Colorado Springs Utilities
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COLORADO SPRINGS UTILITIES BOARD
MS Teams
and Blue River Board Room
Plaza of the Rockies
121 S. Tejon Street
South Tower, 5th Floor

11:30 a.m. Leadership Lunch

AGENDA
Wednesday, February 16, 2022
1:00 p.m.
Join on your computer or mobile app
Click here to join the meeting
Or call in (audio only)
+1 719-733-3651,,315595492#

1:00 p.m.	**1.**	Call to Order	Chair Wayne Williams	
1:05 p.m.	**2.**	Invocation and Pledge of Allegiance		
1:10 p.m.	**3.**	Consent Calendar	Chair Wayne Williams	

These items will be acted upon as a whole, unless a specific item is called for discussion by a Board Member or a citizen wishing to address the Utilities Board.
(Any items called up for separate consideration shall be acted upon following Compliance Reports.)

		3a. Approval of Minutes: January 19, 2022	Chair Wayne Williams	**Approval**
1:15 p.m.	**4.**	Recognition: • Behind the Scenes – Rotational Engineering Program • 2021-2022 Colorado Springs Utilities Employee Giving Campaign with Pikes Peak United Way		**Information**
1:25 p.m.	**5.**	Customer Comments	Chair Wayne Williams	**Information**
1:35 p.m.	**6.**	Compliance Reports: Risk Management (I-4)	Aram Benyamin,	**Monitoring**

		Economic Development (I-5) Community Investment (I-13) Annual Board Evaluation (C-2) E-2 CEO Responsibilities • ECA/GCA Update • Water Outlook	Chief Executive Officer	
1:55 p.m.	**7.**	Items Called Off Consent Calendar		
2:05 p.m.	**8.**	Enterprise Innovation Update	Earl Wilkinson, Chief Water, Compliance & Innovation Officer	**Discussion**
2:25 p.m.	**9.**	Demand-Side Management (DSM) Energy and Water Conservation Calculations and Verification Standards	Earl Wilkinson, Chief Water, Compliance & Innovation Officer	**Discussion**
2:45 p.m.	**10.**	Electric System – Overhead and Underground	Joe Awad, Acting System Planning and Projects Officer	**Discussion**
3:15 p.m.	**11.**	Board Member Updates	Board of Directors	**Information**
3:30 p.m.	**12.**	Adjournment	Chair Wayne Williams	

MINUTES
Colorado Springs Utilities Board Meeting
Wednesday, January 19, 2022

Utilities Board members present via Microsoft Teams or Blue River Conference Room: Chair Wayne Williams, Vice Chair Mike O'Malley, Dave Donelson, Randy Helms, Bill Murray, Richard Skorman, Yolanda Avila, Nancy Henjum and Tom Strand

Staff members present via Microsoft Teams or Blue River Conference Room: Aram Benyamin, Charles Cassidy, Travas Deal, Scott Shirola, Tristan Gearhart, Kalsoum Abbasi, Mike Hermann, and Andie Buhl

City of Colorado Springs staff members present via Microsoft Teams or Blue River Conference Room: Bethany Burgess, Jim Reid

1. **Call to Order**
   Chair Wayne Williams called the Utilities Board meeting to order at 12:03 p.m. and Ms. Andie Buhl, Utilities Board Administrator, called the roll.

2. **Invocation and Pledge of Allegiance**
   Pastor Harms delivered the invocation and Chair Williams led the Pledge of Allegiance.

3. **Consent Calendar**
   3a. Approval of Minutes: December 15, 2021
   Board Member Strand moved approval of the Consent Calendar and Board Member Henjum seconded the motion. The Consent Calendar was unanimously approved.

4. **Recognition**
   Behind the Scenes — Windstorm Restoration Services
   Mr. Aram Benyamin, Chief Executive Officer, and Chair Williams recognized Springs Utilities employees who responded to the December 2021 windstorm event and thanked supporting agencies who helped the organization. Mr. Benyamin concluded with a video of the event expressing gratitude to all parties involved.

   Chair Williams introduced Ms. Stephannie Fortune, the newly elected District 3 City Council Member.

