Town of Severance

2026 Draft Water Efficiency Plan

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Prepared by

WestWater RESEARCH

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List of Acronyms

AF	Acre-feet
AWWA	American Water Works Association
CBT	Colorado-Big Thompson
CWCB	Colorado Water Conservation Board
CWLI	Colorado Water Loss Initiative
FCLWD	Fort Collins-Loveland Water District
gpcd	Gallons per Capita per Day
HB	House Bill
HOA	Homeowners' Association
MU	Multiple Use
NISP	Northern Integrated Supply Project
NRW	Non-Revenue Water
NWCWD	North Weld County Water District
POA	Period of Analysis
SB	Senate Bill
ULA	Upper Laramie Aquifer
WEA	Water Efficiency Activities
WEP	Water Efficiency Plan
WSA	Water Service Area
WSSC	Water Supply and Storage Company

1. Introduction

The Town of Severance ("Severance" or "the Town") is a rapidly growing community located in Weld County in northeast Colorado. Its proximity to the expanding urban centers of Fort Collins, Loveland, and Greeley offers residents a unique blend of small-town character and convenient access to urban amenities. This desirable setting contributed to significant population growth in recent decades, prompting the Town to respond quickly to increasing water demand. Effective water supply planning requires a comprehensive approach—one that evaluates existing and projected water needs, identifies available water sources, and addresses infrastructure requirements along with demand management.

The State of Colorado recognizes water conservation's crucial role in water supply planning to reduce demand and optimize the use of limited resources. The Colorado General Assembly enacted the Water Conservation Act of 2004, which requires all municipal water providers to prepare a Water Efficiency Plan to be eligible to receive state grants and loans. Plans must consider a 10-year planning horizon and be renewed every seven years. The Town of Severance's 2026 Water Efficiency Plan (WEP), presented in this document, covers the years 2026–2035 and serves as an update to the 2017 plan.

This plan was prepared under the direction of the Town's Manager, with input from the Deputy Town Manager, Planning Department, the Public Works Department, Citizen Advisory Board, and the Town Council.

This WEP has been developed in accordance with guidance provided by the Colorado Water Conservation Board (CWCB) for water efficiency planning. The CWCB acknowledges that each water provider faces distinct challenges related to demand and supply and therefore encourages WEPs to be tailored to the specific needs, priorities, and financial capacity of each water provider. This plan includes the following key components:

1. Profile of the Existing Water System
2. Water Demand and Historical Trends
3. Integrated Planning and Water Efficiency Goals
4. Water Efficiency Roadmap
5. Implementation and Monitoring Strategy
6. Public Engagement, Policy Adoption, and State Review

The focus of this plan is on the efficient use and conservation of potable water supplies. In Colorado, potable water is typically tied to specific beneficial use designations—such as municipal, commercial, or industrial—which makes these supplies both limited and costly. The added requirement for treatment further increases their value, underscoring the importance of careful management. In contrast, raw (non-potable) water supplies, often designated for agricultural use, are generally more abundant and easier to acquire. The Town of Severance has strategically adapted to this regulatory framework by using raw water for lawn irrigation and reserving its potable supplies, to the extent possible, for

domestic, municipal, and commercial purposes. It is important to note that the Town of Severance directly manages only a small portion of raw water supplies, primarily for parks and other public open spaces. Most residential irrigation supplies are managed by the metropolitan districts or homeowners' associations that serve each subdivision.

The development of this plan coincides with other key planning efforts, namely the development of a Water Supply Master Plan. The Water Supply Master Plan will provide the Town a wholistic view of its future water demands, potential water supply opportunities, and recommendations for water resource project investments, water right portfolio expansion, and water supply financing. The co-development of these plans ensures the Town of Severance takes an integrated water management approach, recognizing the critical link between water supply and conservation. This coordinated planning strengthens the Town's water security, enhances resilience to drought by proactively managing demand, and supports long-term environmental sustainability by reducing impacts on natural ecosystems.

1.1 Statutory Requirements

The development and structure of this plan are guided by a series of statutory requirements:

The **1992 Energy Policy Act** was a federal law that set federal standards for residential appliances, including tank type toilets, showerheads and faucet aerators.

The **Water Conservation Act of 2004 (House Bill (HB) 04-1365)** – State law requires all water retailers delivering more than 2,000 acre-feet (AF) annually to prepare a water conservation plan for approval by the CWCB and makes funding available for water conservation and drought mitigation projects. While the Town delivers less than 2,000 AF per year, this legislation still applies indirectly, as developing a Water Efficiency Plan is a prerequisite for eligibility to apply for state grants and loans.

Senate Bill (SB) 15-008 requires that Water Efficiency Plan evaluate "best management practices for water demand management, water efficiency, and water conservation that may be implemented through land use planning efforts." This bill recognizes that outdoor water use is a significant portion of any municipality's annual water use, and it presents some of the greatest opportunities for active and passive water management.

SB14-103 established Colorado as a WaterSense State in 2016 by requiring that all indoor appliances (bathroom faucets, showerheads, tank-toilets, and urinals) sold after January 1, 2016, be WaterSense certified.

The **HB19-1231** expanded on SB-14-103 by adopting updating energy and water efficiency standards and expanding requirements to additional products. Notably, it required that sprinkler heads sold in Colorado be 20% more efficient than standard models when irrigation system pressure exceeds 60 psi.

The **HB20-1095** requires that municipal master plans with a water supply element must include water conservation policies.

State Turf Replacement Program (HB22-1151) – This act provides financial incentives to eligible entities, which includes local governments, districts, Native American tribes, or non-profits, for replacing high-water-use turf with water-wise landscaping. It targets the use of turf in nonessential areas that receive little use, such as medians, areas adjacent to transportation corridors, stormwater drainage and detention basins, and commercial, institutional, or industrial properties.

Water-wise Landscaping In Homeowners' Association Communities (SB23-178). This bill increased homeowners access to drought tolerant landscaping by requiring Homeowners' Association (HOAs) to provide at least three pre-approved xeriscape designs that emphasize drought-tolerant and native plants. It also prevented HOA from banning vegetable gardens in the front, back, or side yard. This legislation was an update to HB21-1229, which also addressed HOAs' ability to prohibit xeriscaping.

Prohibit Landscaping Practices for Water Conservation (SB24-005) – After January 1, 2026, local governments are prohibited from installing, planting, or placing nonfunctional turf, artificial turf, or invasive plant species on commercial, institutional, or industrial property, common interest community property, or a street right-of-way, parking lot, median, or transportation corridor. Artificial turf on athletic fields of play is exempted from the prohibitions. A fact sheet is available here.

2. Profile of Existing Water System

2.1 Overview

The Town of Severance is located in Northern Colorado approximately 16 miles east of the City of Fort Collins and is framed largely by the intersection of Weld County Road 74 and Weld County Roads 21 and 23. The Town has approximately 2,800 water service connections serving an estimated population of 10,500. More than 60% of residential customers are connected to non-potable secondary systems ("secondary systems") for irrigation.

The Town of Severance is located within the North Weld County Water District (NWCWD) service area. However, the Town owns, operates, and maintains a separate and independent potable water storage and distribution system within NWCWD. Water owned by the Town of Severance is first treated at the Soldier Canyon Filter Plant by NWCWD and delivered through a mainline to two 500,000-gallon storage tanks owned and operated by the Town. From these tanks, water is distributed through Town-owned and operated infrastructure to individual taps. Severance is responsible for acquiring its own raw water supplies, which it transfers to NWCWD on an annual basis for treatment and delivery[1]. Figure 1 shows the key components of Severance's water supply and treatment system.

2.1 Water Supply and Reliability

The Town's current water supply portfolio consists of two water sources: 1,332 Colorado-Big Thompson (CBT) units and 77 North Poudre Irrigation Company (NPIC) shares. NPIC shares include CBT supply. These sources are further described in subsequent sections. Severance also owns 13 groundwater water wells and Loup Reservoir Company shares and uses these supplies to irrigate city parks.

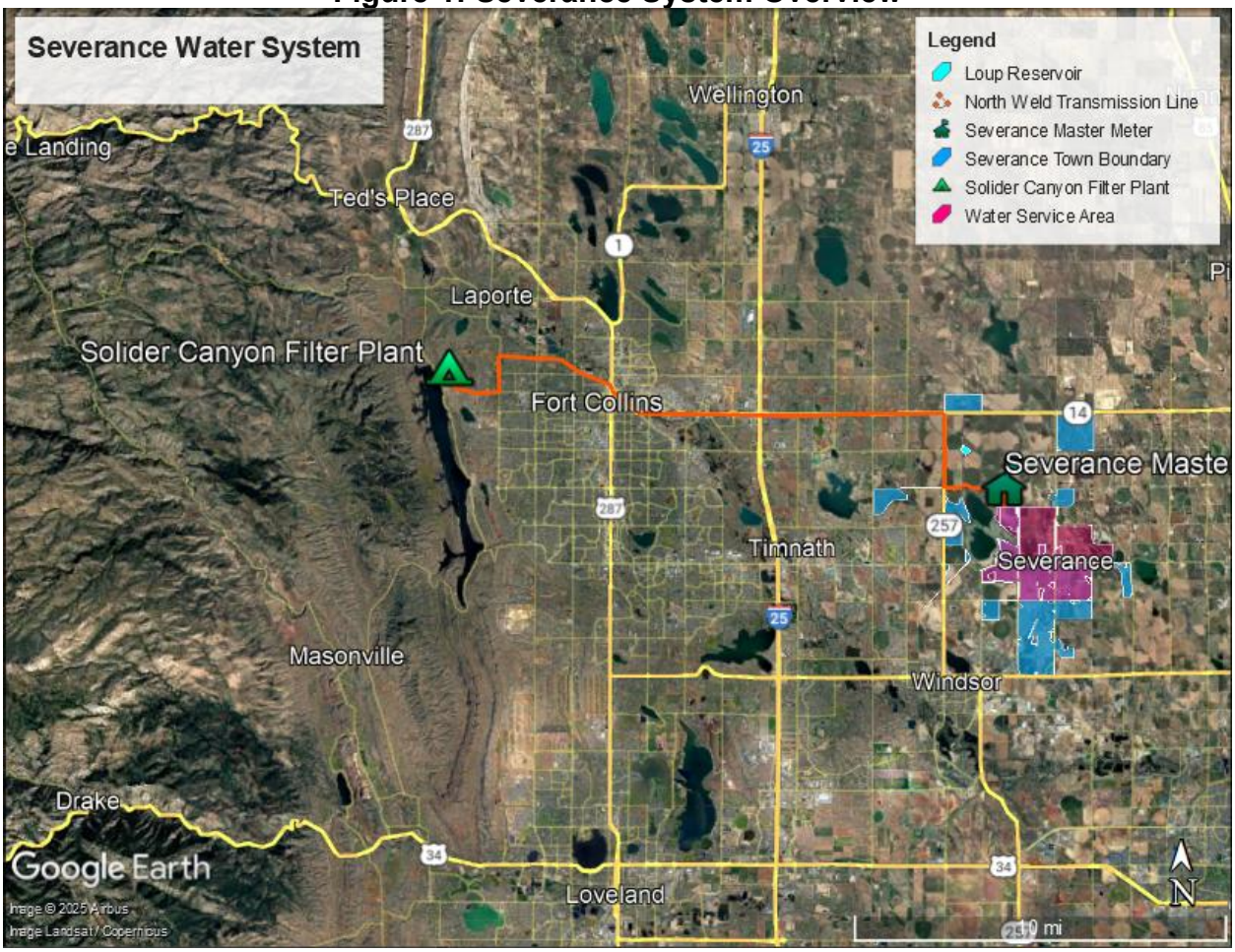
The Town employs conservative, dry-year yield estimates when defining its current water supply portfolio. The firm yield of CBT water is accepted to be 0.5 AF per unit, as the project has never delivered less than 0.5 AF for each allotted unit. For comparison, the average yield of CBT over the course of its delivery is over 0.7 AF per unit. NPIC shares provide an average yield of 2.6 AF per share of CBT water, but Severance assumes a firm yield of 1.0 AF per NPIC share based on historic ditch allocations. The Town's water right holdings for potable uses are listed in Table 1 alongside the firm yield for each water source. For planning purposes, Severance's current water portfolio is assumed to total 743 AF.

