a large capacity and can support unpredicted increases in population.
Planning substantial improvements or additions?		X	New RRWPF went online in 2017.	
Increases to wastewater system capacity anticipated?		X	No wastewater system capacity increases are expected.	
Need additional drought reserves?		X	Additional drought reserves are not necessary. However, with the increased possibility of a Colorado River Compact Call and transbasin diversions, the City considers it prudent to assume that a supply shortage could occur.	The City is considering designating its 350 AF/yr Ruedi Reservoir supply or other reservoir as drought reserve
Drinking water quality issues?		X	New RRWPF went online in 2017. Water quality from the RRWPF is better.	
Aging infrastructure in need of repair?	X		Though the water treatment plant is new and in excellent condition, the distribution systme is aging and in need of repairs.	The City has distribution system improvments slated for 2018 and 2019. The City is also working on a water main replacement program to align with its water efficiency goals.
Issues with water pressure in portions of distribution system?		X		
Funding and political issues?	X		Any future rate increases will likely be met with political and public opposiltion. The RRWPF project is sales tax funded with essentially no tap fee revenue. The new 2 MG tank and 3 MG tank rehab projects were funded by certificates of participation backed by assets pledged as collateral. The number and value of assets that can be pledged as collateral is limited.	For the foreseeable future, and realtive to planned or necessary improvements, funding for conservation projects is extremely limited and will be allocated according to City Council priorities through adopted capital and operating plans consistent with assumptions incorporated into existing or revised service charges and rates. The City is in good standing to procure grants and loans.
Reliability issues?	X		The City's intake after the 2012 runoff now has a cobble bar deposited in such a way that water may not flow to the intake at low flow.	This issue will addressed through an operational and maintenance project to remove cobbles and sediment. Initial work will begin 8/28/2018.
+				
+				
+				

Instructions:
[1] This column provides a list of limitations/future needs related to planning and operating the water supply system.
[2] Enter an "X" to show whether or not the system exhibits the limitations/future needs.
[3] Include any comments regarding the limitations/future needs that may be useful to consider in the planning process.
[4] If applicable, include how the limitation/future need is being addressed.

Notes:
A: RRWPF - Rifle Regional Water Purification Facility

WORKSHEET B - HISTORICAL AND CURRENT WATER EFFICIENCY ACTIVITIES

Historical and Current Water Efficiency Activities [1]	Period of Implementation [2]	Annual Water Savings for Past Five Years (AF) [3] 2013	2014	2015	2016	2017	Total Five-Year Water Savings (AF) [4]	Average Annual Savings [5]
Foundational Activities								
Pipeline replacement - a major line was replaced in 2013, but it is difficult to determine the exact volume of water saved by reducing leakage.	***2013***	*49*	*--*	*--*	*--*	*--*	*49*	*9.8*
Water rate structure changes - additional tiers implemented in early 2013	***2013***	*210*	*--*	*--*	*--*	*--*	*210*	*42*
Water rate increases - annual 5% water rate increases in 2014 - 2018	***2014-2018***	*--*	*10*	*10*	*10*	*--*	*30*	*6*
RRWPF will reduce the plant unrecovered water from ~16% to ~2% by recycling of sludge water. The estimated savings from this are 300 AF per year. However, no savings are estimated for 2017. While unrecovered water was reduced from 373 AF in 2016 to 90 AF in 2017, total water use increased from 2016 to 2017.	***2017***	*--*	*--*	*--*	*--*	*--*	*0*	*0*
One Equivalent Residential Unit (EQR) is defined as up to 5,000 square feet of irrigated green space. Tap Fees are charged per EQR. New development with more irrigated green space must add 0.15 EQR for each additional 1,000 square feet irrigated, increasing the tap fee (Rifle Municipal Code 13-4-60).	***Before 2013***	*--*	*--*	*--*	*--*	*--*	*0*	*0*
The City conducted a water loss audit in 2019 for 2018 data using AWWA's free water audit software and plans to continue conducting these audits on an annual basis.	***2019***	*--*	*--*	*--*	*--*	*--*	*0*	*0*
+							*0*	*0*
Subtotal		**259**	**10**	**10**	**10**	**0**	**289**	**57.8**
Targeted Technical Assistance and Incentives								
Rebate program implemented in 2011. There has been low participation.	***2011-2018***	*--*	*--*	*--*	*--*	*--*	*0*	*0*
+							*0*	*0*
+								*0*
+							*0*	*0*
Subtotal		**0**	**0**	**0**	**0**	**0**	**0**	**0**
Ordinances and Regulations								
Increase in water service fee as Water Tank Surcharge. Implemented in 2 steps - Fall of 2015 and January of 2016. (Ord No. 7-2015)	***2015-2016***			*136*	*10*		*146*	*29.2*
Regulations on new construction and renovated multi-family housing, commercial development, public/civic, and industrial development to promote water conservation. (Ord No. 20 - 2014, Muni. Code Sec. 16-13). - Turf restrictions: max 50% area with turf (Sec. 16-13-80 (c)). - Xeric material: at least 50% xeric plants (Sec. 16-13-80 (c)). - Outlines the seven basic principles and key considerations for water efficient landscape design from Colorado Water Wise Best Practices Guide (CWW BPG pg 127). (Sec.16-13-20).	***2014-2018***		*50*	*50*			*100*	*20*
Site design standards for projects within Historic Core sub-district. Preferred: integrated stormwater management, drip irrigation, green roof, rain gardens, porous pavement, and underground filtration. (Ord No. 11 - 2011)	***2011-2018***	*10*	*10*	*10*	*10*	*--*	*40*	*8*
Site design standards for projects within Historic Core sub-district. Required: minimum of 50% xeric plant material. (Ord No. 11 - 2011)	***2011-2018***	*10*	*10*	*10*	*10*	*--*	*40*	*8*
Strict emergency watering restrictions in 2016 (May, June, July) in response to a raw water line break and sand inundation of the river pump station.	***2016***	*--*	*--*	*--*	*34*	*--*	*34*	*6.8*
Water restrictions enforced in fall of 2014 when the tube settlers failed and water restrictions were enforced.	***2014***	*--*	*12*	*--*	*--*	*--*	*12*	*2.4*
+							*0*	*0*
+							*0*	*0*
+							*0*	*0*
Subtotal		**20**	**82**	**206**	**64**	**0**	**372**	**74.4**
Education Activities								
Historic: Newsletter	***2009-2012***	*--*	*--*	*--*	*--*	*--*	*0*	*0*
Current: Website	***2011-2018***	*--*	*--*	*--*	*--*	*--*	*0*	*0*
+							*0*	*0*
+							*0*	*0*
+							*0*	*0*
Subtotal		**0**	**0**	**0**	**0**	**0**	**0**	**0**
Sum of above columns		*279*	*92*	*216*	*74*	*0*	*661*	*132.2*
Total Savings Based On Treated Water Production Data (AF, normalized to 2010 population)		***279***	***92***	***216***	***74***	***(384)***	***278***	*55.7*
Total Savings Based On Treated Water Production Data (gpcd)		***26.4***	***8.7***	***20.5***	***7.0***	***(36.3)***	***26.3***	*5.3*
Total Savings Based On Treated Water Production Data (%)		***15%***	***6%***	***15%***	***6%***	***-32%***	***9%***	*1.8%*

Note: Black text is from the CWCB template. *Italic blue text is added by City.*

Instructions:

[1] List the current/historical water efficiency activities previously implemented according to the SWSI Levels Framework.

[2] Enter the dates/years the activities have been/were implemented.

[3] Enter annual estimated savings for each activity. If water savings are not measurable enter n/a.

[4] Include total water savings since the activities have been implemented.

[5] Include average annual savings.

WORKSHEET C - MODIFICATIONS TO CAPITAL IMPROVEMENT PROJECTS AND WATER ACQUISITIONS

Capital Improvement Projects and Water Acquisitions [1]	Estimated Cost [2]	Action as a Result of Reduced Demands [3]			Comments [4]	Potential Cost Savings [5]
		Eliminated	Postponed	Downsized		
There will be a future need to install a 4th membrane rack consisting of 90 modules and associated components.	$1M		X		Should efficiency measure prove effective this project could possibly be moved to a later date by installing additional modules (54 modules total) on existing racks at an estimated cost of $250,000	$750,000

Note: Black text is from the CWCB template. *Italic blue text is added by City.*

Instructions:

[1] List capital improvement projects and water acquisitions being implemented or considered.

[2] Include estimated cost for the projects/water acquisitions.

[3] Specify with an "X" whether the project/water acquisition may be eliminated, postponed, or downsized as a result of water efficiency improvements.

[4] Provide additional comments (e.g. extent of postponement and/or anticipated downsizing).

[5] Include potential cost savings as a result of the elimination, postponement and/or downsizing.

WORKSHEET D - IDENTIFICATION AND SCREENING OF FOUNDATIONAL ACTIVITIES

Water Efficiency Activities for Screening [1]	State Statute Requirement [2]	Identification		Qualitative Screening [5]							Carry to Evaluation [6]	Reason for Elimination [7]
		Existing/ Potential/ Planned Activity [3]	Targeted Customer Category [4]	Has measure been budgeted?	Is measure cost effective?	Is there an above average potential to save water?	City staff resources available?	Is measure legally feasible?	Is measure technically feasible?	Notes on Additional Pros/Cons to Consider		
Metering (BP1)	**V, VII**											
Automatic Meter Reading Installation and Operations	VII	Existing	All	No	No	Yes	No	Yes	Yes			City has drive-by meters. Smart-meters are cost prohibitive.
Submetering for Large Users (Indoor and Outdoor)	VII	Potential	Large users	No	No	Yes	No	Yes	Yes			Insufficient resources. High cost to benefit.
Meter Testing and Replacement	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes			Std. Practice
Meter Upgrades	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes			Std. Practice (existing meter upgrade program)
Identify Unmetered/Unbilled Treated Water Uses	V, VII	Existing	Unmetered	No	No	No	No	Yes	Yes			City already meters 100% of taps; no potential savings.
Meter Installation - Raw water for RRWPF	VII	Existing	Utility Operations	Yes	Yes	Yes	Yes	Yes	Yes			Plant Control
Meter Installation - Potable water (customers)	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes			Std. Practice
Meter Installation - Non-potable irrigation to City property	VII	Planned	City	Yes	Yes	Yes	Yes	Yes	Yes		X	
Meter accuracy check program	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes		X	
Tracking water use by customer type	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes			Std. Practice
Tracking water use for all customers	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes			Std. Practice
Data Collection - Monitoring and Verification (BP2)	**VII, VIII**											
Frequency of Meter Reading *(Monthly meter read frequency since 2006)*	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes			Std. Practice: Rifle already reads meters & bills monthly.
Tracking Water Use by Customer Type	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes			Std. Practice: Rifle already tracks water use by customer type.
Upgrade Billing System to Track Use by Sufficient Customer Types	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes			Std. Practice: Rifle already tracks by sufficient categories.
Tracking Water Use for Large Customers (BP 13)	VII, III	Existing	Large users (commercial)	Yes	No	No	Yes	Yes	Yes			Not high likelihood that large users can/will reduce use.
Area of Irrigated Lands in Service Area (e.g. acres)	VII	Potential	Irrig. & Residential	No	No	No	No	Yes	Yes			Insufficient Resources/ Funds
Water Use Efficiency Oriented Rates and Tap Fees (BP1)	**VII, VIII**											
Volumetric Billing *(Monthly billing frequency since 2006)*	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes			Std. Practice
Water Rate Adjustments *(Water rate basis evaluation planned for 2019)*	VII	Planned	All	Yes	Yes	Yes	Yes	Yes	Yes	Planned 2019	X	
Frequency of Billing *(Monthly meter read frequency)*	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes			Std. Practice: Rifle already reads meters & bills monthly.
Inclining/Tiered Rates *(Rifle already has inclining tiered rates, and is planning another water rate basis evaluation in 2019)*	VII	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes	Planned 2019	X	
Water Budgets	VII	Potential	All	No	No	No	No	Yes	Yes			Insufficient Resources
Tap Fees with Water Use Efficiency Incentives *(Tap fee evaluation)*	VII	Planned	New developm't	Yes	Yes	Yes	Yes	Yes	Yes	Planned 2019	X	
System Water Loss Management and Control (BP3)	**V**											
System Wide Water Audits *(annually using AWWA water audit software)*	V	Potential	All	Yes	Yes	Yes	Yes	Yes	Yes	Started 2019	X	
Control of Apparent Losses (with Metering)	V	Existing	All	No	No	No	Yes	Yes	No			City already meters 100% of taps
Leak Detection and Repair	V	Potential	All	Yes	No	No	Yes	Yes	No			City has tried leak detection in the past; does not work well w/ PVC pipes. Scheduled line replacement is more cost effective.
Water Line Replacement Program *(Develop formal replacement program)*	V	Planned	All	Yes	Yes	Yes	Yes	Yes	Yes		X	
Maintain main break/leak repair capability	V	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes			Std. Practice
Assure consumers maintain service line	V	Potential	All	Yes	Yes	Yes	Yes	Yes	Yes		X	
Planning (BP2)												
Integrated Water Resources Plans		Potential	All	No	No	No	No	Yes	Yes			
Master Plans/Water Supply Plans		Potential	All	No	Yes	Yes	Yes	Yes	Yes	Overlap w/ City Comprehensive Plan update	X	
Capital Improvement Plans *(Water and wastewater CIPs under development)*		Planned	All	Yes	Yes	Yes	Yes	Yes	Yes	In progress	X	
Feasibility Studies		Potential	All	No	No	No	No	Yes	Yes			Not applicable. No feasibility studies ongoing.
Drought Management Plan (in progress)		Planned	All	Yes	Yes	Yes	Yes	Yes	Yes	In progress	X	
Asset management of water system pipelines	V	Planned	All	Yes	Yes	Yes	Yes	Yes	Yes		X	
Staff (BP4)												
Water Conservation Coordinator *(new staff)*		Potential	All	No	No	No	No	Yes	Yes			Other staffing needs are higher priorities
Designate Existing Staff as Efficiency Coordinator		Planned	All	Yes	Yes	Yes	Yes	Yes	Yes		X	
Planning Group / Committee Dedicated to Efficiency - Coordinate with Planning Commission on Efficiency Plan and Efficiency Activities		Planned	All	No	Yes	Yes	Yes	Yes	Yes		X	

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Instructions:

[1] This column provides a list of possible activities & identifies the Best Practice activity as defined in the Colorado WaterWise Guidebook of Best Practices (BP) for Municipal Water Conservation in Colorado. List additional activities identified through the planning process.