5. **Customer Comments**
   Mr. Sam Masias expressed concerns about Springs Utilities' planning processes.

6. **Colorado Springs Utilities Windstorm Recovery Report Out**

Mr. Benyamin introduced the Windstorm Recovery Report Out agenda item and Mr. Charles Cassidy, Energy Construction Operations Maintenance General Manager, explained how safety was Springs Utilities' highest priority during the windstorm event. He said the storm was equivalent to a category two hurricane, which caused historic damage to the organization's electric system and overhead infrastructure.

Mr. Cassidy outlined and discussed the incident's timeline of events, explaining how priority of work and influencing factors were categorized throughout the entire repair process. He discussed in detail how Springs Utilities achieved full system restoration yet the community is still in a recovery phase from the event.

Mr. Cassidy compared the December 2021 windstorm to the January 2017 windstorm in Colorado Springs and concluded with a summarization of total system damages, utilized resources and estimated costs. He said an after-action report is in progress to review the windstorm and opportunities for improvement for future events.

Board members thanked Springs Utilities staff again for their hard work during the windstorm event.

Mr. Masias expressed concerns about how power outages were reported and updated online.

Ms. Theresa Gazzara, citizen, also expressed concerns about how and when Springs Utilities restored power to citizens but said Mr. Cassidy's presentation was informative and answered her questions.

Mr. Benyamin said once the windstorm after-action report is done, the Utilities Board and public will be able to review it.

7. Compliance Reports

- Infrastructure (I-6)
- Annual Board Evaluation (C-2)
    - Chair Williams said he received responses from all Board members and the discussion will be postponed to the February Utilities Board meeting.
- E-2 CEO Responsibilities
    - Water Outlook
        - Ms. Kalsoum Abbasi, Water Planning Supervisor, discussed the Water Outlook report and explained local weather conditions as of December 31, 2021. She explained visual representations of U.S. Drought Monitors in Colorado from November 23, 2021 to January 11, 2022 and snow water equivalent maps of the Arkansas River and Colorado River Basin.
        - Ms. Abbasi reviewed monthly water usage for December 2021 compared to 2001, as well as total annual water use. She said

Colorado Springs' system wide water storage is above average, and then reviewed the monthly storage percent of capacity.

Chair Williams explained that compliance reports are on the agenda by exception and asked if there were any questions. There were none.

8. **Items Called Off Consent Calendar**
   None

9. **Fuel Related Rates - Electric Cost Adjustment and Gas Cost Adjustment**
   Mr. Scott Shirola, Pricing and Rates Manager, provided an overview of this topic and explained the natural gas prices as of December 31, 2021. He said the gas market fundamentals from October 2021 are still true, but the warm weather has helped mitigate their impacts.

   Mr. Shirola explained both the electric cost adjustment (ECA) and gas cost adjustments (GCA) projections for January 2022 and the decreased amounts for residential, commercial, and industrial customers. He said sample total monthly bill calculations for current and proposed assume:
   - Residential - 30 days, 700 kWh (Electric), 60 Ccf (Natural Gas), 1,100 cf (Water Inside City Limits), and 700 cf (Wastewater Inside City Limits)
   - Commercial - 30 days, 6,000 kWh (Electric), 1,240 Ccf (Natural Gas), 3,000 cf (Water Inside City Limits), and 3,000 cf (Wastewater Inside City Limits)
   - Industrial - 30 days, 400,000 kWh and 1,000 kW (Electric), 12,400 Ccf (Natural Gas), 50,000 cf (Water Inside City Limits), and 50,000 cf (Wastewater Inside City Limits)

   Mr. Shirola discussed seasonal and residential natural gas bill impacts and explained average monthly usage. He said actual bill impacts will vary based on individual customer usage, and individualized impacts can be estimated using Springs Utilities' bill calculator. Mr. Tristan Gearhart, Chief Financial Officer, also explained how rate increases and decreases are initially communicated and projected, and how usage and volume changes are applied to monthly bills.

   The Utilities Board referred this item to City Council on January 25, 2022 as Regular Business.