[1] Town of Severance. (2020). *2020 Comprehensive Plan.*

Table 1: Severance Sources of Potable Municipal Supply

Source	Quantity	Unit Firm Yield	Firm Yield (AF)
CBT Units	1,332 units	0.5 AF/unit	666
NPIC Shares	77 shares	1 AF/share	77
Total			**743**

Figure 1: Severance System Overview



2.1.1 Colorado-Big Thompson Project Units

The CBT project diverts water from the headwaters of the Colorado River to the Northern Front Range. The project is administered by the Northern Colorado Water Conservancy District ("Northern" or "Northern Water") and supplies water to municipalities and irrigators that own CBT allotment contracts. The entire yield of the CBT project is divided into 310,000 units based on a maximum legal diversion of 310,000 AF annually. Each year, Northern determines the quota, expressed as the percentage of 1 AF, that CBT allotees will receive. A near-average quota of 70% means that each unit of CBT will receive 0.7 AF of delivery.

Over the entire history of the CBT project, the quota has never fallen below 0.5 AF. Most municipalities recognize 0.5 AF as the firm yield for CBT. For the purposes of this report, Severance's firm yield for its CBT units is 0.5 AF per unit, which equates to 666 AF.

2.1.2 North Poudre Irrigation Company Shares

NPIC supplies water to both municipalities and irrigators in the Severance area. Over 75% of NPIC shares are currently owned by northern Front Range municipal water providers. Municipalities acquire NPIC shares in part to utilize the 4 CBT units which form the Multiple Use (MU) component of each NPIC share. When NPIC shares are transferred to municipal ownership, the CBT units remain under NPIC ownership, and the CBT units are not directly transferred to the municipality. NPIC allocates MU water every year to shareholders. These allocations vary based upon CBT allocations from Northern Water and NPIC water needs. The average allocation is 2.6 AF/share. The lowest recorded MU allocation of CBT water is 1 AF per share, which for Severance represents the firm yield of municipal supply derived from NPIC shares.

2.1.3 Raw water supplies

While not the focus of this plan, Severance owns 13 groundwater water wells and Loup Reservoir Company shares, which are used largely for lawn irrigation purposes at city parks and other public properties. These are important components of the Town's water supply portfolio that allow the Town to conserve high-value and limited potable water resources. The Town also benefits from the use of raw water supplies for lawn irrigation at new residential developments, as described in Section 3.3.1. The Town does not directly manage these supplies, and therefore, they are not included in the Town's water portfolio.

2.2 Supply-Side Limitations and Future Needs

The water market in northern Front Range has grown more competitive in recent years, increasing the price of municipal water supplies. Severance relies on CBT, which has increased in price by 123% over the last 10 years, for much of its municipal supply. Other municipal water assets that Severance is considering include native Cache la Poudre ("Poudre") River water, the Northern Integrated Supply Project, and the VITA non-tributary groundwater project.

2.2.1 CBT Units

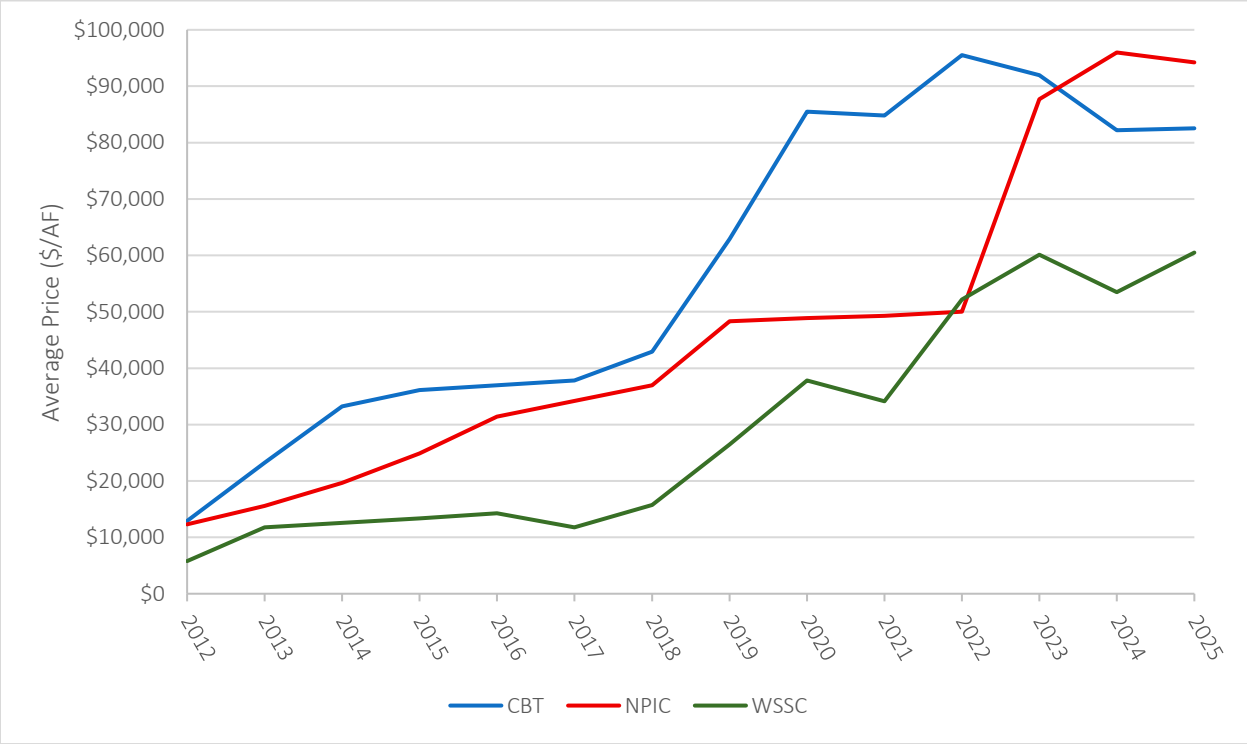
CBT is the most versatile and widely used municipal water supply source in the northern Front Range. It is highly available, reliable, and treatable, making it a valuable water asset. Since CBT is used by many water providers and transacts frequently, it generally sets the market for municipal water supply in the region.

The price of CBT has risen steadily for decades but experienced particularly rapid price escalation from 2017 to 2022. In 2017, the average price for a CBT unit was approximately $38,000/AF, but by 2022 had risen to over $95,000/AF. Since 2022, the market has corrected slightly and stabilized at approximately $82,500/AF. In recent years, NPIC shares have begun trading for higher unit (per AF) prices than CBT. The market price for NPIC shares is currently at $245,000/share or $94,250/AF on an average yield basis.

2.2.2 Cache la Poudre Native Supply

Severance owns native Poudre water rights as part of its NPIC holdings but does not use the native water portion of NPIC for municipal supply. There is intense competition for native supply on the Poudre, and ditch company shares regularly trade for over $50,000 per AF. Water Supply and Storage Company (WSSC), a commonly transacted native Poudre source used for municipal supply, currently trades for approximately $60,500 per AF. Trends in WSSC, NPIC, and CBT prices are shown in Figure 2.

Figure 2: CBT, NPIC, and WSSC Average Price 2012-2025



2.2.3 Northern Integrated Supply Project (NISP)

NISP is a proposed water supply and delivery project in the northern Front Range being developed by Northern Water. Comprised of two new reservoirs – Glade and Galeton – NISP will supply a total of 40,000 AF to fifteen municipal participants. Glade Reservoir will be located northwest of Fort Collins and divert water from the Poudre River while

Galeton will be northeast of Greeley and filled with water piped from the South Platte River. The project's total yield is anticipated to be split evenly between the two reservoirs with participant allocations broken up into 1 AF units. Reliability and yield of the project are unknown until the project is fully designed and online. All of the project's units are currently accounted for and held by Front Range municipalities; however, there has been market activity for units as municipalities increase or decrease their participation in NISP. Severance is a NISP participant with an allotment of 500 AF. Severance initially held a 1,300 AF allotment but sold 1,000 AF to Fort Collins-Loveland Water District (FCLWD) in 2024. Although NISP has faced a long timeline for development with significant uncertainty, the project's permits have been approved, a settlement for litigation has been reached, and the project is awaiting final commitments from participants. Construction is expected to begin in late 2025. Construction is expected to begin in late 2025 and the estimated unit costs range from $70,200/AF to $106,600/AF[2].

2.2.4 VITA Groundwater

Following Greeley's successful investment in the Terry Bison Ranch groundwater project, several private developers have sought a stake in the Upper Laramie Aquifer (ULA) with the hopes of marketing non-tributary groundwater to meet growing demands in the Northern Front Range. VITA H2O (VITA) is a non-tributary groundwater project being developed southeast of Terry Ranch along Highway 85 approximately five miles north of Nunn. Much like Terry Ranch, the project proposes a wellfield to pump non-tributary groundwater into a centralized onsite treatment system using ion exchange technology. The treated water will then be conveyed to end users. The project is being designed for aquifer storage and recovery in later phases. The primary delivery route is to the proposed Cobb Lake Regional Water Treatment plant (CLRWTA). Other pipelines are being explored from CLRWTA east to Severance and Eaton as well as south along the Highway 85 corridor. The VITA project is expected to yield 4,000 AF per year in Phase I with capacity being developed for up to 11,000 AF per year in later phases. The final delivery cost for VITA is anticipated above $60,000 per AF.

