

WORK SESSION AGENDA ITEM SUMMARY

City Council



STAFF

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SUBJECT FOR DISCUSSION

2024 Water Efficiency Plan Status.

EXECUTIVE SUMMARY

The purpose of this item is to describe the state-mandated Fort Collins Utilities (Utilities) Water Efficiency Plan (WEP) and the 2024 update process. The updated WEP will set conservation goals, incorporate extensive public engagement focusing on marginalized community members, and employ numeric modeling and an equity analysis to help prioritize future water conservation and efficiency strategies. Potential strategies include education, voluntary incentives, regulations, and standards. The Agenda Item Summary also provides background on water use and Utilities' work to manage water supply and demand.

GENERAL DIRECTION SOUGHT AND SPECIFIC QUESTIONS TO BE ANSWERED

1. What is Council's vision for the Water Efficiency Plan and how it addresses water conservation and efficiency?
2. What does Council need to know from our engagement, equity, analysis, and water demand modeling efforts?

BACKGROUND / DISCUSSION

Water is an essential resource for all of us. The City of Fort Collins and Utilities have a strong commitment to ensure its efficient use. Utilities is updating its [2015 WEP](#) (Attachment 1). The updated plan will:

- meet Colorado Water Conservation Board (CWCB) requirements
- set new goals to reduce the amount we use within the Utilities water service area
- guide water use for Utilities customers and the City organization
- inform Utilities planning decisions and better use of resources

By updating our water efficiency goals and strategies, we aim to continue reducing water use in our service area to increase equitable and resilient outcomes for all community members through minimizing the

frequency and severity of water shortages and providing all customers the opportunity to participate in conservation programs.

WEP recommended strategies are expected to include a mix of education and voluntary incentives, such as rebates, and required actions which could be implemented through codes, standards, and regulations. New water conservation goals and strategies set in the WEP will focus on long-term reductions in water demand to minimize the frequency and severity of water shortages for Utilities' water customers. In contrast, short-term responses to water shortages are defined in Fort Collins City Code Section 26-167 and the City's [Water Shortage Action Plan](#)¹ (WSAP).

Alignment

The WEP aligns with the City of Fort Collins' Strategic Objective ENV 4.4, "Provide a resilient, reliable, and high-quality water supply," and the Water Utility's mission statement, "We are a One Water Utility, providing exceptional water services for our community through integrated, resilient, and equitable practices and systems." Other City and state policies and plans that align include:

- Water Supply and Demand Management Policy
- WSAP
- Our Climate Future
- City of Fort Collins 2022 Strategic Plan
- Municipal Sustainability and Adaptation Plan
- City Plan
- Colorado Water Plan

Collaboration with Other Water Providers

Certain areas within City limits are served by other neighboring utility providers. This creates complexities around project planning, coordination, and customer communications. Other water providers have their own WEPs that describe goals and strategies for their service areas; however, Utilities values these partnerships and continues to look for ways to collaborate with other providers. To-date staff have had several meetings with East Larimer County and Fort Collins-Loveland Water Districts to discuss the WEP. Staff plans for future discussion related to identifying opportunities to work together on conservation and efficiency strategies and will incorporate findings in the WEP.

WEP Update Process

The CWCB requires water providers to prepare WEPs to outline how they plan to enhance water efficiency to combat increasing competition and demand for water. Utilities received grant funding (\$160,000) from the CWCB and a one-time budget enhancement offer (2023-2024; \$145,000) to fund consultant support for numeric water demand modeling, inclusive public engagement, and an equity analysis. The Utilities' Water Conservation team (Water Conservation) began work on the WEP update in January 2023 and targets completion by late 2024.

To steer the process and selection of water conservation goals and strategies, staff developed guiding principles as a foundation for the WEP update. These are presented in Attachment 2. Building on the guiding principles, the WEP update involves the following key tasks:

¹ The WSAP establishes conditions and restrictions to manage Utilities' water use when there is a projected water shortage. Restrictions work well in infrequent and severe situations, but frequent restrictions can have short- and long-term impacts to businesses; landscapes, especially tree health; and water revenue. Available online at fcgov.com/WSAP.