10. **2022 Pikes Peak Geospatial Alliance (PPGA) Orthoimagery Project**
    Ms. Bethany Burgess, City Attorney's Office – Utilities Division, introduced and provided background information about the Pikes Peak Geospatial Alliance (PPGA) Orthoimagery Project. She said the purpose of this project is cost sharing for digital aerial photography and geo-spatial products acquired on a biennial basis. She listed current members and additional non-member participants and explained how Springs Utilities is the lead agency on this project.

Mr. Mike Hermann, Asset Management/Geospatial Technology Manager, said the goal of this project is to acquire new color digital aerial photography and secondary products for full extents of El Paso and Teller Counties. He explained the projected costs for this project, and Ms. Burgess concluded with next steps which is to bring this item to City Council on February 8, 2022 as Regular Business.

The Board agreed to change this item from Regular Business to Consent at the February 8, 2022 City Council meeting.

11. Board Member Updates

Board Members Murray and Avila left the meeting around 2:15 p.m.

Board Member Helms shared an article about nuclear energy from the Gazette and expressed his interests in the topic.

Board Member Henjum thanked all constituents who spoke during citizen comment.

Board Member Donelson thanked staff at Springs Utilities for their contribution to restoring damage from the windstorm and explained how ratepayers are the organization's primary concern.

Board Member O'Malley also thanked Springs Utilities staff for their help during the windstorm event.

Chair Williams thanked Ms. Fortune for joining the Utilities Board meeting and asked for Ms. Buhl to send a Denver Gazette article to Board Members and CEO Leadership Staff at Springs Utilities about Coloradans facing high energy bills this winter

12. Adjournment

The meeting adjourned at 2:25 p.m.

Colorado Springs Utilities
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Date: February 16, 2022

To: Utilities Board

From: Aram Benyamin, Chief Executive Officer

Subject: **Rotational Engineering Program**

Desired Action: Information

Previous Board Communications/Discussion: N/A

Executive Summary: This month's Behind the Scenes spotlight focuses on the new Rotational Engineering Program.

The Rotational Engineering Program is designed to develop a pipeline of qualified engineers to fill the labor needs of our operations and to proactively address the anticipated lack of engineering talent availability. By hiring entry level engineers and taking them through a rotational training program, we are growing our internal engineering talent needed to sustain the vision of Colorado Springs Utilities.

The Rotational Engineering Program is an 18-month program with two key phases. The first phase is a 15-week introduction to the business and operations fundamentals of Colorado Springs Utilities. This foundational curriculum provides exposure to the business aspects of the organization, as well as to the engineering and operations of all four services.

The second phase of the program is 14-months of in-depth training and hands-on experience aligned with the engineers' degree discipline. The engineers will gain valuable experience and build a foundation of technical knowledge from a wide variety of engineering work areas.

On January 24, 2022, Daniel Kelly, Joseph Wintergerst, and Steven Yeager, all mechanical engineering graduates of UCCS, started with Colorado Springs Utilities as the first cohort of Rotational Engineers. We are excited to launch this key engineering workforce development program.

Colorado Springs Utilities
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Date: February 16, 2022

To: Utilities Board

From: Aram Benyamin, Chief Executive Officer

Subject: **2021-2022 Colorado Springs Utilities Employee Giving Campaign with Pikes Peak United Way**

Desired Action: Information

Recognition of the Colorado Springs Utilities 2021-2022 Employee Giving Campaign conducted annually in partnership with Pikes Peak United Way (PPUW).

Each year, Colorado Springs Utilities employees demonstrate their commitment to be a treasured community partner by investing in the community and participating in the Annual Employee Giving Campaign.

In addition to donating thousands of hours of volunteer service annually through the Community Focus Fund and the Ambassador Programs, our employees are given the opportunity to donate financially to charitable organizations through the Employee Giving Campaign, conducted in partnership with Pikes Peak United Way (PPUW). The Campaign allows employees to donate to the non-profit organizations of their choice.

During the 2022 Employee Giving Campaign, conducted in October-November 2021, 170 employees generously gave or pledged a total of $81,205.00, of which $36,636.00 went to Project COPE and will be doubled by a matching grant from Colorado Springs Utilities. $42,569.00 went to PPUW partner and non-partner agencies, which will make a significant positive impact on our community.