[2] This column identifies, by roman numeral, the elements that correspond with the best practices and that shall be fully considered in the planning process per Colorado State Statute 37-60-126.

[3] Specify whether the activity is "Existing" or a "Potential" activity to carry through screening by entering an "E" or "P", respectively.

[4] As applicable, specify which customer category (residential, commercial, etc.) is/would be impacted by the activity.

[5] Enter screening criteria based on qualitative goals developed in Step 3 and insert an "X" for activities that meet the listed screening criteria.

[6] Based on the screening process, indicate which activities will be carried onto the evaluation phase with an "X".

[7] If eliminated via screening, comment on why.

WORKSHEET E - IDENTIFICATION AND SCREENING OF TARGETED TECHNICAL ASSISTANCE & INCENTIVES

Water Efficiency Activities for Screening [1]	State Statute Requirement [2]	Identification					Qualitative Screening [6]							Carry to Evaluation [7]	Reason for Elimination [8]
		Existing/ Potential/ Planned Activity [3]	SWSI Levels [4]			Targeted Customer Category [5]	Has measure been budgeted?	Is measure cost effective for utility?	Is there an above average potential to save water?	City staff resources available?	Is measure legally feasible?	Is measure technically feasible?	Notes on Additional Pros/Cons to Consider		
			Level 1: Utility & Municipal Facilities	Level 2: Largest Customer Demands	Level 3: Remaining Customer Demands										
Installation of Water Efficient Fixtures and Appliances (BP 12, 14)	I														
Indoor Audits		Potential			X	All	No	No	No	No	Yes	Yes			Insufficient resources, low participation
Toilet Retrofits		Potential			X		No	No	No	No	Yes	Yes			Insufficient resources
Urinal Retrofits	I	Potential			X	All	No	No	No	No	Yes	Yes			Insufficient resources
Showerhead Retrofits		Potential			X		No	No	No	No	Yes	Yes			Insufficient resources
Faucet Retrofits (e.g. aerator installation)		Potential			X		No	No	No	No	Yes	Yes			Insufficient resources
Water Efficient Washing Machines		Potential			X		No	No	No	No	Yes	Yes			Insufficient resources
Water Efficient Dishwashers	I	Potential			X	All	No	No	No	No	Yes	Yes			Redundant w/ Xcel Energy's program
Efficient Swamp Cooler and Air Conditioning Use	I	Potential			X	All	No	No	No	No	Yes	Yes			Insufficient resources
Low Water Use Landscapes (BP 8,9,10)	II														
Drought Resistant Vegetation	II	Potential	X			All	No	No	Yes	No	Yes	Yes			Insufficient resources, low participation
Removal of Phreatophytes - *in City managed irrigation ditches for raw water irrigation of City Parks*	II	Existing	X			City raw irrigated parks	Yes	Yes	Yes	Yes	Yes	Yes		X	
Irrigation Efficiency Evaluations/Outdoor Water Audits (BP 10)	VI	Potential		X		All	No	No	Yes	No	Yes	Yes			Insufficient resources, low participation
Irrigation Scheduling/Timing	II	Potential		X		All	No	No	Yes	No	Yes	Yes			Improve irrigation timing with ordinance.
Outdoor Irrigation Controllers - *targeted giveaways of smart irrigation controler or system timers, esp. for large customers. Target 5 of largest customers with irrigation, evaluate participation and success.*	II	Potential		X		C&I, High-Use-Residential	No	Yes	Yes	Yes	Yes	Yes	Easier than rebate	X	
Outdoor Irrigation Controllers - *implement on City managed parks / green spaces that are on potable water.*	II	Potential		X		City	No	Yes	Yes	Yes	Yes	Yes		X	
Rain Sensors - *targeted giveaways of smart irrigation controler or system timers, esp. for large customers. Start with 50, evaluate participation.*	II	Potential		X		C&I, High-Use-Residential	No	Yes	Yes	Yes	Yes	Yes	Easier than rebate	X	
Rain Sensors - *implement on City managed parks / green spaces*	II	Potential		X		City	No	Yes	Yes	Yes	Yes	Yes		X	
Residential Outdoor Meter Installations	II	Potential			X	All	No	No	Yes	No	Yes	No			Insufficient resources, low participation, greater risk of freezing.
Xeriscape - *xeriscape demonstration gardens on City managed parks / green spaces*	II	Potential	X			City	No	Yes	Yes	Yes	Yes	Yes		X	
Other Low Water Use Landscapes - *Implement on City managed parks / green spaces*	II	Potential	X			City	No	Yes	Yes	Yes	Yes	Yes		X	
Irrigation Equipment Retrofits	II	Potential		X	X	All	No	No	Yes	No	Yes	Yes			Insufficient resources, low participation
Water- Efficient Industrial & Commercial Water-Using Processes (BP 14)	III														
Specialized Nonresidential Surveys, Audits and Equipment Efficiency Improvements (BP 14) - *Commercial & Industrial Self-Audit Assistance & Incentive: Provide WaterSense C&I self-audit checklist, with incentive for completion (such as giveaways, website recognition, free cross connection test, etc.)*	III, IX	Potential		X	X	C&I	No	Yes	Yes	Yes	Yes	Yes		X	
Commercial Indoor Fixture and Appliance Rebates/Retrofits	X	Potential			X	C&I	No	No	No	No	Yes	Yes			No success with past rebate program.
Cooling Equipment Efficiency	III	Potential		X		C&I	No	No	No	No	Yes	Yes			Insufficient resources, low participation
Restaurant equipment	III	Potential			X	C&I	No	No	No	No	Yes	Yes			Insufficient resources, low participation
Incentives (BP 12)	X														
Toilet Rebates	X	Potential			X	All	No	No	No	No	Yes	Yes			No success with past rebate program.
Urinal Rebates	X	Potential			X	All	No	No	No	No	Yes	Yes			No success with past rebate program.
Showerhead Rebates	X	Potential			X	All	No	No	No	No	Yes	Yes			No success with past rebate program.
Water Efficient Faucet or Aerator Rebates	X	Potential			X	All	No	No	No	No	Yes	Yes			No success with past rebate program.
Water Efficient Washing Machine Rebates	X	Potential			X	All	No	No	No	No	Yes	Yes			No success with past rebate program.
Water Efficient Dishwasher Rebates	X	Potential			X	All	No	No	No	No	Yes	Yes			No success with past rebate program.
Efficient Irrigation Equipment Rebates	X	Potential			X	All	No	No	No	No	Yes	Yes			No success with past rebate program.
Landscape Water Budgets Information and Customer Feedback (BP 7)	VI	Potential			X	All	No	No	Yes	No	Yes	Yes			Insufficient resources
Turf Replacement Programs/Xeriscape Incentives	X	Potential		X	X	All	No	No	Yes	No	Yes	Yes			Insufficient resources

WORKSHEET E - IDENTIFICATION AND SCREENING OF TARGETED TECHNICAL ASSISTANCE & INCENTIVES

Water Efficiency Activities for Screening [1]	State Statute Requirement [2]	Identification					Qualitative Screening [6]							Carry to Evaluation [7]	Reason for Elimination [8]
		Existing/ Potential/ Planned Activity [3]	SWSI Levels [4]			Targeted Customer Category [5]	*Has measure been budgeted?*	*Is measure cost effective for utility?*	*Is there an above average potential to save water?*	*City staff resources available?*	*Is measure legally feasible?*	*Is measure technically feasible?*	Notes on Additional Pros/Cons to Consider		
			Level 1: Utility & Municipal Facilities	Level 2: Largest Customer Demands	Level 3: Remaining Customer Demands										
Give-aways: *(Irrigation system timers). Start with 50, evaluate participation.*	*I, X*	*Potential*		*X*	*X*	*C&I, High-Use-Residential*	*No*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Easier than rebate*	*X*	

Note: Black text is from the CWCB template. *Italic blue text is added by City.*

Instructions:

[1] This column provides a list of activities & if applicable, identifies the Best Practice activity as defined under *Colorado WaterWise Guidebook of Best Practices (BP) for Municipal Water Conservation in Colorado*. List additional activities identified through the planning process.

[2] This column identifies, by roman numeral, the elements that correspond with the best practices and that shall be fully considered in the planning process per Colorado State Statute 37-60-126.

[3] Specify whether the activity is an "Existing" or "Potential" activity to carry through screening by entering an "E" or "P", respectively.

[4] Specify which level the historical/potential activities fall under by entering an "X" in the appropriate column.

> *Level 1: Utility/Municipal Facility Water Efficiency – Applies to the water use at facilities that the provider and/or municipality directly manages and has direct control over. This could include administration buildings, recreational centers, parks, etc. These facilities generally have water use patterns that can be easily characterized and managed. Improving water efficiency at these facilities positions the provider as a leader in water efficiency who is leading by example.*
>
> *Level 2: Management of Largest Customer Demands – Demand management activities targeting large water users can be some of the most cost effective activities. If providers have limited funds, working with fewer, but larger, water users to customize water efficiency activities can provide significant water savings relative to the financial investment. Large water user customers may consist of industrial firms (such as factories and breweries), commercial properties and the larger residential water users.*
>
> *Level 3: Management of Remaining Customer Demands – Demand management activities that focus on the customer service area as a whole and can be more difficult to monitor and less cost effective than focusing on the Level 1 and 2 customers, yet can result in significant savings. From a business perspective, it may make the most sense to initially focus on the Level 1 and 2 customers and then target other Level 3 customer categories within the service area.*

[5] As applicable, specify which customer category (residential, commercial, etc.) is/would be impacted by the activity.

[6] Enter screening criteria based on qualitative goals developed in Step 3 and insert an "X" for activities that meet the listed screening criteria.

[7] Based on the screening process, indicate which activities will be carried on the evaluation phase with an "X".

[8] If eliminated via screening, comment on why.