[2] Utilizing public data from Northern Water, WestWater developed cost estimates for NISP construction costs (at mid-point) under three scenarios, which depict progressively higher costs and lengthier construction delays. The lowest cost scenario aligns with Northern's planned construction schedule as of August 2025.

3. Severance Water Demand and Historical Demand Management

In its 2017 WEP, Severance estimated it could reduce water use by 10.9%, or 807 AF, during the 10-year planning period through water efficiency activities. This section will discuss the various factors that impacted Severance's performance against their reduction goal. One notable occurrence was the significant population growth that Severance experienced from 2018-2021, where growth rates ranged from 17% - 24% annually. By 2023, the population was nearly double the population projected for 2026 in the WEP. As such, the Town felt a better metric to evaluate the success of its WEP is a review of per capita water use in gallons per capita per day (gpcd). In the succeeding sections, the Town will present water use in this unit such that impact of per capita water usage is evident despite the significant increase in population that drives the total treated water demand.

3.1 Demographics and Service Area Characteristics

Severance delivers water within a water service area (the "WSA") that contains most of the Town's population. The remainder of Severance's population is served by other water providers, principally NWCWD. Although the Town does not track population specifically within the WSA, estimates are derived from customer billing records, specifically the number of taps added during the analysis period. The 2017 WEP reports a WSA population of 2,954 and 1,110 customer taps in 2016, yielding a ratio of 2.69 persons per tap. This ratio is applied to estimate WSA population for the years 2017 through 2024. Table 3 shows the Town's reported Town population and estimated WSA population for the years 2012–2024. Severance foresees sustained growth within their WSA, though at lower rates than those observed from 2017–2022. Section 4.1 forecasts future water demands through 2055.

Severance currently does not have any multi-family housing units but does have planned future multi-family developments totaling 195 taps. Still, single-family homes will remain the dominant home type for the foreseeable future. Severance is relatively high-income compared to nearby cities like Fort Collins and Greeley, with the median household earning $127,257[3]. Severance's median income compared to nearby cities and the rest of the state is shown in **Table 2**.

[3] data.census.gov 2024 American Community Survey 1-Year Estimates

Table 2: Median Household Income Comparison[4]

City/State	Median Household Income
Severance	$127,257
Fort Collins	$81,199
Greeley	$76,462
Colorado	$97,113

Table 3: Severance Population and Growth 2012-2024

Year	Town Population	Year-over-Year Population Growth	WSA Taps	WSA Population	Year-over-Year WSA Population Growth
2012	3,319		961	2,743	N/A
2013	3,412	3%	985	2,805	2%
2014	3,587	5%	1,011	2,862	2%
2015	3,862	8%	1,030	2,930	2%
2016	4,195	9%	1,100	2,954	1%
2017	4,500	7%	1,112	2,954	1%
2018	5,277	17%	1,214	2,986	1%
2019	6,436	22%	1,632	3,260	9%
2020	7,993	24%	1,948	4,383	34%
2021	9,639	21%	2,441	5,231	19%
2022	10,597	10%	2,677	6,555	25%
2023	10,820	2%	2,772	7,189	10%
2024	11,554	7%	2,830	7,444	4%

3.2 Historical Potable Water Demand

3.2.1 Severance's Annual Total Potable Demand

Water is treated by NWCWD and delivered to the Town's two master meters where it enters the WSA. The water is then delivered to taps within the Town's service area. Data from the Town's master meter was provided by the Town along with data for all customer meters within the WSA. Table 4 shows annual potable water deliveries from NWCWD to Severance's master meter from 2019–2024, the period of analysis (POA) for this report, in both AF and gpcd.

[4] 3 *Ibid*

Table 4: Severance Annual Demand 2019-2024

Year	Demand (AF)	Demand (gpcd)
2019	500.49	101.95
2020	664.28	113.36
2021	699.22	95.23
2022	716.21	88.94
2023	617.19	74.02
2024	675.54	79.36
Average	**645.49**	**92.14**

In the Town's 2017 WEP, the gpcd demand was far higher than per capita estimates in recent years. This suggests that Severance used water more efficiently as its population grew. Additional analysis reveals that Severance's water use became more efficient for both indoor and outdoor purposes, which will be discussed further in Section 3.3. Annual demand and average per capita water use as reported in the 2017 WEP is shown in Table 5.

Table 5: Severance Annual Demand 2012–2016

Year	Demand (AF)	Demand (gpcd)
2012	491.90	160.09
2013	421.10	134.02
2014	410.90	128.17
2015	431.30	131.41
2016	446.10	134.82
Average	**440.26**	**137.70**

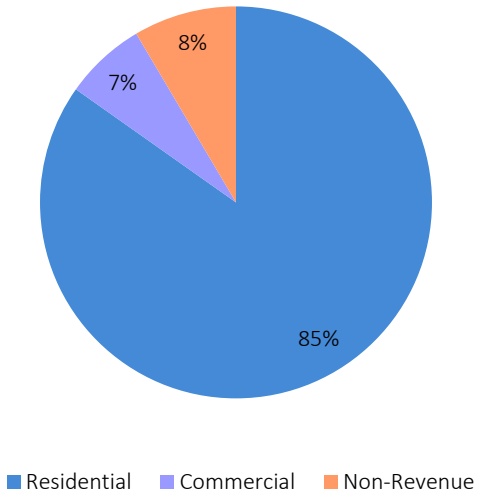
3.2.2 Annual Potable Water Use by Category

Severance divides water customers into two sectors: residential and commercial. All other water use, including losses, is categorized as non-revenue water (NRW). NRW is defined as water that is delivered to the Town via a master meter but is not billed to residential or commercial accounts; it can account for system losses, meter inaccuracy, billing errors, non-metered uses (often municipal), and theft. Most of Severance's water demand falls under residential use, which shows a significant decline in use from averages reported in the 2017 WEP. Non-revenue is the next-largest demand category, and commercial use accounts for the remainder of demand. Commercial water use has remained relatively constant for the Town, indicating population growth has coincided with a proportional increase in commercial use. In the 2017 WEP found that NRW accounted for less than 5% of demand, the Town's data for POA showed that about 8% of total water demand is NRW. Annual water use by category is shown in Table 6 and Figure 3.

Table 6: Severance Annual Water Use by Category

Year[5]	Res. Demand (AF)	Res. Demand (gpcd)	% Res	Com. Demand (AF)	Com Demand (gpcd)	% Com	NRW (AF)	NWR (gpcd)	% NWR
2012	441.50	143.59	90%	29.70	9.67	6%	20.7	6.74	4%
2013	374.70	119.17	89%	22.20	7.07	5%	24.2	7.70	6%
2014	360.20	112.28	88%	21.80	6.80	5%	28.9	9.01	7%
2015	397.20	120.94	92%	22.10	6.73	5%	12	3.66	3%
2016	399.70	120.71	90%	28.70	8.67	6%	17.7	5.35	4%
2012-16 Average	**394.66**	**123.34**	**90%**	**24.90**	**7.79**	**6%**	**20.70**	**6.49**	**5%**
2019	431.42	118.06	86%	39.24	10.75	8%	29.83	8.17	6%
2020	554.11	112.79	83%	52.13	10.62	8%	58.03	11.82	9%
2021	579.79	98.88	83%	47.59	8.12	7%	71.84	12.26	10%
2022	603.74	82.17	84%	46.97	6.40	7%	65.51	8.92	9%
2023	528.49	65.58	86%	33.71	4.19	5%	54.99	6.83	9%
2024	582.70	69.83	86%	39.03	4.68	6%	53.82	6.45	8%
2019-24 Average	**546.71**	**91.22**	**85%**	**43.11**	**7.46**	**7%**	**55.67**	**9.08**	**8%**

Figure 3: Percentage of Total Demand by Category (2020-2024)

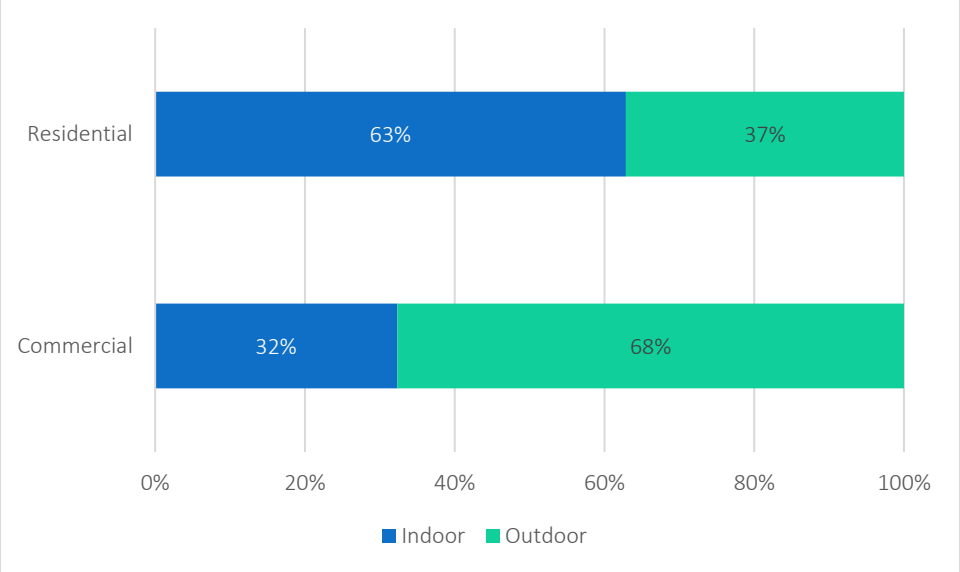


[5] Insufficient data is available for the years 2017-2019.