At the February 16, 2022 Utilities Board meeting, Earl Wilkinson, will present Colorado Springs Utilities Board Chair Williams and representatives from Pikes Peak United Way, with a ceremonial check in recognition of the donations given by Colorado Springs Utilities employees during the 2021-2022 Employee Giving Campaign.

Colorado Springs Utilities
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Date: February 16, 2022

To: Utilities Board

From: Aram Benyamin, Chief Executive Officer

Subject: **Excellence in Governance Monitoring Report**
Risk Management (I-4)

Desired Action: Monitoring

Compliance: The CEO reports compliance with the instructions.

INSTRUCTIONS			
Category:	**Utilities Board Instructions to the Chief Executive Officer**	Reporting Timeframe:	**July 1, 2021 - December 31, 2021**
Policy Title (Number):	**Risk Management (I-4)**	Reviewing Committee:	**Finance**
Monitoring Type:	**Internal, External, City Auditor**	Monitoring Frequency:	**Semi-Annual, Annual, Years ending in 0 and 5**

The Chief Executive Officer shall direct that the enterprise maintains enterprise risk management activities that identify, assess and prudently manage a variety of risks including strategic, financial, operational, legal and hazard. Accordingly, the CEO shall:

1. Maintain a Risk Management Committee to identify, measure, monitor, manage and report risk on an enterprise-wide basis.

A Risk Management Committee (RMC) was maintained with a structure and procedures specified in the Enterprise Risk Management (ERM) Plan. RMC meetings were restructured to capture a top-down approach to risk management. Elements at each scheduled RMC meeting included:

- Enterprise risk tracking tool– A tracking tool is used to identify, measure, monitor, and report on risks. This tracking tool incorporates elements of the Financial Risk Report, which monitors energy and interest rate market risks and various financial risks.
- Special topic review – reporting of current projects and their efforts to manage and/or mitigate identified risks and special topics.

2. Operate under and maintain a written Enterprise Risk Management (ERM) Plan and its required plans listed below that each include management level approval, detailed procedures, internal controls and reporting requirements, and external audits.

The Enterprise Risk Management (ERM) Plan was maintained and is currently under review. Due to the continuous evaluation of business needs of Colorado Springs Utilities, the ERM Plan is being revised to better align with the risks the organization is, and will be, facing. Due to changes in executive leadership of the organization in 2021, additional time to review and align the to the ERM to strategic objectives will occur in 2022.

While in review status, the current ERM Plan ensured risks were identified, measured, monitored, managed, and reported for each of the five risk categories.

A. Energy Risk Management Plan - establishes procedures for limiting organizational exposure to price volatility and supports the acquisition or sale of energy that does not unreasonably jeopardize the ability to meet customer needs.

The Energy Risk Management Plan was moved into draft status late in the second quarter of 2021 as part of this plan's approval cycle. This plan was approved by the RMC in the third quarter of 2021. This Plan reports energy related commodity risks to operational groups and executive management. Additionally, the plan's processes and controls were in place for trade and settlement activities associated with transactions in these commodity markets.

B. Investment Plan - establishes investment scope, objectives, delegation of authority, standards of prudence, eligible investments and transactions, risk tolerance and safekeeping and custodial procedures for the investment of all funds.

The Investment Plan was maintained and remained current. Compliance was met by the handling of cash management investments with clear delegation of authorities as defined by the Plan and adherence to Colorado state law regarding municipal investments.

C. Financial Risk Management Plan - establishes objectives and procedures for minimizing risk to support responsible compliance.

The Financial Risk Management Plan was maintained and remained current. Compliance was met by monitoring, managing, and reporting of the portfolio of financial derivatives and associated counterparties and the enterprise exposure to interest rate risk. During the second half of 2021, Colorado Springs Utilities did not enter into any financial market transactions which are governed by the Plan.

Colorado Springs Utilities
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Date: February 16, 2022

To: Utilities Board

From: Aram Benyamin, Chief Executive Officer

Subject: **Excellence in Governance Compliance Report**
Economic Development (I-5)

Desired Action: Monitoring

Compliance: The CEO reports compliance with the instructions.