WORKSHEET F - IDENTIFICATION AND SCREENING OF ORDINANCES AND REGULATIONS

Water Efficiency Activities for Screening [1]	State Statute Requirement [2]	Identification					Qualitative Screening [6]							Carry to Evaluation [7]	Reason for Elimination [8]
		Existing/ Potential Activity [3]	SWSI Framework Levels [4] Level 1 Customer Type(s) within the Existing Service Area	Level 2 New Development	Level 3 Point of Sales on Existing Building Stock	Targeted Customer Category [5]	Has measure been budgeted?	Is measure cost effective for utility?	Is there an above average potential to save water?	City staff resources available?	Is measure legally feasible?	Is measure technically feasible?	Notes on Additional Pros/Cons to Consider		
General Water Use Regulations	IX														
Water Waste Ordinance (BP 5) - *incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.*	*IX*	*Planned*	*X*			*All, esp. residential*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Aligns w/ Drought Mgmt. Plan & Comprehensive Plan*	*X*	
Time of Day Watering Restriction - *incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.*	*IX*	*Planned*	*X*			*All, esp. residential*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Aligns w/ Drought Mgmt. Plan & Comprehensive Plan*	*X*	
Day of Week Watering Restriction - *incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.*	*IX*	*Planned*	*X*			*All, esp. residential*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Aligns w/ Drought Mgmt. Plan & Comprehensive Plan*	*X*	
Water Overspray Limitations - *incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.*	*IX*	*Planned*	*X*			*All, esp. residential*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Aligns w/ Drought Mgmt. Plan & Comprehensive Plan*	*X*	
Landscape Design/Installation Rules and Regulations	IX														
Rules and Regulations for Landscape Design/Installation (BP 9) *(Municipal Code Sec. 16-13-20 outlines the seven basic principles and key considerations for water efficient landscape design from Colorado Water Wise Best Practices Guide (pg 127)).*	*IX, II*	*Existing*		*X*	*X*	*Comm. Ind. City, Multi-fam Resid.*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Landscaper Training and Certification (BP 8)	*IX*	*Potential*	*X*	*X*	*X*	*All with irrig.*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Irrigation System Installer Training and Certification (BP 8). *Formerly had a sprinkler system permit ordinance in Section 14 of Municipal Code.*	*IX*	*Potential*	*X*	*X*	*X*	*All with irrig.*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Soil Amendment Requirements (BP 9) *(included in Municipal Code Sec. 16-13-20, which outlines the seven basic principles and key considerations for water efficient landscape design).*	*IX*	*Existing*		*X*	*X*	*All with irrig.*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Turf Restrictions (BP 9): *(General landscape requirements for commercial, industrial, civic, and multi-family uses may have a maximum of 50% area with Turf (Sec. 16-13-80 (c))*	*IX, II*	*Existing*		*X*	*X*	*Comm. Ind. City, Multi-fam Resid.*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Turf Restrictions (BP 9): *(EQR defined as up to 5,000 SF. Irrigated area above that is allowed but charged a higher tap fee (Sec. 13-4-60)). Update code to include regulations limiting area of turf for sinlge family residential development.*	*IX, II*	*Existing*		*X*	*X*	*Single-fam. Resid.*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Can improve on existing regs*	*X*	
Xeriscape Requirement (BP 9): (General landscape requirements for commercial, industrial, civic, and multi-family uses must have at least 50% xeric plants (Sec. 16-13-80 (c))	*IX, II*	*Existing*		*X*	*X*	*Comm. Ind. City, Multi-fam Resid.*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Xeriscape Requirement (BP 9): (General landscape requirements for single-family residential)	*IX, II*	*Potential*		*X*	*X*	*Single-fam. Resid.*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Irrigation Equipment Requirements	*IX*	*Potential*	*X*	*X*	*X*	*All with irrig.*	*NA*	*No*	*Np*	*Yes*	*Yes*	*Yes*			*Req'ts impact low income customers*
Outdoor Water Audits/Irrigation Efficiency Regulations (BP 10)	*IX*	*Potential*	*X*			*All with irrig.*	*NA*	*No*	*No*	*No*	*Yes*	*Yes*			*Insufficient Resources*
Outdoor Green Building Construction (BP 8,9)	*IX*	*Potential*		*X*	*X*	*All*	*NA*	*No*	*No*	*No*	*Yes*	*Yes*			*Insufficient Resources*
Indoor and Commercial Regulations	IX														
High Efficiency Fixture and Appliance Replacement (BP 12)	*I*	*Existing*	*X*		*X*	*All*	*NA*	*No*	*No*	*No*	*Yes*	*Yes*			*Insufficient Resources*
Commercial Cooling and Process Water Requirements (BP 14)	*III*	*Potential*	*X*	*X*	*X*	*City, Comm.*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	*Mostly applies to CoGen Plant*
Green Building Construction (BP 12)	*III, IX*	*Potential*		*X*	*X*	*All*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Indoor Plumbing Requirements (BP 12)	*III, IX*	*Potential*	*X*	*X*	*X*	*All*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
City Facility Requirements (BP 12)	*VI*	*Existing*	*X*			*City*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*			*Standard Practice*
Required Indoor Residential Audits (BP 13)	*VI*	*Potential*	*X*			*Residential*	*NA*	*No*	*No*	*No*	*Yes*	*Yes*			*Insufficient Resources*
Required Indoor Commercial Audits (BP 14)	*IX*	*Potential*	*X*			*Commercial*	*NA*	*No*	*No*	*No*	*Yes*	*Yes*			*Insufficient Resources*
Commercial Water Wise Use Regulations (Car Washes, Restaurants, etc.)	*III, IX*	*Potential*	*X*			*Commercial*	*NA*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*High use customers*	*X*	

Note: Black text is from the CWCB template. *Italic blue text is added by City.*

WORKSHEET F - IDENTIFICATION AND SCREENING OF ORDINANCES AND REGULATIONS

Water Efficiency Activities for Screening [1]	State Statute Requirement [2]	Identification						Qualitative Screening [6]							Carry to Evaluation [7]	Reason for Elimination [8]
		Existing/ Potential Activity [3]	SWSI Framework Levels [4]			Targeted Customer Category [5]		*Has measure been budgeted?*	*Is measure cost effective for utility?*	*Is there an above average potential to save water?*	*City staff resources available?*	*Is measure legally feasible?*	*Is measure technically feasible?*	Notes on Additional Pros/Cons to Consider		
			Level 1 Customer Type(s) within the Existing Service Area	Level 2 New Development	Level 3 Point of Sales on Existing Building Stock											

Instructions:

[1] This column provides a list of possible activities & if applicable identifies the Best Practice activity as defined under Colorado WaterWise Guidebook of Best Practices (BP) for Municipal Water Conservation in Colorado. List additional activities identified through the planning process.

[2] This column identifies, by roman numeral, the elements that correspond with the best practices and that shall be fully considered in the planning process per Colorado State Statute 37-60-126.

[3] Specify whether the activity is an "Existing" or "Potential" activity to carry through screening by entering an "E" or "P", respectively.

[4] For current/historical activities, specify which level the activities fall under by entering an "X" in the appropriate column.

Level 1: Existing Service Area - This may apply to the whole service area (100% penetration rate) or specific categories of customers, such as single-family homes or commercial. The majority of regulations and ordinances in Colorado currently focus on this tier of customers.

Level 2: New Construction Regulations – Communities experiencing large growth rates can significantly decrease future water demands by enforcing regulations and ordinances at Level 2. This level applies to ordinances and regulations that target new development. For example, landscape ordinances requiring proper soil amendments for all new residential and commercial construction is a relatively common ordinance implemented at Level 2. While these regulations are proactive in that they are addressing water efficiency at the construction phase, additional costs necessary to meet a regulation (e.g. extra costs for soil amendments) must be borne by either the seller/developer or purchaser of the newly constructed property. Depending on the scale and magnitude of additional costs involved, this could meet a certain level of opposition.

Level 3: Point of Sales Ordinances for Existing Building Stock – Communities that experience relatively high rates of turnover can most significantly benefit from Level 3 ordinances. Regulations and ordinances enforced at a Level 3 require water efficient modifications to be made (e.g. replacement of certain fixtures and appliances with more water efficient fixtures and appliances) upon sale of the property. Similar to Level 2, Level 3 ordinances and regulations could meet opposition. For instance, the costs for new fixtures and appliances need to be incurred by some entity and this often ends up being the purchaser or seller of the home. In 2010, the Water Conservation Sub-Committee of the Inter Basin Compact Committee recommended investigating statewide real estate point of sale legislation in the coming years. This would address replacement of household fixtures such as toilets, dishwashers and clothes washers with efficient models. Education on the long-term cost saving benefits as a result of higher water efficient fixture and appliances may help reduce concerns for purchasers that have to bear the upfront costs.

[5] As applicable, specify which customer category (residential, commercial, etc.) is/would be impacted by the activity.

[6] Enter screening criteria based on qualitative goals developed in Step 3 and insert an "X" for activities that meet the listed screening criteria.

[7] Based on the screening process, indicate which activities will be carried on the evaluation phase with an "X".

[8] If eliminated via screening, comment on why.

WORKSHEET G - IDENTIFICATION AND SCREENING OF EDUCATION ACTIVITIES

Water Efficiency Activities for Screening [1]	State Statute Requirement [2]	Identification					Qualitative Screening [6]							Carry to Evaluation [7]	Reason for Elimination [8]
		Existing/ Potential Activity [3]	SWSI Framework Levels [4]			Targeted Customer Category [5]	*Has measure been budgeted?*	*Is measure cost effective for utility?*	*Is there an above average potential to save water?*	*City staff resources available?*	*Is measure legally feasible?*	*Is measure technically feasible?*	Notes on Additional Pros/Cons to Consider		
			Level 1 One-Way	Level 2 One-Way with Feedback	Level 3 Two-way communication										
Customer Education (BP6)	**VI**														
Bill Stuffers	*VI*	*Potential*	*X*			*All*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Newsletter		*Potential*	*X*				*No*	*Yes*	*No*	*No*	*Yes*	*Yes*			*Webpage more effective, easier to keep current*
Newspaper Articles	*VI*	*Potential*	*X*			*Newspaper Readers*	*No*	*No*	*No*	*No*	*Yes*	*Yes*			*Webpage more effective, easier to keep current*
Mass Mailings		*Potential*	*X*			*All*	*No*	*No*	*No*	*No*	*Yes*	*Yes*			*Lack of staff*
Web Pages *(Improve & add to existing web pages)*		*Existing*	*X*	*X*		*Website Viewers*	*No*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Water Fairs		*Potential*		*X*	*X*	*Students, Select public*	*No*	*No*	*No*	*No*	*Yes*	*Yes*			*Lack of staff*
K-12 Teacher and Classroom Education Programs	*VI*	*Potential*			*X*	*Select Students*	*No*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Promote interest in utility careers*	*X*	
Message Development/Campaign	*VI*	*Potential*	*X*			*Varies on Media*	*No*	*No*	*Yes*	*No*	*Yes*	*Yes*			*High cost*
Interactive Websites *(provide links to useful webpages created by EPA, WaterWise, etc.)*	*VI*	*Potential*			*X*	*Website Viewers*	*No*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Social Networking (e.g. Facebook)	*VI*	*Potential*			*X*	*Social media users*	*No*	*No*	*Yes*	*No*	*Yes*	*Yes*			*Lack of staff/funds, small audience*
Customer Surveys	*VI*	*Potential*		*X*		*All*	*No*	*No*	*Yes*	*No*	*Yes*	*Yes*			*Lack of staff, small audience*
Focus Groups	*VI*	*Potential*			*X*	*Select Individuals*	*No*	*No*	*Yes*	*No*	*Yes*	*Yes*			*Lack of staff/funds*
Citizen Advisory Boards	*VI*	*Potential*			*X*	*Select Individuals*	*No*	*No*	*No*	*No*	*Yes*	*Yes*			*Lack of staff/funds/content*
Provide specific info to customers about gray water		*Potential*	*X*			*All*	*No*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*		*X*	
Technical Assistance	**VI**														
Customer Water Use Workshops	*VI*	*Potential*			*X*	*Select Customers*	*No*	*No*	*No*	*No*	*Yes*	*Yes*			*Lack of staff*
Landscape Design and Maintenance Workshops	*VI*	*Potential*			*X*	*Select Customers*	*No*	*No*	*No*	*No*	*Yes*	*Yes*			*Unpredictable cost impacts*
Xeriscape Demonstration Garden (BP 8)	*VI*	*Potential*	*X*			*Visitors*	*No*	*No*	*No*	*No*	*Yes*	*Yes*			*Unpredictable cost impacts*
Water Conservation Expert Available	*VI*	*Potential*			*X*	*Users*	*No*	*No*	*No*	*No*	*Yes*	*Yes*			*Lack of staff/skills/funds*

Note: Black text is from the CWCB template. *Italic blue text is added by City.*

[1] This column provides a list of possible activities & if applicable identifies the Best Practice activity as defined under Colorado WaterWise Guidebook of Best Practices (BP) for Municipal Water Conservation in Colorado. List additional activities identified through the planning process.

[2] This column identifies, by roman numeral, the elements that correspond with the best practices and that shall be fully considered in the planning process per Colorado State Statute 37-60-126.

[3] Specify whether the activity is an "Existing" or "Potential" activity to carry through screening by entering an "E" or "P", respectively.

[4] For current/historical activities, specify which level the activities fall under by entering an "X" in the appropriate column.

Level 1: One-Way Education – Information is conveyed to the public without tracking or specific follow-up. This method of communication is the most common mode of communication among water providers in Colorado. It is used to convey water efficiency messages and can be very effective in advertising and informing the public on other water efficiency activities (e.g. rebate program). Popular forms include bill stuffers, email, untracked web sites, and xeriscape demonstration gardens.