3.3 Indoor and Outdoor Demand

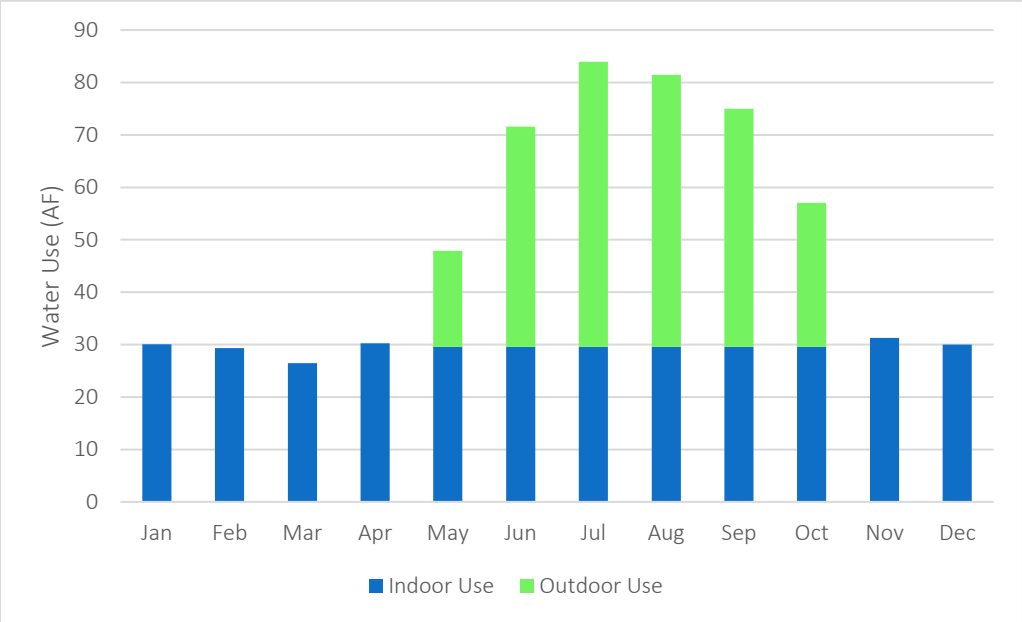
Indoor and outdoor water demand varies by customer type. The predominant water demand among residential water users is for indoor use at 63% while 37% of water demand is for outdoor use. Indoor water use is comprised of activities like cooking, cleaning, bathing, and laundry, while outdoor use covers lawn and ornamental irrigation. This contrasts the portion of indoor and outdoor demand at commercial establishments, which are 32% and 68%, respectively. Figure 4 shows the percentage split in indoor and outdoor water by customer type for the 2019 to 2024 period.

Figure 4: Percent Indoor/Outdoor Use by Customer Type (2019-2024)



Most outdoor water use in Severance occurs between May and October with the Summer months of June through September accounting for the majority of outdoor water use as shown in Figure 5. This is due to lawn irrigation, which is not necessary during the winter months. Globally, this represents a large shift from water use patterns reported under the prior WEP. Between 2012–2016, outdoor use fell from 58.5% to 39% of total billed water use, while indoor use grew from 41.5% to 61%. This significant shift in indoor and outdoor trends can be attributed to the introduction and requirement of dual water systems, as discussed in the next section.

Figure 5: Average Monthly Indoor/Outdoor Water Use



3.3.1 Single versus Dual Water Systems

Customers under the Severance WSA are categorized as single or dual water systems. Single water systems utilize potable water for both indoor and outdoor use, while dual systems utilize two separate pipe networks to supply potable water for indoor use and raw water for outdoor use. The raw water system is called a secondary system. For all subdivisions with the Town's WSA, the Town provides potable water supply for indoor use. The majority of existing homes – and all future homes – in Severance have secondary water systems, significantly reducing the amount of potable water used for irrigation and other outdoor uses.

One of the most significant changes over the POA was the Town's requirement that new developments install secondary water systems for residential lawn irrigation. While formally codified in June 2024 under Ordinance No. 2024-10, the Town began requiring the installation of secondary water systems in 2017. This ordinance requires that residential developments in designated areas construct secondary water systems to provide irrigation for residential lots and common areas within the subdivision. Developers are also responsible for acquiring and supplying the raw water necessary for these systems in both adequate quantity and quality. Given the prevalence of metropolitan districts and HOAs within the Town, the Town Council mandates that these entities operate, maintain, and repair the secondary systems. If a managing entity dissolves or fails to fulfill its responsibilities, the Town may assume operation of the system, and ownership of the associated water rights will be transferred to the Town to ensure continued service. The majority of these supplies are sourced from local ditches, which are delivered into to Town reservoirs or directly to the subdivisions.

Table 7 depicts the impacts of this local legislative action, as the average indoor demand doubled from 2012-2016 to 2019-2024. Over the same period, the outdoor demand declined as all new developments incorporated dual water systems, and the Town made efforts to convert all remaining parks and open spaces to secondary water systems.

Table 7: Severance Historical Water Demand[6]

Year	Water Usage (AF)	Indoor Demand AF	Outdoor Demand AF
2012	492	204	288
2013	421	175	246
2014	411	171	240
2015	431	179	252
2016	446	185	261
Average	**440**	**183**	**258**
2019	500	128	202
2020	664	283	290
2021	699	336	263
2022	716	354	269
2023	617	364	181
2024	676	370	241
Average	**645**	**306**	**241**

3.3.2 Parks and Open Space

Town installed secondary systems for all new parks and converted nearly all existing parks to a raw water supply. The Town uses groundwater well and its Loup Reservoir Company shares to irrigate all parks with the exception of the green space around Town Hall. The water distribution to the parks is not currently metered, although the wells are metered. The parks and their approximate acreage are provided in Table 8.

[6] Data for 2012-2017 was sourced from the Town's 2017 WEP. 2019-2024 data was provided by the Town. No data was available for 2017 or 2018.

Table 8: Severance Parks and Acreage

Park	Acres
Community Park	10.60
Overlook Park	6.88
Summit View Park	4.80
Blue Spruce Park	3.80
Lakeview Park	3.60
Town Hall	2.88
Severance Shores	2.51
Hunter's Crossing Park	2.39
Karen Suman Park	1.90
Hidden Valley Park #2	1.53
Dog Park	1.10
Hidden Valley Park #1	0.34
Brownell Park	0.30
Tailholt Park	0.18

3.5 Past and Current Demand Management Activities

Past and current demand management efforts were largely guided by the 2017 WEP, wherein the Town identified 18 water efficiency activities for implementation, which are summarized in Table 9. Severance targets three types of water use - residential, commercial, and losses (non-revenue water). Based on discussions with Town staff, Severance did not implement all activities in the planning period (see table for status updates). The Town experienced delays in implementing several activities; however, by the time of this report, many were in advanced stages of implementation. These include development of a Water Supply Master Plan, deployment of an Enhanced Automatic Water Meter Reading System, and initiation of Slow the Flow Residential Irrigation Audits. All planned and unplanned water efficiency activities are discussed in detail in Section 5. For activities not implemented, the primary challenge cited was limited staff resources.

Table 9: 2017 Water Efficiency Plans Activities and Status (2025)

Activity		Use Category			Implemented
		Residential	Commercial	NRW	
1	Leak Detection and Repair Program			X	Yes
2	Automatic Water Meter Reading Installation and Operations	X	X	X	Yes
3	Enhanced Automatic Water Meter Reading Installation and Operations	X	X	X	In Progress
4	Watering Restrictions	X	X		Yes
5	Water Efficient Rate Structure with Regular Updates	X	X		Yes
6	Tap Fees with Water Use Efficiency Incentives (Lot based water dedication)	X	X		Yes
7	Water Waste Ordinance	X	X		Yes

Activity		Use Category			Implemented
		Residential	Commercial	NRW	
8	Landscape Design Ordinances and Restrictions	X	X		Yes
9	Education Activities (Combined areas)	X	X		Yes
10	Xeriscape Demonstration Garden	X	X		Yes
11	Garden in a Box	X	X		Yes
12	System Wide Water Audits			X	No
13	Slow the Flow Residential Irrigation Audits	X			Planned for 2025
14	Indoor Residential Water Audits	X			No
15	Master Plans/Water Supply Plans	X	X	X	In progress
16	Residential and Commercial Ultra High-Efficiency Toilet Upgrade Service or High-Efficiency Toilet Rebate Program	X	X		No
17	Giveaways: Water Audit Kits	X	X		No
18	Landscape Design (Xeriscape) and Maintenance Classes	X	X		No

4. Integrated Planning and Water Efficiency Goals

4.1 Baseline Potable Demand Forecast

A baseline potable water demand forecast was developed for the Town of Severance using a land-based approach that estimated future tap counts using current and planned future zoning designations and planned development densities from the Town's municipal code. Water demand was calculated on a per-tap basis and differentiated by customer type: single-family residential, multi-family residential, and commercial. Historic water use data from existing taps serviced by the Town over the past six years (2019 to 2025) were analyzed to understand baseline water demand trends from which projections were extrapolated. The impact of local factors on water demand such as home size, lot size, climate, and price was accounted for in developing a range of future demand projections. The range captured a low, most probable scenario, and high projection and quantified the Town's total demand for potable water at buildout, with buildout defined as a future population of 15,985 reached in 2055.

The resulting projections obtained from the methods described above reflected a water demand per tap at buildout. To translate water demand per tap to total water demand, the Town's future zoning across its WSA was summarized to get a total number of acres expected to be developed under different land use categories. A range of target tap densities (water taps per acre) was multiplied by the sum of acres under each land use type to get a total number of single-family residential taps expected at buildout for each scenario. This process resulted in commercial tap count estimates that were higher than reasonably expected for the Town of Severance, so an alternative approach for estimating commercial tap counts using the existing population per commercial tap was explored. Using the same proportion of residents to commercial taps as in 2025 would suggest 46 commercial taps will be established in Severance at build-out. This method, confirmed by Town staff, sets a reasonable scale for tap count. Multi-family residential tap counts were added for known future developments. Finally, the number of taps per customer type was multiplied by the demand per tap to get an acre-foot demand for each customer type under each scenario at buildout.

Severance's projected water demand at buildout was scaled to actual population predictions at five-year intervals. These demands were converted to total water demand at the Soldier Canyon Filter Plant, assuming 18% non-revenue water[7]. Table 10 lists forecasted water demand by scenario across the next five decades while

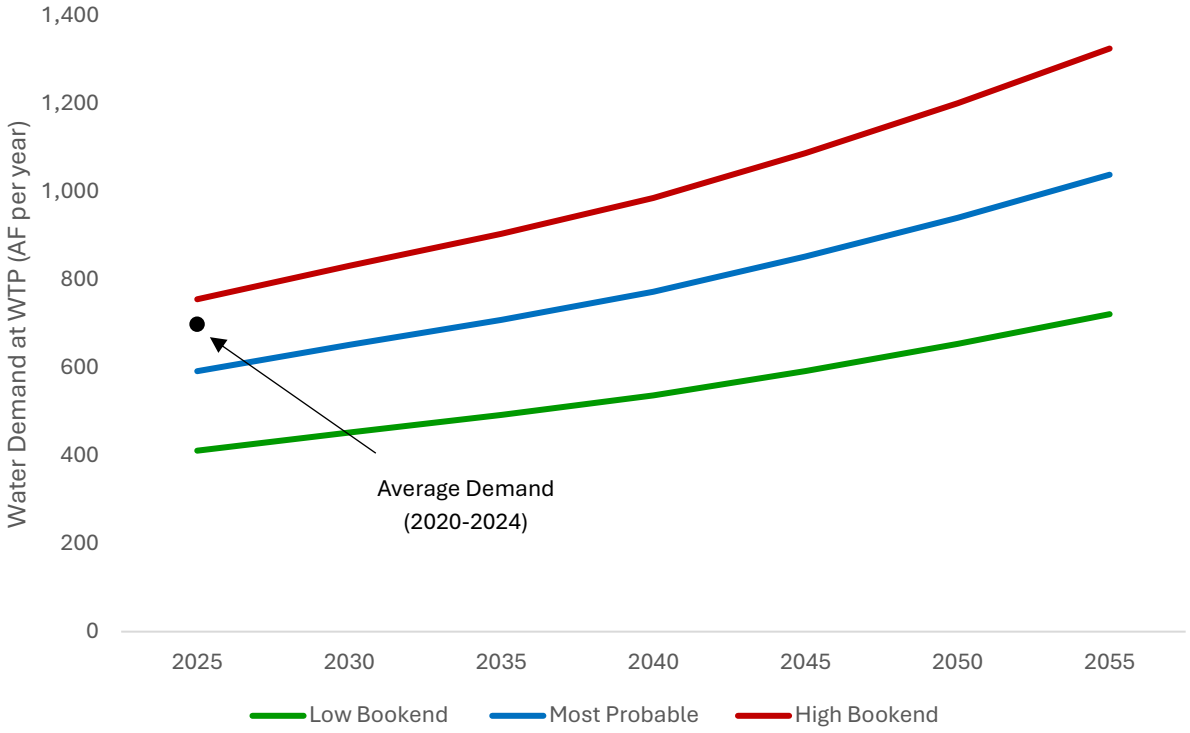
Figure 6 shows the projections graphically.