INSTRUCTIONS			
Category:	**Utilities Board Instructions to the Chief Executive Officer**	Reporting Timeframe:	**January 1, 2021 – December 31, 2022**
Policy Title (Number):	**Economic Development (I-5)**	Reviewing Committees:	**Strategic Planning Finance**
Monitoring Type:	**Internal**	Monitoring Frequency:	**Annual**

The Chief Executive Officer shall direct that the enterprise's obligation to serve responsibilities are the primary method to support economic development but may also use other approved methods of support. Accordingly, the CEO shall:

1. *Offer economic development incentives, special rates or terms and conditions for utility services and alternative development solutions when they are defined within Utilities Rules and Regulations, Tariffs and City Code and approved by the City Auditor.*

   In 2021, all prospecting and business expansion and retention efforts aligned with existing Tariffs and Utilities Rules and Regulations. Colorado Springs Utilities executed one special contract in support of economic development projects as outlined in the Utilities Rules and Regulations, Application and Contract for Services. As required, written documentation demonstrating compliance with tariff provisions were provided to the City Auditor for review and approval and the City Attorney signed the contract.

2. *Consider economic development support that:*

   A. *Optimizes existing utility infrastructure.*
   B. *Grows the customer base.*
   C. *Assures a neutral or positive impact to citizens.*
   D. *Partners with local entities.*

   In 2021, Colorado Springs Utilities worked closely with the Colorado Springs Chamber and EDC and the Municipal Government to provide utility assessments and solutions for 49 potential new businesses interested in locating in Colorado Springs, and 10 existing business expansions and retentions. Through the year, Colorado Springs Utilities was involved with 20 business retention and expansion meetings, establishing five certified sites, and supporting businesses through COVID-19 restrictions.

3. *Create a business-friendly culture by eliminating operational policies and standards that no longer provide value and by proactively communicating the rationale behind current operational policies.*

   - In 2021, Colorado Springs Utilities worked closely with the Colorado Springs Chamber and EDC, City Economic Development, Downtown Partnership, Small Business Development Center and other economic development community partners to evaluate customer feedback regarding utility barriers to development.

   - Colorado Springs Utilities staff participated on the City Agencies for Small Business Advancement team to proactively assist and provide solutions to small businesses, thereby shaping how businesses navigate the various processes while reinforcing the narrative that our city agencies are committed to supporting businesses.

   - Colorado Springs Utilities staff proactively shared information with community partners so they can serve as our ambassadors and assist developers and customers in navigating the Springs Utilities development process.

   - Colorado Springs Utilities staff participated in forums and served on panels aimed at educating existing and prospective customers and community partners and clarifying the rationale behind Springs Utilities policies and standards. Examples include quarterly COSOpenforBiz Workshops in collaboration with the Pikes Peak Small Business Development Center and Pikes Peak Region COVID-19 Relief and Recovery Efforts.

Colorado Springs Utilities
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Date: February 16, 2022

To: Utilities Board

From: Aram Benyamin, Chief Executive Officer

Subject: **Excellence in Governance Monitoring Report**
Community Investment (I-13)

Desired Action: Monitoring

Compliance: The CEO reports compliance with the instructions.

INSTRUCTIONS			
Category:	**Utilities Board Instructions to the Chief Executive Officer**	Reporting Timeframe:	**January 1, 2021 – December 31, 2021**
Policy Title (Number):	**Community Investment (I-13)**	Reviewing Committees:	**Strategic Planning; Finance**
Monitoring Type:	**Internal**	Monitoring Frequency:	**Annual**
Guidelines:	**Affordable Housing (G-10)** **Community Support (G-11)**		

The Chief Executive Officer shall direct that Colorado Springs Utilities is responsive to community needs and values by maintaining and communicating a strong community presence that significantly contributes to the citizens' quality of life. Accordingly, the CEO shall:

1. *Maintain a community involvement plan that is in alignment with Colorado Springs Utilities' strategic objectives and that provides a benefit to the citizens and customers.*

   Colorado Springs Utilities developed and implemented a 2021 community involvement strategy aligned with the Colorado Springs Utilities Strategic Plan and Utilities Board Policies. The plan is managed by the Community Relations Section of the Public Affairs Department.