Level 2: One-Way Education with Feedback – Water providers convey information to the public and receive feedback on the effectiveness and applicability of its water efficiency activities. Tracking of public responses can also provide information on who is receiving and reacting to the information. This enables providers to adjust a message based on feedback. Examples of one-way education with feedback include water festivals, interactive websites, and customer surveys

Level 3: Two-Way Education – Providers actively engage customers in developing and implementing the water efficiency plan. This can involve the development of stakeholder advisory boards or focus groups to address specific water efficiency issues. It can be an excellent medium for receiving comprehensive feedback from the customer perspective. Section 5.2 provides additional information on Level 3 Two-Way Education.

[5] As applicable, specify which customer category (residential, commercial, etc.) is/would be impacted by the activity.

[6] Enter screening criteria based on qualitative goals developed in Step 3 and insert an "X" for activities that meet the listed screening criteria.

[7] Based on the screening process, indicate which activities will be carried on the evaluation phase with an "X".

[8] If eliminated via screening, comment on why.

WORKSHEET H - EVALUATION AND SELECTION OF WATER EFFICIENCY ACTIVITIES

Water Efficiency Activities for Evaluation [1]	Existing/ Planned/ Potential Activity [2]	Targeted Customer Category [3]	Review of Qualitative Screening: Qualitative Goals [4]						Implementation Period of Historical Activities		Historical Total Water Savings (AF)	Implementation Period of New Activities		Evaluation: Projected Water Savings [5]		Projected Implementation Costs [6]	Quantitative Goals [7]				Final Selection [8]	
																	Reduce non-revenue water & system losses to <10%.	Reduce summer peak day water use by 10%	Maintain sufficient revenue stream to cover debts.	Notes on Additional Pros/Cons to Consider	Selected for Implementation	If Eliminated, Reason Why Eliminated
			Has measure been budgeted?	Is measure cost effective?	Is there an above average potential to save water?	City staff resources available?	Is measure legally feasible?	Is measure technically feasible?						Total Water Savings (AF)	Average Annual Water Savings (AF)						
Foundational Activities																						
Inclining/Tiered Rates (Rifle already has inclining tiered rates, and is planning another water rate basis evaluation in 2019)	Existing	All	Yes	Yes	Yes	Yes	Yes	Yes	2013	2014	210	-	-	-	-	Existing		X	X		X	
Water Rate Adjustments (Water rate basis evaluation planned for 2019)	Planned	All	Yes	Yes	Yes	Yes	Yes	Yes	2014	2017	30	2020	2025	200	40	$35,000 (Rate study)		X	X		X	
Tap Fees with Water Use Efficiency Incentives (Tap fee evaluation)	Planned	New developm't	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2020	2025	35	7	$7,000 (Tap fee study)	X		X		X	
Meter Installation - Non-potable irrigation to City property	Planned	City	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	24	4	$1,000	X		X		X	
Meter accuracy check program	Planned	All	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2020	3	3	Already budgeted	X		X	Aligns with AWWA Partnership for Safe Water Program.	X	
System Wide Water Audits (annually using AWWA water audit software)	Planned	All	Yes	Yes	Yes	Yes	Yes	Yes	2019	2019	-	2020	2025	Unk.	Unk.	N/A (using AWWA free water audit software)	X		X	City started water loss audits in 2019. Aligns with AWWA Partnership for Safe Water Program.	X	
Water Line Replacement Program (Develop formal replacement program)	Planned	All	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2020	2025	20	4	$120 - $150 (cost per linear foot)	X			Replacing aging lines reduces risk of leaks. Aligns with AWWA Partnership for Safe Water Program.	X	
Asset management of water system pipelines	Planned	All	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	Unk.	Unk.	N/A (Robert Burns)	X			Used to guide the water line replacement program. Better understanding of system. Aligns with AWWA Partnership for Safe Water Program.	X	
Capital Improvement Plans (Water and wastewater CIPs under development)	Planned	All	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2016	2025	Unk.	Unk.	N/A (Robert Burns)	X		X	Already under development. Aligns with water line replacement program. Helps City plan costs. Will help guide water rate & tap fee study.	X	
Drought Management Plan (in progress)	Planned	All	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	Unk.	Unk.	N/A (Robert Burns)		X		Helps to guide ordinances.	X	
Designate Existing Staff as Efficiency Coordinator	Planned	All	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2018	2025	Unk.	Unk.	N/A (Robert Burns)				Robert is already taking on this role by spearheading the efficiency plan update and the drought management plan.	X	
Planning Group / Committee Dedicated to Efficiency - Coordinate with Planning Commission on Efficiency Plan and Efficiency Activities	Planned	All	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2018	2025	Unk.	Unk.	N/A				Planning Commission is also involved in the Comprehensive Plan and other land use decisions. Their involvement will help align the goals of water and land use planning.	X	
Master Plans/Water Supply Plans	Potential	All	No	Yes	Yes	Yes	Yes	Yes	-	-	-	-	-	Unk.	Unk.	N/A						Council wishes to finish updating the City's Comprehensive Plan, then update Master Plans / Water Supply Plans all at once.
Assure consumers maintain service line	Potential	All	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2018	2025	14	2	N/A	X		X	Help customers catch leaks and avoid high water bills.	X	
Targeted Technical Assistance and Incentives																						
Removal of Phreatophytes - in City managed irrigation ditches for raw water irrigation of City Parks	Existing	City raw irrigated parks	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	6	1	$1,000 per year	X				X	
Outdoor Irrigation Controllers - targeted giveaways of smart irrigation controller or system timers, esp. for large customers. Target 5 of largest customers with irrigation, evaluate participation and success.	Potential	C&I, High-Use-Residential	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	6	1	$1,000 (5 at $200 each)		X		Effective way to target commercial & industrial sector outdoor water use. Help residential customers reduce water bill.	X	
Outdoor Irrigation Controllers - implement on City managed parks / green spaces that are on potable water.	Potential	City	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	12	2	$2,000 (10 at $200 each)		X			X	
Rain Sensors - targeted giveaways of rain sensors, esp. for large customers. Start with 50, evaluate participation.	Potential	C&I, High-Use-Residential	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	36	6	$1,500 (50 at $30 each)		X		Effective way to target commercial & industrial sector outdoor water use. Help residential customers reduce water bill.	X	
Rain Sensors - implement on City managed parks / green spaces	Potential	City	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	6	1	$300 (10 at $30 each)		X			X	
Xeriscape - xeriscape demonstration gardens on City managed parks / green spaces	Potential	City	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	12	2	$1.50-$2.50 per sq. Ft. ($65,000-$109,000 per acre)		X		Include educational placards about plants included to educate public about xeric plants. Library already has a xeriscape garden, could add placards to this, and have fliers at library.	X	
Other Low Water Use Landscapes - Implement on City managed parks / green spaces	Potential	City	No	Yes	Yes	Yes	Yes	Yes	-	-	-	-	-	42	7	$1.50-$2.50 per sq. Ft. ($65,000-$109,000 per acre)		X				Other higher priorities for City staff. Savings do not outweigh cost and difficulty.
Specialized Nonresidential Surveys, Audits and Equipment Efficiency Improvements (BP 14) - Commercial & Industrial Self-Audit Assistance & Incentive: Provide WaterSense C&I self-audit checklist, with incentive for completion (such as giveaways, website recognition, free cross connection test, etc.)	Potential	Commercial & Industrial (C&I)	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2020	2025	24	4	Depends on incentive chosen. Targeting <$1,000	X	X		Cost & resource effective way to target the C&I sector. Can help large users identify & fix leaks. WaterSense self-audits give C&I users specific action items to more efficiently use water indoor and outdoor.	X	
Give-aways: (Give away irrigation system timers). Start with 50, evaluate participation.	Potential	C&I, High-Use-Residential	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	18	3	$1,500 (50 at $30 each)		X		Effective way to target commercial & industrial sector outdoor water use. Help residential customers reduce water bill.	X	

WORKSHEET H - EVALUATION AND SELECTION OF WATER EFFICIENCY ACTIVITIES

Water Efficiency Activities for Evaluation [1]	Existing/ Planned/ Potential Activity [2]	Targeted Customer Category [3]	Review of Qualitative Screening — Qualitative Goals [4]						Implementation Period of Historical Activities		Historical Total Water Savings (AF)	Implementation Period of New Activities		Evaluation — Projected Water Savings [5]		Projected Implementation Costs [6]	Quantitative Goals [7]				Final Selection [8]	
			Has measure been budgeted?	Is measure cost effective?	Is there an above average potential to save water?	City staff resources available?	Is measure legally feasible?	Is measure technically feasible?						Total Water Savings (AF)	Average Annual Water Savings (AF)		Reduce non-revenue water & system losses to <10%.	Reduce summer peak day water use by 10%	Maintain sufficient revenue stream to cover debts.	Notes on Additional Pros/Cons to Consider	Selected for Implementation	If Eliminated, Reason Why Eliminated
Ordinances and Regulations																						
Rules and Regulations for Landscape Design/Installation (BP 9) (Municipal Code Sec. 16-13-20 outlines the seven basic principles and key considerations for water efficient landscape design from Colorado Water Wise Best Practices Guide (pg. 127)).	Existing	Comm. Ind. City, Multi-fam Resid.	NA	Yes	Yes	Yes	Yes	Yes	2014	2018	20	2019	2025	6	1	Low, w/out enforcement		X		Existing regulation. Past success.	X	
Soil Amendment Requirements (BP 9) (included in Municipal Code Sec. 16-13-20, which outlines the seven basic principles and key considerations for water efficient landscape design).	Existing	All with irrig.	NA	Yes	Yes	Yes	Yes	Yes	2014	2018	-	2019	2025	Unk.	Unk.	$275 - $500 per 1,000 sq. ft.		X		Existing regulation. Past success.	X	
Turf Restrictions (BP 9): (General landscape requirements for commercial, industrial, civic, and multi-family uses may have a maximum of 50% area with Turf (Sec. 16-13-80 (c))	Existing	Comm. Ind. City, Multi-fam Resid.	NA	Yes	Yes	Yes	Yes	Yes	2014	2018	40	2018	2025	21	3	Low, w/out enforcement		X		Existing regulation. Past success.	X	
Turf Restrictions (BP 9): (EQR defined as up to 5,000 SF. Irrigated area above that is allowed but charged a higher tap fee (Sec. 13-4-60)). **Update code to include regulations limiting area of turf for single family residential development.**	Existing	Single-fam. Resid.	NA	Yes	Yes	Yes	Yes	Yes	2012	2018	Unk.	2012	2018	Unk.	Unk.	Low, w/out enforcement		X	X	Existing regulation requiring higher tap fee for larger lawns, with past success. Planning commission interested in exploring turf restriction regulations for new single family.	X	
Xeriscape Requirement (BP 9): (General landscape requirements for commercial, industrial, civic, and multi-family uses must have at least 50% xeric plants (Sec. 16-13-80 (c))	Existing	Comm. Ind. City, Multi-fam Resid.	NA	Yes	Yes	Yes	Yes	Yes	2014	2018	40	2018	2025	7	1	$1.50-$2.50 per sq. Ft. ($65,000-$109,000 per acre)		X		Existing regulation. Past success.	X	
Water Waste Ordinance (BP 5) - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	Planned	All, esp. residential	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	30	5	Low, w/out enforcement		X		Help's City's ability to respond to a drought with restrictions. Aligns with drought management plan and comprehensive plan update.	X	
Time of Day Watering Restriction - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	Planned	All, esp. residential	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	0	0	Low, w/out enforcement		X		Help's City's ability to respond to a drought with restrictions. Aligns with drought management plan and comprehensive plan update.	X	
Day of Week Watering Restriction - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	Planned	All, esp. residential	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	0	0	Low, w/out enforcement		X		Help's City's ability to respond to a drought with restrictions. Aligns with drought management plan and comprehensive plan update.	X	
Water Overspray Limitations - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	Planned	All, esp. residential	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	30	5	Low, w/out enforcement		X		Help's City's ability to respond to a drought with restrictions. Aligns with drought management plan and comprehensive plan update.	X	
Landscaper Training and Certification (BP 8)	Potential	All with irrig.	NA	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	Unk.	Unk.	Low cost for City, may have high cost to landscapers & development		X		Potentially cost prohibitive to landscapers. **Research opportunities for trainings/ certifications. Specifically, City of Aspen's pilot program.**	X	
Irrigation System Installer Training and Certification (BP 8). Formerly had a sprinkler system permit ordinance in Section 14 of Municipal Code.	Potential	All with irrig.	NA	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	Unk.	Unk.	Low cost for City, may have high cost to installers & development		X		Potentially cost prohibitive to irrigation installers, costs would be passed on to consumers and may discourage re-design. **Research opportunities for trainings/ certifications. Specifically, City of Aspen's pilot program.**	X	
Xeriscape Requirement (BP 9): (General landscape requirements for single-family residential)	Potential	Single-fam. Resid.	NA	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	12	2	$1.50-$2.50 per sq. Ft. ($1,500-$2,000 per 1,000 sq. ft.)		X				Too much expense placed on single family homeowners, not equitable. Not politically favorable.
Commercial Cooling and Process Water Requirements (BP 14)	Potential	City, Comm.	NA	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	Unk.	Unk.	Low, w/out enforcement				Mostly applies to CoGen Plant.		Does not apply to many customers. Commercial is reliable revenue stream.
Green Building Construction (BP 12)	Potential	All	NA	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	Unk.	Unk.	Low, w/out enforcement						Too much expense placed on developers and community.
Indoor Plumbing Requirements (BP 12)	Potential	All	NA	Yes	Yes	Yes	Yes	Yes				2019	2025	Unk.	Unk.	Low, w/out enforcement	X	X				Overlaps with existing plumbing code regulations
Commercial Water Wise Use Regulations (Car Washes, Restaurants, etc.)	Potential	Commercial	NA	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	Unk.	Unk.	Low, w/out enforcement		X				
Education Activities																						
Web Pages (Improve & add to existing web pages)	Existing	Website Viewers	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	18	3	N/A				Help customers manage their water bill.	X	
Bill Stuffers (electronic and paper)	Potential	All	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	18	3	$2,000				Help customers manage their water bill.	X	
K-12 Teacher and Classroom Education Programs	Potential	Select Students	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	18	3	$100 - $1,000				Promote interest in utility careers.	X	
Interactive Websites (provide links to useful webpages created by EPA, Water Wise, etc.)	Potential	Website Viewers	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	18	3	N/A				Help customers manage their water bill.	X	
Provide specific information regarding gray water and rainwater.	Potential	All	No	Yes	Yes	Yes	Yes	Yes	-	-	-	2019	2025	6	1	N/A		X		Planning commission interest in gray water.	X	