- **Model water savings from conservation strategies under a range of current and potential conditions, including climate, population, and population density.**
 - Water conservation and efficiency strategies selected for evaluation will be based on community engagement and input from staff and leadership, as well as data availability and model capabilities. Staff will prioritize the strategies based on potential water savings, equity, cost, resources, and feasibility.
- **Engage with staff to identify conservation goals and strategies for how the City uses water.**
 - Follow a One Water² approach, which aims to meet both community and ecosystem needs for resilience and reliability through collaboration and integrated and equitable management of water resources.
- **Engage with the community, with an emphasis on marginalized community members.**
 - Develop relationships with engaged community members by working with four compensated Community Consultants who will connect with their networks; conduct focus groups with marginalized and/or highly impacted community members; meet with the City’s Climate Equity Committee; broadly distribute a survey designed to inform goals and strategies; and provide materials in English and Spanish.
 - OurCity (ourcity/fcgov.com/WEP) serves as the primary information source and survey hosting platform.
- **Analyze equity of both the update process and proposed conservation and efficiency strategies.**
 - Track engagement participation to determine if tactics to involve marginalized community members in the WEP update process have worked.
 - Perform gap analysis of strategies and the customer demographics that are likely to participate, to evaluate if Utilities is creating opportunities for all customers to reduce their water bills and be more resilient.
 - Develop and implement an equity evaluation of the potential outcomes of strategies so equity can be considered along with water savings potential and cost when prioritizing which strategies to implement.

Water Use and Demand Management Overview

Utilities currently provides water to approximately 32,800 residential and 2,800 commercial customer accounts. The 2022 estimated residential population served was 137,200. On average, residential customers use about 60% of the treated water delivered each year and commercial customers use about 40%. Commercial customers include large irrigation-only accounts and landscapes like those maintained by homeowner associations. Each year, indoor water use accounts for about 57% of total treated water used, while outdoor and seasonal uses are about 43% of the annual total on average. The [2022 Water Conservation Annual Report](#) (Attachment 3) summarizes current treated water demands by sector and savings from conservation programs.

Since 2000, population has grown by 16% while water use within Utilities’ water service area has decreased by 34% per capita. However, that rate of decrease slowed between years 2020-2022.

² One Water is an integrated planning and implementation approach to managing finite water resources for long-term resilience and reliability, meeting both community and ecosystem needs, as defined by the Water Research Foundation in the 2017 Blueprint for One Water. Utilities anticipates developing a One Water strategic plan by 2025.

Water Conservation staff develop and implement strategies to save water. These activities include planning, programming, and policies for indoor and outdoor water use by residential, commercial, and multi-family customers. Our current programs (residential: fcgov.com/save-water and commercial: fcgov.com/water-efficiency) largely focus on incentives and education around reducing water use at existing properties. For new construction, Water Conservation has more recently addressed developing efficiency-related development standards and codes.

The current WEP set a water conservation goal to reduce Utilities' customer use to 130 gallons per capita per day (GPCD)³ by 2030 and outlines five key areas of opportunity. Since then, staff have made significant progress within these areas, including:

- leveraging meter technology to provide customers with leak alerts and a data portal to track their use
- sending monthly water use reports to all customers
- creating more education and opportunities to reduce outdoor use with irrigation equipment rebates, at-home sprinkler checkups, and water-efficient landscape conversion education and rebates
- adding new programs and incentives for commercial customers
- permitting graywater systems and increasing indoor fixture efficiency standards

In 2022, our programs saved an estimated 173 million gallons (531 acre-feet) of water. This is about 2.5% of Utilities' total treated water demand for 2022 (6.96 billion gallons or 21,359 acre-feet) and is more than double the average annual savings from conservation programs prior to 2018. A portion of estimated annual savings will persist into future years, such as savings from efficient toilet and landscape installations. Many other strategies, such as educational campaigns, and influences, like weather, generate water savings but are challenging to quantify and not included in annual water savings totals. In both 2021 and 2022⁴, water use was 139 GPCD, 6.5% above the current WEP goal.

WEP Helps Provide a Reliable Water Supply

Utilities uses a multi-faceted approach to ensure a reliable and flexible water supply now and in the future. The WEP is one of many tools used to manage a diverse portfolio of water rights and complexity of users and water demands. Historically, during average and wet precipitation years, these water rights provide more water than customers use. During hot and dry years, current supplies may not meet demands while also maintaining a stored reserve of water for emergencies.⁵ Furthermore, we anticipate a future where climate impacts and population growth increase demands and put pressure on Utilities to restrict water use.

³ Water consumption is often characterized by daily, per person use, measured in gallons per capita per day (GPCD), and is commonly used as an industry standard for benchmarking despite calculation methods that vary. Utilities calculates GPCD by taking the total annual treated water demand (excluding large contractual customers) and dividing by the service area population.