2. *Encourage and support employee volunteerism within the communities served by Colorado Springs Utilities.*

   The CEO and his executive team supported volunteerism through personal participation and active recognition of volunteers in 2021. Total volunteerism through the Community Focus Fund and Ambassador volunteer programs was 11,546.50 hours providing a value to the community equivalent to $349,974.41 worth of volunteer labor (based on the Independent Sector's most recent published average hourly wage in Colorado of $30.31).

3. *Communicate to customers and provide student and adult education programs on the safe and efficient use of utility services.*

   With COVID restrictions still in place during 1st and 2nd quarter, staff presented 38 digital remote electric safety demonstrations and 10 natural gas safety demonstrations to almost 2000 students and adults. Safety educators attended seven school and STEM events, communicating messages to customers about the safe and efficient use of utility services. Colorado Springs Utilities safety experts conducted seven in-person Damage Prevention Workshops and 22 safety tailgate sessions for professional construction workers and excavators. Two training videos were created in cooperation with the Colorado Springs Fire Department (CSFD) on solar array and residential solar safety and fire response. Three training sessions were conducted with CSFD Trainees and two field trainings on natural gas emergencies were hosted by Springs Utilities personnel. In addition, the 12 fire departments in our utilities service territory received liaison "Meet and Greet" sessions with natural gas, electric and field services experts to discuss Colorado Springs Utilities equipment and emergency response. A total of 31 meetings were conducted with almost 500 first responders trained. City Communications and Dispatch also received emergency response training in electric, natural gas and field services topics.

   Four service community education programs to convey the value of our services and promote efficiency included 9,143 connections with customers through three community event booths, 49 tours of the Direct Potable Reuse special project, 16 adult stakeholder presentations and 125 student water and energy programs. 713 student efficiency kits were distributed with verified measurable savings of 2.3 million gallons of water, 16,433 KW of electricity and 14,958 CCF of natural gas annually based on efficiency items installed.

4. *Allow philanthropic support of community-oriented organizations only in the service territories or localities impacted by Colorado Springs Utilities' operations.*

All organizations that received philanthropic support in 2021 were in the Colorado Springs Utilities service territory or localities impacted by Colorado Springs Utilities' operations.

5. *Only allow funding of community-oriented organizations that complete an application describing how the funds will be used in alignment with Colorado Springs Utilities' strategic objectives.*

   All organizations that received Community Focus Fund (CFF) financial support in 2021 completed an application which included a description of how the funds would be used. Funding decisions were based on requested project alignment with Colorado Springs Utilities' strategic objectives.

   In compliance with Community Support Guideline (G-11.1), the total 2021 direct monetary support of community-oriented economic development and charitable organizations of $888,000 was less than .1 percent of the budgeted operating revenues of $892,477,000 (.09 percent). The Community Focus Fund granted $256,000 to local charitable organizations for affordable housing, transitional housing or shelter facilities' utilities-centric projects and programs (G-11.2) and investment in local business association memberships was $32,000. Economic development partner funding totaled $600,000. In 2021, $100,000 was invested in the Exponential Impact Survive and Thrive Loan Fund and the Pikes Peak Small Business Development Office received $30,000. The economic development partnership with the Colorado Springs Chamber and EDC was $270,000. Other recipients that support economic vitality included: Working Fusion at Mill Street, Exponential Impact Technology Accelerator Program and the Downtown Partnership each received $50,000; Pikes Peak United Way Family Success Center and Crossfire Ministries received $25,000 each.

6. *Allow funding of community-oriented organizations with Political Action Committees (PACs) only if they demonstrate independent PAC revenue and decision-making.*

   Colorado Springs Utilities contributed economic development partner funding to the Colorado Springs Chamber and EDC which operates a Political Action Committee. The Chamber and EDC successfully demonstrated independent PAC revenue and decision-making as outlined in their annual impact report to Colorado Springs Utilities. No other organizations with PACs received funding in 2020.