		Annual	Annual % of Total	
Total Estimated Savings:	***564***	***108***	***6%***	*Annual savings are 6% of total raw and potable water delivered to customers in 2017*
Raw Water:	***30***	***5***	***4%***	*Annual savings are 4% of estimated raw water use from 2017*
Potable Water:	***534***	***103***	***6%***	*Annual savings are 6% of total finished (treated) water produced - 2017*

WORKSHEET H - EVALUATION AND SELECTION OF WATER EFFICIENCY ACTIVITIES

Water Efficiency Activities for Evaluation [1]	Existing/ Planned/ Potential Activity [2]	Targeted Customer Category [3]	Review of Qualitative Screening						Implementation Period of Historical Activities	Historical Total Water Savings (AF)	Implementation Period of New Activities	Evaluation						Final Selection [8]	
			Qualitative Goals [4]									Projected Water Savings [5]		Projected Implementation Costs [6]	Quantitative Goals [7]				
			Has measure been budgeted?	Is measure cost effective?	Is there an above average potential to save water?	City staff resources available?	Is measure legally feasible?	Is measure technically feasible?				Total Water Savings (AF)	Average Annual Water Savings (AF)		Reduce non-revenue water & system losses to <10%.	Reduce summer peak day water use by 10%	Maintain sufficient revenue stream to cover debts.	Notes on Additional Pros/Cons to Consider	Selected for Implementation	If Eliminated, Reason Why Eliminated

Instructions:

[1] List of water efficiency activities that were carried to the evaluation process (based upon Worksheets D through G). If applicable, this column identifies the Best Practice activity as defined under Colorado Water Wise Guidebook of Best Practices (BP) for Municipal Water Conservation in Colorado.

[2] Specify whether the activity is "Existing" or "Potential" activity by entering an "E" or "P", respectively.

[3] As applicable, specify which customer category (residential, commercial, etc.) is/would be impacted by the activity.

[4] Enter the screening results from Worksheets D through G by entering the screening criteria and appropriate "X" designations.

[5] As applicable, enter the estimated water savings to implement the activities within the planning horizon and the average annual water savings. Enter N/A if the water savings can not be estimated with reasonable accuracy.

[6] As applicable, enter the estimated annual costs.

[7] Enter evaluation criteria based on quantitative goals developed in Step 3 and insert an "X" for activities that meet the listed criteria.

[8] Enter an "X" for activities selected for implementation and provide an explanation if an activity was not selected for implementation.

WORKSHEET I - SELECTED WATER EFFICIENCY ACTIVITIES AND ESTIMATED WATER SAVINGS

Selected Water Efficiency Activities [1]	Targeted Customer Category [3]	Implementation Period of Historical Activities [2]		Historical Total Water Savings (AF) [3]	Implementation Period of New Activities [4]		Projected Water Savings [5]	
							Total Water Savings (AF)	Average Annual Water Savings (AF)
Foundational Activities								
Inclining/Tiered Rates (Rifle already has inclining tiered rates, and is planning another water rate basis evaluation in 2019)	All	2013	2014	210	-	-	-	-
Water Rate Adjustments (Water rate basis evaluation planned for 2019)	All	2014	2017	30	2020	2025	200	40
Tap Fees with Water Use Efficiency Incentives (Tap fee evaluation)	New developm't	-	-	-	2020	2025	35	7
Meter Installation - Non-potable irrigation to City property	City	-	-	-	2019	2025	24	4
Meter accuracy check program	All	-	-	-	2019	2020	3	3
System Wide Water Audits (annually using AWWA water audit software)	All	2019	2019	-	2020	2025	Unk.	Unk.
Water Line Replacement Program (Develop formal replacement program)	All	-	-	-	2020	2025	20	4
Asset management of water system pipelines	All	-	-	-	2019	2025	Unk.	Unk.
Capital Improvement Plans (Water and wastewater CIPs under development)	All	-	-	-	2016	2025	Unk.	Unk.
Drought Management Plan (in progress)	All	-	-	-	2019	2025	Unk.	Unk.
Designate Existing Staff as Efficiency Coordinator	All	-	-	-	2018	2025	Unk.	Unk.
Planning Group / Committee Dedicated to Efficiency - Coordinate with Planning Commission on Efficiency Plan and Efficiency Activities	All	-	-	-	2018	2025	Unk.	Unk.
Assure consumers maintain service line	All	-	-	-	2018	2025	14	2
Targeted Technical Assistance and Incentives								
Removal of Phreatophytes - in City managed irrigation ditches for raw water irrigation of City Parks	City raw irrigated parks	-	-	-	2019	2025	6	1
Outdoor Irrigation Controllers - targeted giveaways of smart irrigation controller or system timers, esp. for large customers. Target 5 of largest customers with irrigation, evaluate participation and success.	C&I, High-Use-Residential	-	-	-	2019	2025	6	1
Outdoor Irrigation Controllers - implement on City managed parks / green spaces that are on potable water.	City	-	-	-	2019	2025	12	2
Rain Sensors - targeted giveaways of rain sensors, esp. for large customers. Start with 50, evaluate participation.	C&I, High-Use-Residential	-	-	-	2019	2025	36	6
Rain Sensors - implement on City managed parks / green spaces	City	-	-	-	2019	2025	6	1
Xeriscape - xeriscape demonstration gardens on City managed parks / green spaces	City	-	-	-	2019	2025	12	2
Specialized Nonresidential Surveys, Audits and Equipment Efficiency Improvements (BP 14) - Commercial & Industrial Self-Audit Assistance & Incentive: Provide WaterSense C&I self-audit checklist, with incentive for completion (such as giveaways, website recognition,	Commercial & Industrial (C&I)	-	-	-	2020	2025	24	4
Give-aways: (Give away irrigation system timers). Start with 50, evaluate participation.	C&I, High-Use-Residential	-	-	-	2019	2025	18	3

WORKSHEET I - SELECTED WATER EFFICIENCY ACTIVITIES AND ESTIMATED WATER SAVINGS

Selected Water Efficiency Activities [1]	Targeted Customer Category [3]	Implementation Period of Historical Activities [2]		Historical Total Water Savings (AF) [3]	Implementation Period of New Activities [4]		Projected Water Savings [5]	
							Total Water Savings (AF)	Average Annual Water Savings (AF)
Ordinances and Regulations								
Rules and Regulations for Landscape Design/Installation (BP 9) (Municipal Code Sec. 16-13-20 outlines the seven basic principles and key considerations for water efficient landscape design from Colorado Water Wise Best Practices Guide (pg. 127)).	Comm. Ind. City, Multi-fam Resid.	2014	2018	20	2019	2025	6	1
Soil Amendment Requirements (BP 9) (included in Municipal Code Sec. 16-13-20, which outlines the seven basic principles and key considerations for water efficient landscape design).	All with irrig.	2014	2018	-	2019	2025	Unk.	Unk.
Turf Restrictions (BP 9): (General landscape requirements for commercial, industrial, civic, and multi-family uses may have a maximum of 50% area with Turf (Sec. 16-13-80 (c))	Comm. Ind. City, Multi-fam Resid.	2014	2018	40	2018	2025	21	3
Turf Restrictions (BP 9): (EQR defined as up to 5,000 SF. Irrigated area above that is allowed but charged a higher tap fee (Sec. 13-4-60)). **Update code to include regulations limiting area of turf for single family residential development.**	Single-fam. Resid.	2012	2018	Unk.	2019	2018	Unk.	Unk.
Xeriscape Requirement (BP 9): (General landscape requirements for commercial, industrial, civic, and multi-family uses must have at least 50% xeric plants (Sec. 16-13-80 (c))	Comm. Ind. City, Multi-fam Resid.	2014	2018	40	2019	2025	7	1
Water Waste Ordinance (BP 5) - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	All, esp. residential	-	-	-	2019	2025	30	5
Time of Day Watering Restriction - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	All, esp. residential	-	-	-	2019	2025	0	0
Day of Week Watering Restriction - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	All, esp. residential	-	-	-	2019	2025	0	0
Water Overspray Limitations - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	All, esp. residential	-	-	-	2019	2025	30	5
Landscaper Training and Certification (BP 8)	All with irrig.	-	-	-	2019	2025	Unk.	Unk.
Irrigation System Installer Training and Certification (BP 8). Formerly had a sprinkler system permit ordinance in Section 14 of Municipal Code.	All with irrig.	-	-	-	2019	2025	Unk.	Unk.
Education Activities								
Web Pages (Improve & add to existing web pages)	Website Viewers	-	-	-	2019	2025	18	3
Bill Stuffers (electronic and paper)	All	-	-	-	2019	2025	18	3
K-12 Teacher and Classroom Education Programs	Select Students	-	-	-	2019	2025	18	3
Interactive Websites (provide links to useful webpages created by EPA, Water Wise, etc.)	Website Viewers	-	-	-	2019	2025	18	3
Provide specific information regarding gray water and rainwater	All	-	-	-	2019	2025	6	1
								Annual
						Total Estimated Savings:	***588***	***108***
						Raw Water:	***30***	***5***
						Potable Water:	***558***	***103***

Instructions:

[1] Provide the list of water efficiency activities selected for implementation based on Worksheet H.

[2] Include the period of time when historical activities were implemented. For potential activities, include "N/A".

[3] Provide total water savings for historical activities (average annual or total cumulative savings). For potential activities, include "N/A".

[4] Indicate when new activities will be implemented. For existing activities, include "N/A".

[5] Specify potential future water savings for both historical/current and new activities (average annual or total cumulative savings).