[7] 18% non-revenue includes 8% non-revenue water within the Severance WSA and 10% losses between the Soldier Canyon Filter Plant and the Severance Master Meter, a loss rate that is defined by NWCWD.

Table 10: Forecasted Total Water Demand at the Treatment Plant

			Demand (AF per year)		
Year	Population	Residential Taps	Low Bookend	Most Probable	High Bookend
2025	10,859	2,838	408	587	749
2030	11,609	3,133	449	646	824
2035	12,262	3,417	488	702	897
2040	12,977	3,735	532	765	977
2045	13,911	4,122	587	845	1,078
2050	14,912	4,530	648	932	1,190
2055	15,985	4,979	715	1,029	1,314

Figure 6: Range of Future Water Demands



4.1.1 Water Supply Gap Scenarios

Severance currently sources its water supply from 1,332 CBT units and 77 NPIC shares. Using average yields for both assets equates to an annual supply of 1,132 AF, creating a supply surplus of 103 AF. In a dry year, however, the projected yield for Severance's potable water supplies drops to 743 AF, creating a supply gap of 286 AF under the Most Probable Scenario. Furthermore, the High Bookend scenario projects a supply gap of 553 AF in a dry year. A full breakdown of water supply gaps under different scenarios is shown in Table 11.

Table 11: Water Supply Gap Scenarios

		Low Bookend	Most Probable	High Bookend
	Demand	715	1,029	1,314
Water Year Type	**Water Supply (AF)**	**Water Supply Gap (AF)**		
Dry Year	743	28	(286)	(571)
Average Year	1,132	417	103	(182)
Wet Year	1,582	867	553	269

4.1.2 Baseline Demand Assumptions

It is important to note that this demand forecast accounts for several water efficiency and conservation measures through per-tap water use adjustments. Key assumptions[8] include:

- Price elasticity: Higher water rates are expected to result in lower water use.
- Climate impacts: Rising average temperatures are anticipated to increase water use.
- Raw water conservation: Consistent with municipal code, new developments are assumed to meet outdoor irrigation needs with a raw water supply provided by developers.

The water savings identified in this plan are in addition to those achieved through existing water efficiency programs.

4.2 Water Efficiency Goals

4.2.1 Performance Review

Water efficiency goals provide the foundation for the screening and selection of selected activities, as described in Section 5. Town Staff began by reviewing water efficiency goals from the 2017 WEP goals and Severance's actual performance. Overall water use has not increased proportionally with population growth in the Town. Between 2016 and 2024, Severance experienced unprecedented population growth (Table 3), adding 4,646 residentials within the Town's WSA, reaching a total population of 7,444 in 2024. This far exceeded the 2017's WEP 2024 projection of 4,565 within the WSA, surpassing the estimate by 64%. Despite this under-projection, actual water uses in 2024 totaled 675 AF—only 13% than the 2017 WEP's projected demand of 595 AF.

Table 12 shows Severance performed strongly on its water savings goal related to per capita use, **exceeding its target by more than 36%.** The Town set a goal to reduce water use from 138 gpcd in 2016 to 125 gpcd by 2024. Actual 2024 use declined further,

[8] Additional details on Baseline Demand are presented the Town of Severance: Water Supply Master Plan.

reaching 92 gpcd, based on 675 AF of demand and a population of 7,600 (see Table 4). For comparison, under the 2017 WEP's projected population of 4,565, water use would have been 644 AF at 126 gpcd versus 471 AF at 92 gpcd. **This indicates Severance achieved a cumulative savings of 173 AF over the POA beyond what was projected in the 2017 WEP when adjusted for population**, demonstrating Severance's strong performance in water efficiency.

For goals regarding customer categories, the 2017 WEP presents baseline demand in each category for 2017-2026 and the total volume of savings target. It is difficult to directly compare the Town's performance against its customer category goals for several reasons:

1. The plan projected savings over a 10-year period, through 2026, and neither 2025 nor 2026 data is factored into this analysis.
2. The Town could not share water use data from 2017 to 2018 due to a change in billing systems in 2019.

In total, this represents four years of incomplete data, which were excluded from the analysis. Over the 6-year POA, the Town achieved 716 AF of residential water savings, averaging 119 AF per year. If similar trends held for 2017–2018 and continue through 2026, the Town is on track to exceed its residential goals, underscoring the impact of dual water systems on savings. Conversely, for the commercial category, the Town increased use by 6 AF, and for the non-revenue water category, the Town increased use by 124 AF. The growth in commercial use is unsurprising given the significant growth in population, while the growth in non-revenue warrants further investigation.

Table 12: Town of Severance Performance against 2017 Water Efficiency Plan

Preliminary Goals	2017 WEP Baseline	2017 Target Savings	2024 Performance	Status
Lower the total per capita water use by 10% over the 10-year planning period	138 gpcd[9]	125 gpcd	92 gpcd	Surpassed goal by 36%
Targeted 10-year water reduction goals for the following customer categories[10]:				
Residential: 11%	6,663 AF	733 AF	716 AF	Likely achieved goal
Commercial: 5%	420 AF	57 AF	-6 AF	Not achieved
Non-Revenue Water: 4%	350 AF	26 AF	-124 AF	Not achieved
Develop a water efficiency program that can be implemented within Town staffing constraints and with Town Board approval	Achieved			
To implement water efficiency activities that are compatible with the community and their Town Board representatives	Achieved			

[9] Average per capita use 2012-2016.

[10] The baseline column presents unmodified projected use for 2017 – 2016.

4.2.2 Preliminary Water Efficiency Goals

The Town prepared this list of preliminary water efficiency goals to guide the development of its Water Efficiency Roadmap in Section 5. This list of goals is informed by discussions with Town staff and the observed strengths and weaknesses of the 2017 WEP. These water efficiency goals establish targeted objectives designed to achieve specific benefits and outcomes for the Town.

The Town proposes two quantitative and two qualitative goals to serve as the basis of water savings targets:

- **Goal 1: 10% reduction of the water supply gap**. The Town of Severance is projected to have a water supply gap of 286 AF at full build-out of the WSA. As such, the Town proposes meeting at least 10% of the water supply gap, 28.6 AF, through water efficiency and water conservation efforts described in this plan.
- **Goal 2**: **Reduce non-revenue water to no more than 5%**. A review of water use data for 2019-2024 reveals the Town's non-revenue water levels averaged 8% over the period of analysis. This represents a 3% increase from levels reported in the 2017 WEP. This increase coincided with significant population growth and average per capita NRW rose from an average of 6.49 gpcd for 2012 -2016 to 9.08 gpcd for 2019-2024. The Town will take steps to investigate the increased NRW and return to a maximum level of 5%.
- **Goal 3**: Develop a water efficiency program that can be implemented within Town staffing constraints and with Town Board approval.
    - This goal acknowledges that Severance, as a small municipality, has a limited staff with many competing responsibilities. Given the size of the water utility, the Town cannot justify hiring a full-time Water Conservation Specialist. Therefore, water conservation duties to support this plan's implementation will be distributed among existing staff and integrated into their current roles. This goal ensures that selected activities remain realistic and achievable within the Town's staffing capacity.
- **Goal 4**: Implement water efficiency activities that are compatible with the community and their Town Board representatives.
    - This goal recognizes that lasting water efficiency depends on the support and participation of the community it serves. By implementing activities that are compatible with both residents and their Town Board representatives, the Town can foster trust, transparency, and collaboration in achieving its water efficiency objectives. Building community buy-in helps ensure that water-saving practices are understood, accepted, and sustained over time.

5. Water Efficiency Roadmap

The Town of Severance will continue to build on existing efficiency strategies and incorporate new strategies to meet its efficiency goals. These strategies will be designed to reach the entire WSA and will focus on creating a diverse, balanced, cost-effective portfolio that supports long-term water efficiency. This plan defines optimal water efficiency activities not only by their capacity to achieve measurable reductions toward quantitative water savings goals, but also by their ease of tracking, feasibility within financial and staffing constraints, and alignment with the Severance community. This section provides a roadmap for advancing these objectives.

5.1 Summary of the Selection Process

The Town implemented a step-by-step process to evaluate and select water efficiency activities:

1. **Demand Management Review**. The Town compiled a list of demand management activities, or water efficiency activities (WEA), outlined in the 2017 Water Efficiency Plan (Table 9). The Town Manager reviewed the list and identified which activities had been implemented.
2. **Interview with Town Staff**. Town staff participated in a qualitative interview process, recalling WEAs implemented since 2017 and sharing feedback on which they found most impactful and worth continuing. Their responses were cross-referenced with the 2017 WEA list to ensure the Town had a comprehensive set of activities to consider for the 2025 plan. Activities highlighted by staff are assumed to generate strong interest and support, while those not mentioned or not implemented can be re-evaluated to determine their fit for the Town moving forward.
3. **Water Use Segmentation**. The water use segmentation exercise enabled the Town to identify the largest opportunities for water savings. Results are presented in Section 5.1.1. By identifying target water uses, the Town can more effectively filter the list of WEAs.
4. **Final Screening**. The final screening compiled data from the prior steps to filter the full list of potential WEAs. This list, presented in Section 5.2, was confirmed by Town Leadership. Selected activities were used to develop the water use projections presented in Section 5.3.