⁴ Utilities will publish the 2023 Water Conservation Annual Report in the first quarter of 2024. Due to a 123% increase in precipitation during 2023's irrigation season (compared to 5-year average) total treated water demand was approximately 15% less than projected for the year and per capita water use for 2023 is estimated at 132 GPCD.

⁵ Section 2.1.3 of the City of Fort Collins Water Supply and Demand Management Policy states the water supply planning criteria will include a storage reserve that equates to 20% of annual demand in storage through a 1-in-50-year drought. This is meant to address emergency situations like pipeline failures or wildfire impacts. The reserve equates to about 3.7 months of average winter demand and about 1.5 months of average summer demand.

The approach and tools include:

- **Planning and modeling:** Population growth and climate trends are used to generate water demand forecasts. These demand forecasts inform the 2019 Utilities [Water Supply Vulnerability Study](#)⁶ and strategic plans such as the WEP, Water Supply and Demand Management Policy, and Water Shortage Action Plan. A new demand model is being developed as part of this WEP update.
- **Water supply storage:** Storage infrastructure is critical to reliably save and deliver water. In addition to the storage available in Joe Wright Reservoir, the 8,200 acre-feet (2.7 billion gallons) enlargement of Halligan Reservoir through the Halligan Water Supply Project is essential for Utilities to meet projected future demands without frequent water shortages and corresponding restrictions.
- **Conservation and efficiency:** A suite of strategies guided by the WEP allows us to do more with the supplies we have and, in the long-term, has the potential to minimize the frequency and severity of future water shortages and corresponding restrictions.

WEP Minimizes Future Risks

The [Water Supply Vulnerability Study](#) (see footnote 7 and City Council Work Session on 3/24/2020) identified key risks to Utilities' water resources:

- A warmer/drier climate poses the largest risk.
- Reductions in Colorado-Big Thompson supplies would have significant impacts.
- High water demands represent a significant vulnerability. It is important to implement conservation and efficiency efforts and track demand trends.
- Water storage is crucial. Without enlarging Halligan Reservoir, Utilities' current water supply planning criteria could not be met under most future climate and demand conditions. Also, water storage can help capture water saved from conservation and efficiency efforts.

The 2024 Colorado Climate Center's [Climate Change in Colorado](#)⁷ report documented a 2.3 degree Fahrenheit increase in the statewide annual average temperature from 1980-2022, and projects temperatures to rise an additional 1.0-4.0 degrees by 2050. For our region, the report notes slightly greater future warming.

The Water Supply Vulnerability Study indicates that even with storage in an enlarged Halligan Reservoir, a hotter, drier climate will require Utilities to impose water restrictions more frequently, based on projected demand for 2065 population. Historically, Utilities has imposed mandatory water restrictions at a frequency of 1-in-10 years in response to projected shortages from drought. Even if the Halligan Reservoir enlargement is completed and precipitation amounts do not change relative to today, the Water Supply Vulnerability Study projects that the need for mandatory restrictions would increase to about 3-in-10 years with a 5 degree temperature increase. Other factors such as reduced precipitation, higher than anticipated population increase or less focus on water conservation strategies would produce even greater frequency and severity of water shortages and restrictions. Implementing thoughtful and thorough water conservation and efficiency strategies can minimize the frequency and severity of water shortages and restrictions while providing all customers the opportunity to participate in conservation programs to reduce their bills and be more resilient to future shortages.

⁶ Available online at fcgov.com/utilities/img/site_specific/uploads/wsvs-final-report.pdf.

⁷ Available online at climatechange.colostate.edu.

NEXT STEPS

Anticipated next steps in February to December 2024:

- Conduct engagement
- Complete modeling
- Conduct equity analyses
- Prioritize strategies
- Q3 2024: Share results at a Council Work Session and with relevant Boards and Commissions
- Complete remaining work to finalize decisions and prepare plan
- Q4 2024: Seek Board and Commissions' recommendations and Council approval, then submit to Colorado Water Conservation Board
- 2025-2032: Implement prioritized water conservation strategies, which may include seeking additional resources including funding, training, and additional staff
- 2032: Next State required WEP update submittal

ATTACHMENTS

1. 2015 Water Efficiency Plan
2. Water Efficiency Plan Guiding Principles
3. 2022 Water Conservation Annual Report
4. Presentation