WORKSHEET J - IMPLEMENTATION PLAN

Selected Water Efficiency Activities [1]	Period of Implementation [2]				Implementation Actions [3]	Milestone Deadlines [4]	Annual Budget [5]	Entity/Staff Responsible for Implementation [6]	Coordination and Public Involvement [7]	Additional Comments [8]
	Historical		*New*							
Foundational Activities										
Inclining/Tiered Rates (Rifle already has inclining tiered rates, and is planning another water rate basis evaluation in 2019)	2013	2014	-	-	Complete water rate and tap fee study (2019). Adopt new rates (2020).	2019, 2020	$35,000 (Approx. cost of rate study)	Billing Dept., Utilities Dept., City Council, consultant	Public meeting to adopt new water rates and tap fees. Coordination with City Council.	
Water Rate Adjustments (Water rate basis evaluation planned for 2019)	2014	2017	2020	2025	Complete water rate and tap fee study. Continue adjusting rates annually as planned in rate study.	2020	No cost to continue annual rate increases	Billing Dept., Utilities Dept., City Council, consultant	Public meeting to adopt new water rates and tap fees. Coordination with City Council.	
Tap Fees with Water Use Efficiency Incentives (Tap fee evaluation)	-	-	2020	2025	Complete water rate and tap fee study (2019). Adopt new rates and tap fees (2020).	2019, 2020	$7,000 (Approx. cost of tap fee study)	Billing Dept., Utilities Dept., City Council, consultant	Public meeting to adopt new water rates and tap fees.	
Meter Installation - Non-potable irrigation to City property	-	-	2019	2025	Robert has ordered the meters. Robert to coordinate with Parks Dept. to install meters to non-potable irrigated parks.	2018 (complete, Robert has ordered the meters)	$1,000	Robert Burns (Utilities Director) & Parks Dept.	Coordinate with Parks Department.	
Meter accuracy check program	-	-	2019	2020	Begin meter accuracy check program within next year.	2020	NA (included in existing staff responsibilities)	Robert Burns (Utilities Director) & Parks Dept.	Coordinate with Collection & Distribution staff.	
System Wide Water Audits (annually using AWWA water audit software)	2019	2019	2020	2025	City conducted water loss audit in 2019 on 2018 water use. Conduct audit each year during 1st quarter.	2019 (complete) 2020-2025 1st Qtr	NA (included in existing staff responsibilities)	Robert Burns (Utilities Director) & Parks Dept.	Coordinate data collection with Billing Department.	
Water Line Replacement Program (Develop formal replacement program)	-	-	2020	2025	Review existing GIS records of pipelines (date installed, material). Create a schedule of priority replacements based on age, material, known leaks, etc.).	2022	Annual: Depends. ($120 - $150 per linear foot)	Robert Burns (Utilities Director), Collection & Distribution staff	Coordinate with Collection & Distribution staff.	
Asset management of water system pipelines	-	-	2019	2025	Use and improve existing GIS records of all pipelines - make sure all pipes have info on date installed, material, target replacement date, etc. Update asset inventory as pipelines are replaced, added, etc.	2023	NA (included in existing staff responsibilities)	Robert Burns (Utilities Director), Collection & Distribution staff	Coordinate with Collection & Distribution staff.	
Capital Improvement Plans (Water and wastewater CIPs under development)	-	-	2016	2025	Complete W & WW Capital Improvement Plans, incorporate the asset management of pipelines and water line replacement program.	2022	NA (included in existing staff responsibilities)	Robert Burns and Wastewater Department staff	Coordination between Water and Wastewater Departments.	
Drought Management Plan (in progress)	-	-	2019	2025	Robert to complete Drought Management Plan.	2020?	NA (included in existing staff responsibilities)	Robert Burns (Utilities Director)	Internal review? Public process?	
Designate Existing Staff as Efficiency Coordinator	-	-	2018	2025	Add this to Robert's title.	2018 (complete)	NA (included in existing staff responsibilities)	Robert Burns (Utilities Director)	Consider listing Robert as the Efficiency Coordinator on the City's Water Efficiency webpage, as a resource for public.	
Planning Group / Committee Dedicated to Efficiency - Coordinate with Planning Commission on Efficiency Plan and Efficiency Activities	-	-	2018	2025	Rifle staff and SGM have already met with the Planning Commission to get feedback on the Water Efficiency Plan, and Commission has agreed to taking on this role. Staff to coordinate with Planning Commission on updating the City's Comprehensive Plan (incorporate efficiency goals and selected action items into Comprehensive Plan).	2019 (Comprehensive Plan update scheduled)	NA (included in existing responsibilities)	City of Rifle Planning Commission	Coordinate with Planning Commission on updating the City's Comprehensive Plan.	
Assure consumers maintain service line	-	-	2018	2025	Monitor unusually high water use from any single customer, inform customers ASAP of high water use and possible leak.	NA (ongoing as needed)	NA (included in existing responsibilities)	Lynn Miller (Billing Dept.)	Billing Department to communicate with customers	

WORKSHEET J - IMPLEMENTATION PLAN

Selected Water Efficiency Activities [1]	Period of Implementation [2]				Implementation Actions [3]	Milestone Deadlines [4]	Annual Budget [5]	Entity/Staff Responsible for Implementation [6]	Coordination and Public Involvement [7]	Additional Comments [8]
	Historical		*New*							
Targeted Technical Assistance and Incentives										
Removal of Phreatophytes - in City managed irrigation ditches for raw water irrigation of City Parks	-	-	2019	2025	Managed by Parks Dept. Coordinate with Parks Dept. to ensure annual maintenance includes clearing ditches of vegetation.	Annually in spring.	Annual $1,000	Robert Burns, Parks Dept.	Coordinate with Parks Department.	
Outdoor Irrigation Controllers - targeted giveaways of smart irrigation controller or system timers, esp. for large customers. Target 5 of largest customers with irrigation, evaluate participation and success.	-	-	2019	2025	Billing Department to identify top 5 customers who don't already have smart controllers. Efficiency Coordinator to buy and give away up to 5 smart irrigation controllers.	2019 - identify candidates 2020 - initiate giveaways	Total $1,000 (5 at $200 each)	Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Communication between Water Department and top 5 water users who don't already have smart irrigation controllers. Feedback from recipients.	
Outdoor Irrigation Controllers - implement on City managed parks / green spaces that are on potable water.	-	-	2019	2025	Identify City managed parks / green spaces that are on potable water and do not have irrigation controllers. Purchase irrigation controllers. Coordinate with Parks Dept. to install.	2019 - identify parks 2020 - initiate installation	Total $2,000 (10 at $200 each)	Robert Burns (Utilities Director), Parks Dept.	Coordinate with Parks Department.	
Rain Sensors - targeted giveaways of rain sensors, esp. for large customers. Start with 50, evaluate participation.	-	-	2019	2025	Billing Department to identify customers for program (large irrigation users, concerned customers, etc.). Purchase small # of rain sensors and give to identified customers, evaluate	2019 - identify candidates 2020 - initiate giveaways	Total $1,500 (50 at $30 each)	Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Communication between Water Department customers identified as candidates for giveaways. Feedback from recipients.	
Rain Sensors - implement on City managed parks / green spaces	-	-	2019	2025	Identify City managed parks / green spaces that are on potable water and do not have rain sensors. Purchase rain sensors. Coordinate with Parks Dept. to install.	2019 - identify parks 2020 - initiate installation	Total $300 (10 at $30 each)	Robert Burns (Utilities Director), Parks Dept.	Coordinate with Parks Department.	
Xeriscape - xeriscape demonstration gardens on City managed parks / green spaces	-	-	2019	2025	Nathan to work with Planning Commission to identify existing xeriscape areas to add informational placards (such as library), and identify options for a new small xeriscape demo garden. Water Department to create information placards. Work with Parks Dept. on xeriscape demo garden.	2019 - identify options 2021 - install placards on existing gardens 2025 - convert new demo garden	Total depends on area selected. $65,000 - $109,000 per acre	Nathan Lindquist (Planning Director)	Coordinate with Planning Commission and Parks Department. Informational placards engage and inform public. Coordinate with Library to put out brochures if placards put at Library xeriscape garden.	
Specialized Nonresidential Surveys, Audits and Equipment Efficiency Improvements (BP 14) - Commercial & Industrial Self-Audit Assistance & Incentive: Provide WaterSense C&I self-audit checklist, with incentive for completion (such as giveaways, website recognition, free cross connection test, etc.)	-	-	2020	2025	Robert to review WaterSense self-audit and self assessment checklists, and coordinate with billing department to send to all C&I customers. Robert to work with other staff to decide on incentives for participation.	2020 - Identify incentives and select self-audit tools 2021 - Send to C&I customers	Depends on incentive chosen. Targeting <$1,000	Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Coordinate with Billing Department to get self-audits and self-assessment checklists to C&I customers.	
Give-aways: (Give away irrigation system timers). Start with 50, evaluate participation.	-	-	2019	2025	Billing department to identify customers for program (large irrigation users, concerned customers, etc.), or events where Water Department could give away the timers. Robert to purchase irrigation timers (the kind that fit between hose bib and hose) and initiate giveaways.	2019 - identify candidates/events 2020 - initiate giveaways	Total $1,500 (50 at $30 each)	Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Communication between Water Department customers identified as candidates for giveaways. Feedback from recipients.	

WORKSHEET J - IMPLEMENTATION PLAN

Selected Water Efficiency Activities [1]	Period of Implementation [2]				Implementation Actions [3]	Milestone Deadlines [4]	Annual Budget [5]	Entity/Staff Responsible for Implementation [6]	Coordination and Public Involvement [7]	Additional Comments [8]
	Historical		*New*							
Ordinances and Regulations										
Rules and Regulations for Landscape Design/Installation (BP 9) (Municipal Code Sec. 16-13-20 outlines the seven basic principles and key considerations for water efficient landscape design from Colorado Water Wise Best Practices Guide (pg. 127)).	2014	2018	2019	2025	Existing guidelines in City code.	Existing.	NA	Nathan Lindquist (Planning Director)	Success requires public to comply with regulations. Add info about regs on efficiency webpage.	
Soil Amendment Requirements (BP 9) (included in Municipal Code Sec. 16-13-20, which outlines the seven basic principles and key considerations for water efficient landscape design).	2014	2018	2019	2025	Existing guidelines in City code.	Existing.	NA	Nathan Lindquist (Planning Director)	Success requires public to comply with regulations. Add info about regs on efficiency webpage.	
Turf Restrictions (BP 9): (General landscape requirements for commercial, industrial, civic, and multi-family uses may have a maximum of 50% area with Turf (Sec. 16-13-80 (c))	2014	2018	2018	2025	Existing guidelines in City code.	Existing.	NA	Nathan Lindquist (Planning Director)	Success requires public to comply with regulations. Add info about regs on efficiency webpage.	
Turf Restrictions (BP 9): (EQR defined as up to 5,000 SF. Irrigated area above that is allowed but charged a higher tap fee (Sec. 13-4-60)). Update code to include regulations limiting area of turf for single family residential development.	2012	2018	2019	2018	Update code to include regulations limiting area of turf for single family residential development.	2020-2021	NA	Nathan Lindquist (Planning Director), Planning Commission	Coordinate with Planning Commission to work on these land use planning regs, and to incorporate into Comprehensive Plan. Communicate new regulations to public and developers. Success requires public to comply with regulations. Add info about regs on efficiency webpage.	
Xeriscape Requirement (BP 9): (General landscape requirements for commercial, industrial, civic, and multi-family uses must have at least 50% xeric plants (Sec. 16-13-80 (c))	2014	2018	2019	2025	Existing guidelines in City code.	Existing.	NA	Nathan Lindquist (Planning Director)	Success requires public to comply with regulations. Add info about regs on efficiency webpage.	
Water Waste Ordinance (BP 5) - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	-	-	2019	2025	Robert Burns to incorporate these restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	2019 (publish Drought Mgmt. Plan) 2019 (Incorporate into Comprehensive Plan)	NA	Robert Burns, Planning Commission	Coordinate with Planning Commission on Comprehensive Plan. Success requires public to comply with regulations. Add info about regs on efficiency webpage.	
Time of Day Watering Restriction - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	-	-	2019	2025	Robert Burns to incorporate these restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	2019 (publish Drought Mgmt. Plan) 2019 (Incorporate into Comprehensive Plan)	NA	Robert Burns (Utilities Director), Planning Commission	Coordinate with Planning Commission on Comprehensive Plan. Include links to relevant efficiency codes on City's efficiency webpage?	
Day of Week Watering Restriction - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	-	-	2019	2025	Robert Burns to incorporate these restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	2019 (publish Drought Mgmt. Plan) 2019 (Incorporate into Comprehensive Plan)	NA	Robert Burns (Utilities Director), Planning Commission	Coordinate with Planning Commission on Comprehensive Plan. Success requires public to comply with regulations. Add info about regs on efficiency webpage.	
Water Overspray Limitations - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	-	-	2019	2025	Robert Burns to incorporate these restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	2019 (publish Drought Mgmt. Plan) 2019 (Incorporate into Comprehensive Plan)	NA	Robert Burns (Utilities Director), Planning Commission	Coordinate with Planning Commission on Comprehensive Plan. Success requires public to comply with regulations. Add info about regs on efficiency webpage.	
Landscaper Training and Certification (BP 8)	-	-	2019	2025	Robert Burns to research opportunities for trainings/ certifications. Specifically, City of Aspen's pilot program. Evaluate if this would be cost prohibitive to developers.	2019 (start research)	NA	Robert Burns (Utilities Director), Planning Commission	Obtain input from Aspen staff on City of Aspen's pilot program. Obtain input from local contractors?	
Irrigation System Installer Training and Certification (BP 8). Formerly had a sprinkler system permit ordinance in Section 14 of Municipal Code.	-	-	2019	2025	Robert Burns to research opportunities for trainings/ certifications. Specifically, City of Aspen's pilot program. Evaluate if this would be cost prohibitive to irrigation installers (and if costs would be passed on to consumers and discourage re-design).	2019 (start research)	NA	Robert Burns (Utilities Director), Planning Commission	Obtain input from Aspen staff on City of Aspen's pilot program. Obtain input from local contractors?	