Throughout this process, the Citizen Advisory Board was regularly updated on the plan's development and consulted to gather resident perspectives on water efficiency issues and potential opportunities.

5.1.1 Water Use Segmentation

To identify the most significant opportunities for water savings, the Town analyzed water use data from 2019 to 2024. The data, organized by residential and commercial accounts, also included estimates of non-revenue water. For single- and dual-system households,

water use was further segmented into indoor and outdoor categories. This three-dimensional analysis enabled the Town to identify usage trends and highlight areas with the greatest potential for water savings.

Residential customers
Nearly 60% of the WSA population, comprising approximately 1,387 taps, resides within new developments built after 2016. From this, it can be assumed the majority of households were built with dual water systems and constructed with WaterSense appliances. All other residential customers, comprising approximately 1,110 taps, reside within older homes equipped with single water systems, including 59 homes that were constructed prior to 1994.

The year 2016 serves as a division both for indoor efficiency (WaterSense Certification) and outdoor efficiency (installation of non-potable service lines in dual system households). As such, the Town considers customers residing in dual system households to generally be highly water efficient as it relates to potable water use. The Town generated the following insights into residential customers:

- Indoor. A comparison of single- and dual-system customers shows a notable difference in per capita water use, with rates of 50 gpcd and 41 gpcd, respectively. The Colorado WaterWise 2024 Best Practices Guidebook defines efficient indoor use as 40–50 gpcd, indicating that both household types fall within the efficient range. Since the majority of residential customers in the WSA already meet this standard, the Town does not plan to prioritize residential indoor water use in its efficiency efforts.
- Outdoor. Because the Town does not manage or monitor outdoor use at dual system households, the Town will focus on outdoor use at single system households.

Commercial Indoor Use. The Town's WSA includes 31 commercial accounts, all established between 1996 and 2024. Average annual commercial indoor use over the POA is estimated at 13.8 AF per year. Since all commercial properties were built after the 1994 Energy Policy Act, they are assumed to use water-efficient fixtures. About half of the accounts were built in 2016 or later and are assumed to use WaterSense-certified appliances. WaterSense fixtures provide 20–50% greater efficiency than standard models. Because commercial indoor use accounts for just 2% of total demand, the overall potential for large water savings is limited. Nonetheless, the relatively small number of accounts makes it feasible for the Town to target specific older or high-traffic businesses (e.g., Rangeview Elementary School) with water efficiency initiatives.

Commercial Outdoor Use. Commercial outdoor use represents 4.5% of total demand and 68% of total commercial use. Although this comprises a relatively small share of overall demand, it presents significant opportunities for water savings. For example, Rangeview Elementary School averages 12 AF per year for lawn irrigation. Converting this demand to a raw water source could save the Town 12 AF of potable water annually.

Non-Revenue Water. Non-revenue water increased from 5% of supplies in 2012–2016 to 8% in 2019–2024. The Town's goal is to reduce non-revenue water back to a maximum of 5%.

5.2 Water Efficiency Activities

Colorado Revised Statute § 37-60-126, which concerns water conservation and drought mitigation planning, requires water retailers to consider specific activities within their water efficiency plan. The activities detailed in the CRS are organized into four categories for the purpose of discussion below. These categories comprise activities that contribute to both direct and indirect water savings. Many of these activities are designed to work in conjunction with other programs to support overall water use savings. It is not possible to accurately assign a direct savings influenced by each individual activity, but rather as a collective program. For example, educational activities alone may not result in a direct reduction in water use, however, informed and engaged customers are critical to the success of many WEAs.

Efficiency Upgrades. Upgrading infrastructure can contribute significant direct water savings, particularly when existing infrastructure is outdated and inefficient. Efficiency upgrades typically involve a physical change to the system that improves water use efficiency. Colorado earned its certification as a WaterSense State in 2016 when it began requiring all new appliances sold in the state to meet WaterSense efficiency standards. Water savings related to efficiency upgrades are relatively straight-forward to quantify. Similarly, the installation of low water use landscapes or more efficient irrigation systems could also be measured based on an assumed baseline efficiency estimate and level of uptake.

Educational. Educational activities are designed to engage and inform the public, helping homeowners bridge knowledge gaps related to water conservation and empowering them to adopt voluntary conservation practices. These activities are a critical component of any conservation plan, as many residents wish to save water but lack the skills or knowledge to do so effectively. Educational efforts support broader water efficiency strategies by raising awareness, fostering water-conscious behaviors, and encouraging the adoption of efficient appliances and landscaping. While essential, the direct impact of educational activities is difficult to measure, making them an indirect contributor to water savings.

Regulatory. Regulatory activities ensure that water use remains within boundaries that the Town deems acceptable. Regulation is an important tool for water conservation, and intelligent policy can prevent waste and careless use of water. Regulations are typically introduced at the local level, through municipal codes. Like educational activities, the effects of regulatory activities are difficult to directly measure given Severance has employed these measures for more than a decade.

Economic. Economic conservation activities involve strategically pricing water to incentivize conservation and disincentive overuse. Severance's economic activities include a tiered water rate structure, which discourages high water use.

Severance presents its list of ongoing and new WEAs in Table 13. This list represents a concise and actionable list of activities to be implemented by the Town. Descriptions of each activity are provided below.

Table 13: Current and New Water Efficiency Activities

	Activity	WEA Type	Activity Status	Targeted Water Use Type
1	Leak Detection and Repair Program	Efficiency Upgrade	Ongoing	NRW
2	System Wide Water Audits	Efficiency Upgrade	New	NRW
3	Enhanced Automatic Water Meter Reading Installation and Operations	Efficiency Upgrade / Educational	New	All
4	Slow the Flow Irrigation Audits	Efficiency Upgrade	New	Residential Outdoor Commercial Outdoor
5	Garden in a Box	Efficiency Upgrade	Ongoing	Residential Outdoor Commercial Outdoor
6	High-Efficiency Rebate Program	Efficiency Upgrade	New	Residential Indoor Commercial Indoor
7	Customer Outreach and Education	Educational	Ongoing	All
8	Xeriscape Demonstration Garden	Educational	Ongoing	Residential Outdoor Commercial Outdoor
9	Water Supply Master Plan	Efficiency Upgrade Educational Regulatory Economic	Ongoing	All
10	Watering Restrictions	Regulatory	Ongoing	Residential Outdoor Commercial Outdoor
11	Water Waste Ordinance	Regulatory	Ongoing	Residential Outdoor Commercial Outdoor
12	Landscape Design Ordinances and Restrictions	Regulatory	New	Residential Outdoor Commercial Outdoor
13	Non-Potable Water Conversions	Regulator	Ongoing	Residential Outdoor Commercial Outdoor
14	Conservation-Oriented Rate Structure	Economic	Ongoing	All

5.2.1 Water Efficiency Upgrades

Leak Detection and Repair Program. Through this program, the Town partners with an external consultant to identify and repair system leaks that Town staff cannot locate, with a primary focus on non-residential portions of the water system. Tenants or Town Staff submit reports of leaks, and if the source cannot be easily located, a consultant is engaged in correcting the issue. The continuation of this program will be an important step to curtail increased levels of NRW. The Town reported they had engaged a

consultant more than 12 times over the past three years, a period which notably correlates with a steady drop of NRW, as shown in Table 6.

System Wide Water Audits. This activity targets NRW losses as it is designed to identify unmetered and unbilled treated water uses. In contrast to the Leak Detection and Repair Program, which is a reactionary measure, water audits are a proactive approach to locating and correcting losses before they are realized. The International Water Association and the American Water Works Association (AWWA) Manual of Practice M36 Water Loss Audit is a practical and user-friendly guide designed for utilities to efficiency manager their supply. The CWCB through the Colorado Water Loss Initiative (CWLI) provides a comprehensive training and assistance program for utilities across Colorado. The program's funding targets the largest 165 water systems; however, smaller utilities may participate when space is available. Severance will monitor opportunities for its staff to participate in the training through CWLI as well as potential funding sources for staff to participate in other AWWA M36 training courses.

Enhanced Automatic Water Meter Reading Installation and Operations. The Town utilizes Neptune Automatic Meter Reading (AMR) meters for all customers in the WSA. AMR systems facilitate quicker data processing with lower error rates. Under the basic AMR system, the Town collected data through drive-by or walk-by methods. The Town began the installation of the Enhanced AMR in the Summer 2025. This upgrade requires the replacement of nearly $20,000 worth of meters but will provide fully automated remote meter reading, eliminating the need for physical data collection. In addition to freeing up significant time, this improvement includes an online portal that will allow customers to view billing and metering data in real-time. Customers will become better educated in their water usage and have more opportunities to adjust their usage over the course of the month. The online portal is expected to be available to customers by the end of 2025. This activity has the potential to generate savings across all categories of water use.

Slow the Flow Irrigation Audits. Resource Central is a non-profit organization based in Boulder, Colorado, working to build a resilient and waterwise Colorado. Resource Central offers a water conservation partnership program to water providers and municipalities. Among these programs is Slow the Flow Sprinkler Evaluations, whereby residential and non-residential sprinkler evaluations are offered free to partnering water providers. In addition to evaluations, the Resource Central can assist with the installation of smart controllers and rain sensors. Becoming a municipal partner will support reducing water use by outdoor residential and commercial customers.

Garden in a Box. Resource Central also leads the Garden in a Box program, offering a selection of professional designed, drought tolerant water garden kits to Colorado customers as an alternative to replace water-intensive turf grass. The program offers gardens for purchase twice a year with pre-ordering occurring in March and June for pickup in May and June and August and September, respectively. From 2022-2024, Severance pre-purchased and sold at cost 20 garden kits a year. Given the positive reception of this program, Severance plans to increase the number of pre-purchased kits

to offer to water customers. This activity targets reductions in both residential and commercial outdoor water use.

High-Efficiency Rebate Program. Rebate programs are an effective way to motivate customers to replace water intensive appliances. Rebate programs in Colorado offer customers rebates for WaterSense and ENERGY STAR certified appliances, often times offering rebates for appliances that go beyond minimum standards. Large utilities like Denver Water and Colorado Springs Utilities develop their own programs, while medium-sized utilities like Fort Collins and Longmont partner with Efficiency Works, which provides rebate programs across sectors, including power. The ultra-high-efficiency toilet rebate program formally offered by Resource Central is no longer offered. Rebate programs are relatively resource and cost intensive and therefore may not be appropriate for a small municipality like Severance. Nonetheless, Severance recognizes that water efficient appliances are a key tool to generate water savings for indoor residential and commercial customers and commits to exploring options for partnerships.

5.2.2 Educational Activities

Customer Outreach and Education. Each summer, the Town runs a regular public outreach campaign on efficient water use. Education materials include bill stuffers, newsletters, newspaper articles, mass mailings, and outreach channels including social media and Severance's website. These efforts are important for raising customer awareness on the importance of water consciousness and highlighting efforts and programs offered by the Town. These activities are complementary to all other WEAs and support savings for all water use types.