WORKSHEET J - IMPLEMENTATION PLAN

Selected Water Efficiency Activities [1]	Period of Implementation [2]				Implementation Actions [3]	Milestone Deadlines [4]	Annual Budget [5]	Entity/Staff Responsible for Implementation [6]	Coordination and Public Involvement [7]	Additional Comments [8]
	Historical		*New*							
Education Activities										
Web Pages (Improve & add to existing web pages)	-	-	2019	2025	Rifle has created a Water Efficiency home page. ___ to improve and add content to the webpage (including draft and completed Water Efficiency Plan). Ideas include: info on existing efficiency regulations, access to download all the bill stuffers that have been sent out in the past.	2019	NA	Robert Burns (Utilities Director)- content creation. No web consultant necessary.	Public involvement through website interaction. City to consider tracking website visitation stats.	
Bill Stuffers (electronic and paper)	-	-	2019	2025	SGM to provide examples of useful resources and fliers to Water Department. Water Department to choose most useful resources and create fliers to send with water bills (print and flier). Include links or QR code to City's efficiency webpage.	2019 spring - send out first bill stuffer before irrigation season	Annual $2,000	Robert Burns (Utilities Director) - content selection Lynn Miller (Billing Dept.) - sending bill stuffers.	One way communication with public through informational bill stuffers. Coordinate with library staff to also put out these brochures and fliers at library.	
K-12 Teacher and Classroom Education Programs	-	-	2019	2025	SGM to provide examples of useful resources and websites to Water Department. Water Department to choose most useful resources and share with K-12. Water department to find contacts at local schools for sharing resources.	2020	Annual $100 - $1,000	Robert Burns - content selection. Need teacher contact at each school.	Need involvement from K-12 teachers. Water Department to coordinate with local schools.	
Interactive Websites (provide links to useful webpages created by EPA, Water Wise, etc.)	-	-	2019	2025	SGM to provide examples of useful websites to Water Department. Water Department to choose most useful resources and add links to efficiency webpage.	2019	NA	Robert Burns (Utilities Director) - content creation. No web consultant necessary.	Public involvement through website interaction. City to consider tracking website visitation stats.	
Provide specific information regarding gray water and rainwater	-	-	2019	2025	Include specific information regarding gray water on City's Water Efficiency home page, and possibly bill stuffers. Ideas include information on rain barrel workshops, how to collect gray water with a bucket in your sink, water quality considerations, etc.	2020	NA	Planning Commission	Public involvement - information shared with public through website or bill stuffers. Possibly also communicate with library.	

Instructions:
[1] Provide the list of water efficiency activities selected for implementation during Step 4.
[2] Provide period in which activity is going to be implemented.
[3] Include information on specific actions necessary to implement the activities (e.g. advertise rebates to public).
[4] Indicate timing of when the action are scheduled to be implemented (e.g. when leaks will be repaired, when rebate program will start, etc.).
[5] Insert anticipated annual costs.
[6] Specify which entity/staff responsible for implementing the activities.
[7] If applicable, comment on necessary coordination among staff/other entities and how the public will be involved. This includes educational campaigns, feedback, direct participation in certain actions, etc.
[8] Add any additional comments.

WORKSHEET K - SELECTION OF MONITORING DEMAND DATA FOR MONITORING PLAN

Monitoring Data [1]	HB 10-1051 Reporting					Selection [3]				Entity/Staff Responsible for Data Collection and Evaluation [4]	Schedule/Timing of Monitoring [5]	Comments [6]
	Annual	Monthly	Bi-Monthly	Daily	During WEP Update	Annual	Monthly	Bi-Monthly	Daily			
Total Water Use												
Total treated water produced (metered at WTP discharge)						√	√		√	Robert Burns (Water Operations Manager)	Daily and monthly records kept as standard practice. Review annually.	
Total treated water delivered (sum of customer meters)	√					√	√			Lynn Miller (Billing Dept.)	Monthly records kept in Caselle (billing software). Review annually.	
Raw non-potable deliveries - Raw water delivered to water treatment plant before treatment.						√	√		√	Robert Burns (Water Ops)	Raw water deliveries to RRWPF are recorded daily and summarized monthly.	
Raw non-potable deliveries - Raw water for irrigation of certain parks						√	√			Robert Burns (Water Ops) & Parks Dept.	To be determined in coordination with Parks Department.	These meters have just been ordered and have not yet been installed. Need to work out data collection procedure with Parks Department.
Reclaimed water produced (metered at WWTP discharge)										NA	NA	City does not produce reclaimed or reused water
Reclaimed water delivered (sum of customer meters)										NA	NA	City does not produce reclaimed or reused water
Per capita water use						√				Lynn Miller (Billing Dept.)	Daily and monthly records kept as standard practice. Review annually.	[Per capita water use] = [total water produced] / [total population served]. Includes system losses.
Indoor and outdoor treated water deliveries						√	√			Robert Burns (Water Ops)	Monthly records kept as standard practice. Review annually.	[Indoor demand (Nov - Mar)] = [total demand]. [Indoor demand (Apr - Oct)] = [average monthly demand Nov - Mar]. [Outdoor demand] = [total demand] - [indoor demand]
Treated water peak day produced						√			√	Robert Burns (Water Ops)	Daily production records kept as standard practice. Reviewed annually to select peak day.	
Reclaimed water peak day produced										NA	NA	City does not produce reclaimed or reused water
Raw water peak day produced/delivered										NA - not collected daily.	Not collected daily.	Likely will not have resources to collect daily records of raw water delivered for raw irrigation of parks.
Non-revenue water	√					√				Lynn Miller (Billing Dept) - metered water Robert Burns (Water Ops) - produced water	Calculated and reviewed annually to track non-revenue water and progress on reducing water loss.	Difference between total finished treated water produced and total metered water delivered and billed.
Insert other demand data												
Water Use by Customer Type												
Treated water delivered		√				√	√			Lynn Miller (Billing Dept.)	Monthly records kept in Caselle (billing software). Review annually.	Monthly records kept in Caselle (billing software). Review annually.
Raw non-potable deliveries - Only customer provided raw deliveries is the Parks Dept. for irrigation of certain City parks.						√				Robert Burns (Water Ops) & Parks Dept.	To be determined in coordination with Parks Department.	These meters have just been ordered and have not yet been installed. Need to work out data collection procedure with Parks Department.
Reclaimed water delivered										NA	NA	City does not produce reclaimed or reused water
Residential per capita water use					√					Consultant, if needed during WEP update.	Per capita water use by customer type will be calculated if needed during Water Efficiency Plan updates.	Billing Dept. can calculate
Unit water use (e.g. AF/account or AF/irrigated acre)					√					Consultant, if needed during WEP update.	Will be calculated if needed during Water Efficiency Plan updates.	Billing Dept. can calculate water use per account.
Indoor and outdoor treated water deliveries					√					Consultant, if needed during WEP update.	Indoor and outdoor water use will be calculated annually, but will only be calculated by customer type during the WEP update.	[Indoor demand (Nov - Mar)] = [total demand]. [Indoor demand (Apr - Oct)] = [average monthly demand Nov - Mar]. [Outdoor demand] = [total demand] - [indoor demand]
Large users						√				Lynn Miller (Billing Dept.)	As needed for efficiency activities such as giveaways for large users.	Billing Dept. has ability to pull usage records on large customers from Caselle at any time. Billing department will do this as needed for efficiency activities such as giveaways for large users.
Insert other demand data												
Other Demand Related Data												
Irrigated landscape (e.g. AF/acre or number of irrigated acres)										N/A		specify whether total irrigated lands in service area and/or per customer typs (e.g. parks)
Precipitation										?	As needed.	Closest CoAgMet Station is in Silt (SLT01). Monitors daily parameters: Precip, Temp, Evapotranspiration, Wind, Soil Temp, etc. https://coagmet.colostate.edu/station_details.php?
Temperature										?	As needed.	
Evapotranspiration										?	As needed.	
Other weather parameters										?	As needed.	
Drought index information						√				Robert Burns (Water Ops)		Needed to enact Drought Management Plan and drought restrictions.
Economic conditions						√				?		
Population						√				Lynn Miller (Billing Dept.)		City population tracked from Census data &/or DOLA. Population served outside city tracked by billing dept.
New taps						√				Lynn Miller (Billing Dept.)	Annually.	
Total annual revenue from water sales						√				Lynn Miller (Billing Dept.)	Annually.	
Total annual revenue from tap fees						√				Lynn Miller (Billing Dept.)	Annually.	

Note: Black text is from the CWCB template. *Italic blue text is added by City.*

Instructions:

[1] This worksheets provides a list of possible demand data. Add additional demand data provider would like to monitor.
[2] Specifies annual reporting requirements per HB 10-1051.
[3] Select demand data provider plans to use to monitor effectiveness of water efficiency activities by inserting an "X" in appropriate boxes.
[4] Specify staff/entity reponsible for data collection and evaluation.
[5] Specify the timing and/or set schedule in which data will be collected and evaluated.
[6] Add any additional comments.

WORKSHEET L - MONITORING PLAN

Selected Water Efficiency Activities [1]	Customer Category Impacted [2]	Demand Monitoring Data [3]								Other Monitoring Data [5]									Entity/Staff Responsible for Data Collection and Evaluation [6]	Schedule/ Timing of Monitoring [7]	Comments [8]
		Indoor & outdoor treated water deliveries	Per capita water use	Total treated water produced	Total treated water delivered	Non-revenue water	Large customer use	City irrigation water	Raw water to Parks	Description of Parameter(s) to Record [4]	Annual costs	Lessons learned	Water saving estimates	Administration data	Relevant public feedback	Records of significant changes	Compliance w/ regs	Annual revenue			
Foundational Activities																					
Inclining/Tiered Rates (Rifle already has inclining tiered rates, and is planning another water rate basis evaluation in 2019)	All	X	X	X	X					Avg & 90th percentile summer per capita use	X	X	X	X	X			X	Lynn Miller (Billing Dept.)	Monthly	Compare total water delivered & GPCD before & after rate increase.
Water Rate Adjustments (Water rate basis evaluation planned for 2019)	All	X	X	X	X					Avg & 90th percentile summer per capita use		X	X					X	Lynn Miller (Billing Dept.)	Monthly	Compare total water delivered & GPCD before & after rate increase.
Tap Fees with Water Use Efficiency Incentives (Tap fee evaluation)	New developm't											X	X	X	X	X		X	Lynn Miller (Billing Dept.)	Annually	If higher tap fees adopted for larger lawns, track how many large lawn tap fees are paid.
Meter Installation - Non-potable irrigation to City property	City							X	X	Total raw water use for park irrigation		X	X					X	Robert Burns (Utilities Director) & Parks Dept.	Before and after installation	City will start tracking raw water used to irrigate parks.
Meter accuracy check program	All		X	X	X	X				Apparent losses	X	X	X	X		X		X	Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Before and after program	City to calculate apparent losses (using annual water audit).
System Wide Water Audits (annually using AWWA water audit software)	All			X	X	X				Water produced and delivered		X		X		X			Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Annually	Keep records of annual audits, and track loss over time.
Water Line Replacement Program (Develop formal replacement program)	All			X	X	X				Non-revenue water & est. real losses, feet of pipeline replaced	X	X	X			X			Robert Burns (Utilities Director)	Monthly records. Assess annually.	Compare non-revenue water before & after major replacements.
Asset management of water system pipelines	All			X	X	X				Non-revenue water & est. real losses, feet of pipeline replaced	X	X	X			X			Robert Burns (Utilities Director)	Monthly records. Assess annually.	
Capital Improvement Plans (Water and wastewater CIPs under development)	All			X	X	X				Progress on CIP, projects completed	X	X	X	X		X		X	Robert Burns (Utilities Director)	Annually	
Drought Management Plan (in progress)	All	X	X	X	X		X			Drought index, outdoor water use during drought.		X	X		X				Robert Burns (Utilities Director)	Monthly during droughts.	City should note drought response time, water use before & after drought restrictions enacted.
Designate Existing Staff as Efficiency Coordinator	All									Feedback from Water Dept. & Efficiency Coordinator		X	X						Robert Burns (Utilities Director)	Annually	
Planning Group / Committee Dedicated to Efficiency - Coordinate with Planning Commission on Efficiency Plan and Efficiency Activities	All									Feedback from Water Dept. & Planning Commission		X	X		X				Robert Burns (Utilities Director)	Annually	Water Dept. to check in after Planning Commission member re-election or term.
Assure consumers maintain service line	All		X		X					Monitor each account for high water use		X	X						Lynn Miller (Billing Dept.)	Monthly records. Assess annually.	
Targeted Technical Assistance and Incentives																					
Removal of Phreatophytes - in City managed irrigation ditches for raw water irrigation of City Parks	City raw irrigated parks					X			X	Monthly metered usage for updated parks/areas	X		X			X		X	Robert Burns (Utilities Director) & Parks Dept.	Monthly records. Assess annually.	Estimate ditch losses if possible.
Outdoor Irrigation Controllers - targeted giveaways of smart irrigation controller or system timers, esp. for large customers. Target 5 of largest customers with irrigation, evaluate participation and success.	C&I, High-Use-Residential	X	X				X			Monthly metered usage for impacted customers	X	X	X		X				Robert Burns (Utilities Director)	Monthly records. Assess annually.	City to note time of change, compare demand before & after.
Outdoor Irrigation Controllers - implement on City managed parks / green spaces that are on potable water.	City	X						X		Monthly metered usage for updated parks/areas	X	X	X			X			Robert Burns (Utilities Director)	Monthly records. Assess annually.	City to note time of change, compare demand before & after.
Rain Sensors - targeted giveaways of rain sensors, esp. for large customers. Start with 50, evaluate participation.	C&I, High-Use-Residential	X	X				X			Monthly metered usage for impacted customers	X	X	X		X				Robert Burns (Utilities Director)	Monthly records. Assess annually.	City to note time of change, compare demand before & after.
Rain Sensors - implement on City managed parks / green spaces	City	X						X		Monthly metered usage for updated parks/areas	X	X	X			X			Robert Burns (Utilities Director)	Monthly records. Assess annually.	City to note time of change, compare demand before & after.
Xeriscape - xeriscape demonstration gardens on City managed parks / green spaces	City							X		Monthly metered usage for updated parks/areas	X	X	X		X	X			Robert Burns (Utilities Director)	Monthly records. Assess annually.	City to note time of change, compare demand before & after.
Specialized Nonresidential Surveys, Audits and Equipment Efficiency Improvements (BP 14) - Commercial & Industrial Self-Audit Assistance & Incentive: Provide WaterSense C&I self-audit checklist, with incentive for completion (such as giveaways, website recognition, free cross connection test, etc.)	Commercial & Industrial (C&I)						X			Monthly metered usage for impacted customers	X	X	X		X				Robert Burns (Utilities Director)	Monthly records. Assess annually.	Check use for commercial users that complete self-audit (note demand before & after).
Give-aways: (Give away irrigation system timers). Start with 50, evaluate participation.	C&I, High-Use-Residential									Monthly metered usage for impacted customers	X	X	X		X				Robert Burns (Utilities Director)	Monthly records. Assess annually.	City to note time of change, compare demand before & after. Possibly use give-aways to engage customers in website surveys or interactive activities?