Entities in Colorado regularly release updated new resources to support water providers, residents, and businesses in their efforts to improve water efficiency. Each WEP update provides the Town with an opportunity to identify new resources and make them available on the Severance website. Below is an updated list of organizations and resources:

- Colorado WaterWise is a water conservation forum whose mission is to address "the state's water challenges by improving water efficiency through diverse community connections, innovative solutions and valuable member resources." They provide access to technical tools, regional experts, and a professional network. In 2024, they published the latest edition of the Guidebook of Best Practices for Municipal Water Conservation in Colorado. The guidebook serves to promote the implementation of water conservation practices throughout Colorado to foster a more sustainable water future for the state's communities, environment, and economy.
- Resource Central is a nonprofit organization based in Colorado that helps communities put conservation into practice through innovative programs focused on water, energy, and waste reduction. Founded in 1976, the organization partners with local governments, utilities, and residents to create practical, cost-effective solutions that make it easier to live sustainably. Its mission is to empower

individuals and communities to save natural resources while also saving money, making conservation accessible, impactful, and lasting. They lead the following water efficiency programs:
    - Garden in a Box
    - Slow the Flow
    - Lawn Replacement
- Colorado Native Grass Guide – Installation and Maintenance Guide
- DIY Landscape Transformation Guide. English. Spanish

Xeriscape Demonstration Garden. The Town maintains two xeriscape demonstration gardens to showcase not only the potential water savings, but also the beauty and variety that xeriscape landscaping can provide. Using grants from Northern Water, the Town installed a demonstration garden at Town Hall in 2019 and at Summit View Park in 2020. The Town will seek further grants to support the installation of two additional demonstration gardens at high traffic areas such as Clearview Library, Rangeview Elementary School, or Severance High School. The Town will advertise these gardens through educational materials. In particular, the launch of the customer portal provides additional channel through which the Town can target single system residential and commercial customers to consider xeriscape lawn conversions.

Water Supply Master Plan. The development of the Water Supply Master Plan alongside the Water Efficiency Plan ensures the Town employs an integrated water supply planning approach. This approach recognizes that demand management is an essential component of water supply planning, contributing to the more efficient use of limited water resources. A clearer understanding of water use trends strengthens the Town's ability to plan for growth responsibly and cost-effectively.

5.2.3 Regulatory Activities

The Town uses regulatory measures to promote efficient water use within its WSA, guided by federal and state laws as well as municipal ordinances. Regulatory measures are the Town's primary tool for integrating water supply and land use planning. The Town recognizes integrated planning as the most effective way to limit the need for future water supplies, avoid costly new treatment and conveyance infrastructure, and strengthen resilience against drought. While enforcement is a shared responsibility among all Town staff, the Community Service Officer plays a primary role in issuing warnings and citations. Most enforcement actions stem from citizen reports, which can be submitted through the Town's online Citizen Request Tracker.

Watering Restrictions. The Town has instituted watering restrictions since 2003. These restrictions are codified under the Water Restriction Resolution No. 2013-07R.

Established by the Town Council, the regulations are posted on the Severance Watering Guidance and Restrictions website[11]. Key restrictions include:

- No watering from December 1st through March 31st
- Homeowner Association common areas, multi-family residences, apartments, businesses, government, non-profit, churches, commercial, industries, and institutions are restricted to watering on Sunday, Wednesday, and Fridays
- No watering from 11:00 a.m. and 5:00 p.m.

Notably, dual system households and customers under the NWCWD water system are excluded from these restrictions. These restrictions are designed to target residential and commercial customers on single systems that utilize a potable water supply.

Water Waste Ordinance. Complementing its watering restrictions, Section 13-1-160 of the municipal code specifies it is unlawful to allow water to be wasted in any manner. This covers activities such as car washing, requiring washing by a bucket only and that vehicle rinses can last no more than five minutes by a hose, which has a shut off valve. This ordinance targets residential and commercial customers on single systems.

Landscape Design Ordinances and Restrictions. While the Town does not have local landscape design ordinances, it is worth reiterating the series of state-level legislation enacted since the last WEP to which the Town adheres:

- Water-wise Landscaping In Homeowners' Association Communities (SB23-178) – Increases homeowner access to xeriscaping and home gardens in areas managed by an HOA.
- Prohibit Landscaping Practices for Water Conservation (SB24-005) – Prohibits the use of nonfunctional turf, artificial turf, or invasive plants on certain properties (commercial, common interest, right-of-way, medians, etc.). The Town is in the process of incorporating legislation into the municipal code at the time of writing.

Non-Potable Water Conversions. Since 2017, Severance has required the installation of dual water systems at new development within the Town's WSA. This activity is the Town's primary application of land use integration within its WEP. In these developments, lawn irrigation is served by a raw water supply. Alongside this, the Town has made efforts to convert existing parks to a raw supply as well. These practices have significantly reduced treated outdoor residential and commercial water use (Table 7). It remains for just a handful of properties to be converted to a raw water supply. These properties include the Town Hall and the Rangeview Elementary School, both of which are classified as commercial clients. Rangeview Elementary School has a dedicated 3" meter, which has recorded an average water use of 12 AF per year from 2019-2024. The Town will target both customers for conversion to a raw water supply.

[11] https://www.townofseverance.org/396/Watering-Guidelines-and-Restrictions

5.2.4 Economic Activities

Conservation-oriented rate structure. The Town's rate structure can be considered conservation-oriented in that it establishes a water-use budget based on tap size and discourages consumption beyond the allotted annual volume. As an example, water rates at single system households with a ¾" tap are structured as follows for 2025:

- A base rate: $36.14/month.
- A per kilogallon rate, $8.41/kgal, for use up to 205,000 gallons per year.
- Exceedance Rate: $16.33/kgal for use above 205,000 gallons per year.

Severance sets its standard allotment for a standard ¾" tap to 205,000 gallons per year at single system homes. This allotment is reduced to 61,500-68,333 gallons per year for dual system households. Both thresholds are well above the average use for customers with these tap sizes, indicating that the tiered rate structures currently discourage only the most excessive levels of water use.

Above the annual water use allotment, the Town adds a Water Surcharge Fee, to recover the Town's cost to obtain additional water rights, and a Plant Investment Surcharge, which covers the Town's cost of treating and servicing the additional water. With the planned launch of a customer portal in 2026, customers will gain clearer insight into their water use trends and how their consumption compares to the basic annual allotment. The customer portal also helps prepare customers for a potential transition to a more aggressive conservation-oriented rate structure if the Town deems it necessary in the future. This activity targets all water use categories.

5.3 Water Savings by Customer

Implementation of this water efficiency roadmap is projected to reduce potable water supply gap by at least 10%, or approximately 29 AF per year, by 2035. As noted, water efficiency activities (WEAs) generate both direct and indirect savings; this section focuses on estimated direct savings from WEAs. It also highlights ongoing WEAs already incorporated into the baseline demand forecast, which are emphasized here due to their significant contributions to reduced future water use.

5.3.1 Residential Indoor

Water use data indicates that Severance residents meet the definition of water efficient users, indicating this category likely does not present significant opportunity to generate water savings. Nonetheless, it is expected that residents having access to an online customer portal that allows monitoring of water use in real-time could generate modest reductions in water use. With an existing average residential indoor use of 344 AF per year and assuming a 1% reduction, the Town expects to generate 3.4 AF of savings a year.

Although these savings are already reflected in the baseline demand, it is important to recognize the impact of WaterSense appliance installations on overall water use. The Town determined that residential indoor use at single and dual systems households was 50 versus 41 gpcd, which translates to a difference in annual use per tap of 9,469 gallons per year. Demand projections estimate approximately 581 new residential taps by 2035, which equates to 16.88 AF per year in savings by 2035. This is presented separately from total savings as these savings are already captured in the baseline demand.

Table 14 presents projected water savings for the commercial outdoor use category.

Table 14: Projected Residential Indoor Water Savings

Residential Indoor	Water Savings Annual (AF)
Enhanced Automatic Water Meter Reading Installation and Operations	3.44
Total	3.44
WaterSense Appliances (Baseline savings recognition)	16.88 (2035)

5.3.2 Residential Outdoor

Residential outdoor water use represents the second largest use of water for the Town, accounting for 31.3% of total use, or 202 AF per year. As discussed, residential outdoor water use occurs at single system homes only. In 2024, records indicated the Town had 1,083 accounts listed as single system households. Quantifiable WEAs that address water use by these customers include the Enhance Automatic Water Meter Reading Installation and Operations, Slow the Flow Irrigation Audits, and Garden in a Box. Table 15 shows that water savings estimates in this category are modest, predicated largely on the assumption that water use will be reduced when the online customer portal becomes available to customers. Savings from the Enhanced Automatic Water Meter Reading Installation are estimated at 2%. The Garden in a Box is estimated to save 5,000 gallons per year on average next to turf grass, reducing water use from 19 gallon per sq. ft per year for cool-season turf grass to 8 gallons per sq. ft per year for Garden in a Box. From the Town water supply perspective, this represents modest savings, but from the customer perspective, this represents savings of around $42.05 per year on lawn irrigation according to 2025 rates. Finally, the Slow the Flow Audit also presents the potential for modest savings, assuming a moderate uptake of 20 participants a year. The remaining WEAs identified for this use category were in-place since the 2017 WEP and are thus already accounted for under the unmodified demand.

While not directly contributing to water savings, it is important to recognize the savings generated by the dual water system ordinance for this water use category. A comparison of water use at single system and dual system households reveals that dual system households generate a potable water savings of about 70,600 gallons/tap per year. Demand projections estimate approximately 581 new residential taps by 2035, which equates to 110 AF per year in savings by 2035. This is presented separately from total savings as these savings are already captured in the baseline demand.

Table 15 presents projected water savings for the outdoor commercial use category.

Table 15: Projected Residential Outdoor Water Savings

Residential Outdoor	Water Savings Annual (AF)
Slow the Flow Irrigation Audits	0.19
Garden in a Box	0.29
Enhanced Automatic Water Meter Reading Installation and Operations	4.07
Total	4.54
Dual Water Systems (Baseline savings recognition)	110 (2035)

5.3.3 Commercial Indoor

Commercial indoor water use composes only 2.1% of Severance's average annual water demand, an estimated 13.8 AF per year. Designing water savings goals for this category is difficult given that water use in the non-residential sector is relatively minor and highly variable. Educational activities play a key role in informing businesses on their opportunities to reduce water use, which could, in turn, motivate business to employ appliance efficiency upgrades. The updating of plumbing fixtures presents some great opportunities for reduction in water use. The Colorado WaterWise Guide Practices summarizes plumbing fixtures over time, showing that water efficiency toilets and urinals could generate savings of 20% and 50%, respectively. Public institutions, which are captured as commercial customers, such as the library and Rangeview Elementary School, could be targeted by the Town for appliance upgrades. The Town could target private businesses with WaterWise literature, informing them of opportunities to reduce their water bills through appliance upgrades. Given the uncertainty in uptake of water efficient appliances by commercial use, the Town estimates a 10% reduction in use for existing commercial customers, or an annual savings of 1.3 AF by 2035.

5.3.4 Commercial Outdoor

Commercial outdoor water use composes only 4.5% of Severance's average annual water demand for the POA but nonetheless, it presents big opportunities for water savings. Annually, commercial outdoor water use is about 38 AF per year. The WEAs that will contribute to direct water savings include greenspace conversion to a raw water supply, and to a lesser extent, Slow the Flow Irrigation Audit and Enhance Automatic Water Meter Reading Installation and Operations.

Rangeview Elementary is Severance's largest commercial water user, with an average demand of 12 AF per year—an amount that could be saved through a non-potable water conversion. This type of project is expected to be costly. As such, this plan provides a quantification of the cost savings generate by 12 AF of water savings. The most reliable indicator of municipal water value in the Severance area is the price of CBT units. WestWater estimates CBT units to be worth $58,000 per unit, which equates to $82,857 per AF using the CBT's average yield of 0.7 AF per unit. The Town uses Loup Reservoir

Company (LRC) shares for the majority of its irrigation water, making it the most likely replacement source if the Town were to install secondary systems at Rangeview Elementary School. WestWater estimates LRC shares to be worth $4,000 per AF and the Town has sufficient existing LRC water for irrigation at the sites. Given CBT and LRC's respective values, the Town would generate cost savings of approximately $1,157,000 by installing secondary systems at both facilities and reducing the volume of new CBT to be acquired.

The Slow the Flow Irrigation Audit and the Enhance Automatic Water Meter Reading Installation and Operations are WEAs considered for existing commercial customers. These WEAs are expected to generate modest savings of 0.5% and 1%, respectively, across existing commercial customers.

Assuming all new commercial properties will be constructed with dual water systems, no new commercial properties will require potable supply for outdoor use. To understand the future savings generated by this change, the Town calculated water savings generated by eliminating potable water for future commercial customers. Severance's baseline demand forecast projects 13 new commercial accounts by 2035, and a review of existing demand records allows us to calculate water savings per tap as approximately 114,800 gallons/tap per year, resulting in an annual savings of nearly 5 AF. This is presented separately from total savings as these savings are already captured in the baseline demand. Table 16 presents projected water savings for the commercial outdoor use category.

Table 16: Projected Commercial Outdoor Water Savings

Commercial Outdoor	Water Savings Annual (AF)
Non-potable Water Conversion (Rangeview Elementary School)	12.00
Slow the Flow Irrigation Audits	0.09
Enhanced Automatic Water Meter Reading Installation and Operations	0.17
Total Water Savings	12.26
Dual Water Systems (Baseline savings recognition)	4.58

5.3.5 Non-Revenue Water

The Town intends to make concerted efforts to reduce average levels of non-revenue water from 8% to 5% of total use. The Town will accomplish this through three key activities: Enhanced Water Meter Reading Installation and Operation, System Wide Water Audits, and Leak Detection and Repair Program. Table 17 estimates savings for each activity; however, in reality these activities work in conjunction to reduce water loss. The Enhanced Water Meter Reading system will provide the Town with better understanding of use within its WSA by providing data in real-time and freeing up staff time formally spent on meter reading. Periodic system wide water audits, informed by the AWWA M36 methodology, will equip the Town to identify non-revenue water within the

system and more effectively deploy resources under the Leak Detection and Repair Program to address physical losses within the system.

Table 17: Projected Non-Revenue Water Savings

Non- Revenue Water	Water Savings Annual (AF)
System Wide Water Audits	2.78
Enhanced Automatic Water Meter Reading Installation and Operations	2.78
Leak Detection and Repair Program	2.78
Total	**8.35**

5.4 Modified Water Demand Forecast

This water efficiency roadmap is expected to generate 29 AF in water savings and reduce non-revenue water to 5% of total water use. The 2035 modified demand and water efficiency targets are presented in Table 18.

Table 18: Modified Demand and Water Efficiency Targets for 2035

Demand Scenario				
	AF			
Most Probable	702	673	29	34
High Bookend	897	868		43

[12] Water Efficiency Targets are calculated as the Baseline Demand less the 29 AF in Supply Gap Reduction.

6. Implementation and Monitoring Plan

6.1 Implementation Plan

The Town of Severance plans to implement this WEP over the next 10 years, covering the period 2026-2035. The WEP will be coordinated by the Town Manager and the Deputy Town Manager. As appropriate, other Town Staff will be tapped to support implementation and monitoring of WEAs, including the Planning Director, the Public Works Director, and staff from the Water/Wastewater and Parks Division. Planning, implementation, and monitoring will be integrated into regularly scheduled staff meetings, including monthly management meetings and quarterly staff meetings.

The majority of WEAs will be implemented continuously, while a few activities will be implemented as one-off activities or periodically over the planning horizon. Among the latter activities are:

- The Rangeview Elementary conversion to a raw water supply. As this requires planning and dedicated funds, this is currently scheduled for 2028.
- System-wide Water Audits and the Leak Detection and Repair Program will be implemented simultaneously, approximately every three years.
- The Water Supply Master plan will be finalized and published in 2026. The next update will begin in 2030.
- The Town will maintain its existing Xeriscape Demonstration Gardens and install two additional gardens.

Figure 7 presents a Gantt chart detailing this implementation schedule.

Figure 7: Town of Severance Water Efficiency Implementation Plan (2026-2035)

Water Use Type		Year									
Residential Indoor	**Responsibility**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Enhanced Automatic Water Meter Reading Installation and Operations	Streets & Utilities Supervisor										
Residential Outdoor	**Responsibility**										
Slow the Flow Irrigation Audits	Parks & Stormwater Supervisor										
Garden in a Box	Parks & Stormwater Supervisor										
Enhanced Automatic Water Meter Reading Installation and Operations	Streets & Utilities Supervisor										
Commercial Outdoor	**Responsibility**										
Rangeview Elementary Conversion	Town Management										
Slow the Flow Irrigation Audits	Parks & Stormwater Supervisor										
Enhanced Automatic Water Meter Reading Installation and Operations	Streets & Utilities Supervisor										
Non- Revenue Water	**Responsibility**										
System Wide Water Audits	Parks & Stormwater Supervisor										
Enhanced Automatic Water Meter Reading Installation and Operations	Streets & Utilities Supervisor										
Leak Detection and Repair Program	Parks & Stormwater Supervisor										
Supporting and Cross-Cutting Activities	**Responsibility**										
Dual Water Systems and Greenspace Conversion	Town Management										

Water Use Type		Year									
Water Supply Master Plan	Town Management										
High-Efficiency Rebate Program and Appliance Replacement	Town Management										
Garden in a Box	Town Management										
Education Activities	Town Management										
Xeriscape Demonstration Garden	Town Management										
Watering Restrictions	Code Enforcement										
Water Waste Ordinance	Code Enforcement										
Landscape Design Ordinances and Restrictions	Town Management										

6.2 Monitoring Plan

The Town will monitor progress against the WEAs on a regular basis, incorporating the 2026 WEP as a standing agenda item in quarterly All-Staff meetings. The Town will review water use records on an annual basis beginning in 2027 after a full year of plan implementation. Continuous tracking of water use trends against the Town's water goals will help the Town determine if additional WEAs or modifications to existing WEAs are required for the Town to meet its goal by 2035. The Town's monitoring plan is presented in Table 19. The Town Manager will collect and track data at the quarterly staff meetings, and staff will discuss the water savings impacts, costs, and effectiveness of each WEA.

Table 19: Water Efficiency Plan Monitoring Program

Activity	Targeted Water Use Type	Tracking Metric	Planning Period Target
Water Efficiency Activities			
Leak Detection and Repair Program	NRW	Number of RFPs issued	5 (1x every two years), or as-needed
System Wide Water Audits	NRW	Number of revised AWWA audits incorporating meter testing results	3x over planning period
Enhanced Automatic Water Meter Reading	All	% Reduction in water use	1-2% reduction over baseline
Slow the Flow Irrigation Audits	Outdoor Res/ Com	Number of audits conducted each year	20 per year (10 in spring, 10 in fall)
Garden in a Box	Outdoor Res/ Com	Number of purchased gardens	20 per year
High-Efficiency Rebate Program	Commercial Indoor	Number of commercial toilets replaced	10
Educational Activities			
Customer Outreach and Education	All	Number of times website updated	1x per year
Xeriscape Demonstration Garden	Outdoor Res/ Com	Number of demonstration gardens installed	2
Water Supply Master Plan	All	Number of plans published	1
Regulatory Activities			
Watering Restrictions	Outdoor Res/ Com	Number of warnings and tickets issued	n/a
Water Waste Ordinance	Outdoor Res/ Com	Number of warnings and tickets issued	n/a
Landscape Design Ordinances and Restrictions	Outdoor Res/ Com	Incorporation of State-Level regulations into Municipal Code	n/a
Non-Potable Water Conversions	Outdoor Res/ Com	Number of acres converted	12
Economic Activities			
Conservation-Oriented Rate Structure	All	Rate review	1x per year

7. Public Engagement, Policy Adoption, and State Approval

7.1 Efficiency Plan Adoption

The 2026 WEP went through several rounds of review prior to submission to the CWCB. The Citizen Advisory Board was kept apprised of the plan's progress through three formal updates during its development. Staff from the Town of Severance Town Manager's Office, Planning, and Public Work Departments reviewed the plan and provided comments. The Plan was presented to the Town Board on January X, 2025, prior to publishing the plan for public review and comment. The Town Board adopted the plan on XX.

7.2 Public Review Process

Public participation is essential to the success of the Town's water efficiency efforts, as many measures and programs depend on residents to take advantage of available resources and adjust water use behaviors. The Town posted a draft of the 2026 WEP on its website on XXXX, initiating a 60-day public review and comment period that concluded on XXXX. All comments received were reviewed, and responses are posted xxx. In accordance with C.R.S. 37-60-126(5), all CWCB-approved plans must undergo a public review process of at least sixty days from the date the draft plan is released.

7.3 Efficiency Plan Approval

The Town submitted to the CWCB on XXXX, with comments addressed and reflected in this report. The CWCB notified the Town the plan was fully approved on XXX (See Appendix X).

7.4 Water Efficiency Plan Review and Update

The Town will review and update this WEP at least every seven years. The next update is expected to begin in 2035.

8. References

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