WORKSHEET L - MONITORING PLAN

Selected Water Efficiency Activities [1]	Customer Category Impacted [2]	Demand Monitoring Data [3]								Other Monitoring Data [5]									Entity/Staff Responsible for Data Collection and Evaluation [6]	Schedule/ Timing of Monitoring [7]	Comments [8]
		Indoor & outdoor treated water deliveries	*Per capita water use*	*Total treated water produced*	*Total treated water delivered*	*Non-revenue water*	*Large customer use*	*City irrigation water*	*Raw water to Parks*	Description of Parameter(s) to Record [4]	Annual costs	Lessons learned	Water saving estimates	Administration data	Relevant public feedback	Records of significant changes	*Compliance w/ regs*	*Annual revenue*			
Ordinances and Regulations																					
Rules and Regulations for Landscape Design/Installation (BP 9) (Municipal Code Sec. 16-13-20 outlines the seven basic principles and key considerations for water efficient landscape design from Colorado Water Wise Best Practices Guide (pg. 127)).	Comm. Ind. City, Multi-fam Resid.	X	X	X	X					Produced & delivered water, indoor & outdoor deliveries, GPCD,		X	X		X	X	X		Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Monthly records. Assess annually.	
Soil Amendment Requirements (BP 9) (included in Municipal Code Sec. 16-13-20, which outlines the seven basic principles and key considerations for water efficient landscape design).	All with irrig.	X	X	X	X					Produced & delivered water, indoor & outdoor deliveries, GPCD,		X	X		X	X	X		Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Monthly records. Assess annually.	
Turf Restrictions (BP 9): (General landscape requirements for commercial, industrial, civic, and multi-family uses may have a maximum of 50% area with Turf (Sec. 16-13-80 (c))	Comm. Ind. City, Multi-fam Resid.	X	X	X	X					Produced & delivered water, indoor & outdoor deliveries, GPCD,		X	X		X	X	X		Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Monthly records. Assess annually.	
Turf Restrictions (BP 9): (EQR defined as up to 5,000 SF. Irrigated area above that is allowed but charged a higher tap fee (Sec. 13-4-60)). Update code to include regulations limiting area of turf for single family residential development.	Single-fam. Resid.	X	X	X	X					Produced & delivered water, indoor & outdoor deliveries, GPCD,		X	X		X	X	X	X	Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Monthly records. Assess annually.	
Xeriscape Requirement (BP 9): (General landscape requirements for commercial, industrial, civic, and multi-family uses must have at least 50% xeric plants (Sec. 16-13-80 (c))	Comm. Ind. City, Multi-fam Resid.	X	X	X	X					Produced & delivered water, indoor & outdoor deliveries, GPCD,		X	X		X	X	X		Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Monthly records. Assess annually.	
Water Waste Ordinance (BP 5) - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	All, esp. residential	X	X	X	X					Produced & delivered water, indoor & outdoor deliveries, GPCD,		X	X		X	X	X		Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Monthly during summer	City should note drought response time, water use before & after drought restrictions enacted.
Time of Day Watering Restriction - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	All, esp. residential	X	X	X	X					Produced & delivered water, indoor & outdoor deliveries, GPCD,		X	X		X	X	X		Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Monthly during summer	City should note drought response time, water use before & after drought restrictions enacted.
Day of Week Watering Restriction - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	All, esp. residential	X	X	X	X					Produced & delivered water, indoor & outdoor deliveries, GPCD,		X	X		X	X	X		Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Monthly during summer	City should note drought response time, water use before & after drought restrictions enacted.
Water Overspray Limitations - incorporate restrictions into Drought Management Plan, then into City's updated Comprehensive Plan for new development. Potentially add to Municipal Code.	All, esp. residential	X	X	X	X					Produced & delivered water, indoor & outdoor deliveries, GPCD,		X	X		X	X	X		Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Monthly during summer	City should note drought response time, water use before & after drought restrictions enacted.
Landscaper Training and Certification (BP 8)	All with irrig.	X	X	X	X					Produced & delivered water, indoor & outdoor deliveries, GPCD,	X	X	X		X	X	X		Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Annually	Note participation, costs, effects on development, feedback, etc.
Irrigation System Installer Training and Certification (BP 8). Formerly had a sprinkler system permit ordinance in Section 14 of Municipal Code.	All with irrig.	X	X	X	X					Produced & delivered water, indoor & outdoor deliveries, GPCD,	X	X	X		X	X	X		Robert Burns (Utilities Director) & Lynn Miller (Billing Dept.)	Annually	Note participation, costs, effects on development, feedback, etc.
Education Activities																					
Web Pages (Improve & add to existing web pages)	Website Viewers		X							Website visitation stats, GPCD	X	X	X		X				Robert Burns (Utilities Director)	Semi-annually	Possibly include surveys on website to gage interaction, participants names entered in a drawing for monthly give-away?
Bill Stuffers (electronic and paper)	All		X							Electronic fliers % opened/read, GPCD	X	X	X		X				Robert Burns (Utilities Director)	Semi-annually	
K-12 Teacher and Classroom Education Programs	Select Students		X							Feedback from teachers, GPCD	X	X	X		X				Robert Burns (Utilities Director)	Semi-annually	Input from teachers on success & usefulness of programs
Interactive Websites (provide links to useful webpages created by EPA, Water Wise, etc.)	Website Viewers		X							Website visitation stats, GPCD	X	X	X		X				Robert Burns (Utilities Director)	Semi-annually	Possibly include surveys on website to gage interaction
Provide specific information regarding gray water and rainwater	All		X							GPCD	X	X	X		X				Robert Burns (Utilities Director)	Semi-annually	

Instructions:
[1] Provide the list of water efficiency activities selected for implementation during Step 4.
[2] As applicable, specify which customer category (Residential, Commercial, etc.) is/would be impacted by the activity.
[3] Enter type of demand data selected in Worksheet K (e.g. total annual treated water delivered or monthly treated water delivered by customer type). Enter an "X" for each activity that will be monitored by the respective demand data type.
[4] If applicable, enter description of parameters to record for each activity (e.g. number of workshops, fixture/meter replacements, rebates and audits; acres of xeriscape; and length of pipeline replaced). GPCD = per capita water use (gallons per capita per day).
[5] Select other data to be collected for monitoring of each activity by inserting an "X" in appropriate boxes.
[6] Specify staff/entity reponsible for data collection and evaluation.
[7] Specify the timing and/or schedule in which data will be collected and evaluated.
[8] Add any additional comments.

Appendix B

References to Key Water and Water Efficiency Ordinances and Regulations
City of Rifle Municipal Code

City of Rifle Regulations & Permit Information
https://www.rifleco.org/156/Land-Use-Subdivision-Regulations

City of Rifle Municipal Code
https://library.municode.com/co/rifle/codes/charter_and_municipal_code?nodeId=18084

Chapter 13 – Municipal Utilities
https://library.municode.com/co/rifle/codes/charter_and_municipal_code?nodeId=CH13MUUT

In particular, the following Articles of Chapter 13 address efficiency. Specific code sections are mentioned in the Worksheets.

- Chapter 13, Article IV – Water and Wastewater Systems Improvement Fee
  https://library.municode.com/co/rifle/codes/charter_and_municipal_code?nodeId=CH13MUUT_ARTIVWAWASYIMFE
  - Sec. 13-4-60. - EQR classifications.

Chapter 16 – Land Use and Development
https://library.municode.com/co/rifle/codes/charter_and_municipal_code?nodeId=CH16LAUSDE

In particular, the following Articles of Chapter 16 address efficiency. Specific code sections are mentioned in the Worksheets.

- Chapter 16, Article XIII – Landscape Guidelines
  https://library.municode.com/co/rifle/codes/charter_and_municipal_code?nodeId=CH16LAUSDE_ARTXIIILAGU
  - Sec. 16-13-20. - Purpose and intent.
  - Sec. 16-13-80. - General landscape requirements.
  - Sec. 16-13-90. - Right-of-way landscape standards.
  - Sec. 16-13-100. - Parking lot landscaping.
  - Sec. 16-13-130. - Irrigation.
  - Sec. 16-13-140. - Replacement and maintenance.
  - Sec. 16-13-150. - Plant materials lists.

Appendix C

Public Notice Announcement, Public Comments, and Plan Adoption Documentation

Public Notice Announcement

Ad #: 0000434662-01
Customer: CITY OF RIFLE - DISPLAY & LEGALS,
Your account number is: 1006479

PROOF OF PUBLICATION
RIFLE CITIZEN TELEGRAM
STATE OF COLORADO
COUNTY OF GARFIELD

I, Samantha Johnston, do solemnly swear that I am Associate General Manager of the RIFLE CITIZEN TELEGRAM, that the same weekly newspaper printed, in whole or in part and published in the County of Garfield, State of Colorado, and has a general circulation therein; that said newspaper has been published continuously and uninterruptedly in said County of Garfield for a period of more than fifty-two consecutive weeks next prior to the first publication of the annexed legal notice or advertisement; that said newspaper has been admitted to the United States mails as a periodical under the provisions of the Act of March 3, 1879, or any amendments thereof, and that said newspaper is a weekly newspaper duly qualified for publishing legal notices and advertisements within the meaning of the laws of the State of Colorado.

That the annexed legal notice or advertisement was published in the regular and entire issue of every number of said weekly newspaper for the period of 2 insertions; and that the first publication of said notice was in the issue of said newspaper dated 6/6/2019 and that the last publication of said notice was dated 6/13/2019 in the issue of said newspaper.

In witness whereof, I have here unto set my hand this day, 6/13/2019.

Samantha Johnston, Associate General Manager

Subscribed and sworn to before me, a notary public in and for the County of Garfield, State of Colorado this day 6/13/2019.

Pamela J. Schultz, Notary Public
My Commission Expires: November 1, 2019

PAMELA J. SCHULTZ
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID #19994030975
My Commission Expires November 1, 2019

PUBLIC NOTICE
Pursuant to C.R.S. 37-60-126 (5)

Public notice is hereby given that the City of Rifle, Colorado has released the Draft Water Efficiency Plan-April 2019 that is publicly available and can be reviewed at: https://www.rifleco.org/308/Water-Efficiency or at Rifle City Hall, 202 Railroad Avenue, Rifle, Colorado. The City of Rifle is actively seeking comments from the public on the Draft Water Efficiency Plan after which it intends to adopt the Water Efficiency Plan on August 21, 2019 pursuant to C.R.S. 37-60-126 (2).
Published in the Citizen Telegram June 6 and 13, 2019 0000434662

Public Comments

No public comments were received

Plan Adoption Documentation