7. *Consider partnerships with other funding entities to leverage resources and maximize impact.*

   In all instances, Colorado Springs Utilities joined other funders in providing financial support to community organizations.

In compliance with Community Support Guideline (G-11.3), Colorado Springs Utilities provided $500,000 to match employee, customer, and business donations to Project COPE in 2021. These funds were directed to the Colorado Springs Utilities Foundation to assist 1,774 households in paying their utilities bills

8. *Inform the community of the enterprise's corporate citizenship and employee volunteerism.*

   Throughout the year, Colorado Springs Utilities publicized efforts of our employees and their families to give back to the community we serve. We accomplished this using internal and external communication channels, including social media, website, newsletters, news media and the annual report.

9. *Develop programs intended to support affordable housing within the City.*

   In compliance with Affordable Housing Guideline (G-10.1), the affordable housing deferral program allows deferral of the immediate impact of water and wastewater development charges for qualifying projects that meet specified energy and water conservation criteria.

   The following table summarizes information for the program year 2021.

AFFORDABLE HOUSING DEFERRAL PROGRAM	
	2021 Program Year
2020 Water and Wastewater Development Charges	$35,703,236
2021 Deferral Cap (5% of 2020 Development Charges)	$1,785,162
2021 Water Development Charges Deferred	$27,555
2021 Wastewater Development Charges Deferred	$7,472
Deferral Projects in 2021	4
Total Project Participation in Deferral Program since 2003	98
Total Deferred Charges since 2003	$2,912,150
Outstanding Balance of Deferred Charges	$597,575

Colorado Springs Utilities offers programs for customers who have an annual household gross income at or below 200 percent of Federal Poverty Guidelines:

- **Home Efficiency Assistance Program (HEAP):** HEAP is a Springs Utilities assistance program helping low-income customers make energy and water efficiency improvements to reduce utility bills in partnership with the Energy Resource Center (ERC). HEAP provides free audits and retrofits for energy and water efficiency home improvements to qualifying Springs Utilities customers. In 2018, the Utilities Board approved the Affordable Housing Guideline (G-10.2) directing 10 percent of the total Energy Demand Side Management (DSR) budget to support the HEAP program.

  In 2021, the program helped 219 customers with energy and water retrofits, reducing energy by an estimated 6,192MBtu and water use by 1.1 million gallons or 3.16 acre-feet.

- **Home Efficiency Low-Income Program (HELP):** HELP is a Springs Utilities energy and water efficiency kit program. Kits are delivered to community members in low-income areas of town with typically older, inefficient homes, and distributed at targeted low-income community events. Each kit includes home savings devices for community members to install along with instruction guides.

  In 2021, staff attended 10 community events to distribute kits, in addition to those provided to community organizations. In total 2,091 kits were provided to customers, enabling the water and energy benefits from 4,182 WaterSense showerheads; 2,091 WaterSense kitchen aerators; 4,182 WaterSense bath aerators; and 8,364 Energy Star LED light bulbs.

- **Electric-Efficiency Product Promotion and COPE partnerships:** Springs Utilities promotes efficient electric products to help low-income customers conserve energy and reduce their monthly electricity costs. Springs Utilities distributed 3,703 indoor Energy Star qualified high efficiency LED light bulbs, 360 LED Holiday light strings, 711 showerheads and 461 aerators free of charge to the following partners: Sliver Key, Partners in Housing, Family Promise, Springs Rescue Mission, Ronald McDonald House, Greccio and many others.

- **Low Income Toilet Retrofit Program:** To help low-income customers conserve water and reduce their monthly water and wastewater bills, 179 high efficiency WaterSense-certified toilets were distributed to non-profit low-income housing providers to replace inefficient fixtures in their housing units. In addition, 131 more high efficiency toilets were installed in low-income renter households.

Colorado Springs Utilities
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Date: February 16, 2022

To: Utilities Board

From: Aram Benyamin, Chief Executive Officer

Subject: **Excellence in Governance Compliance Report**
Utilities Board Annual Evaluation (C-2)

Desired Action: Monitoring

Compliance: The CEO reports compliance with the instructions.

INSTRUCTIONS			
Category:	**Utilities Board Commitments to Excellence Governance**	Reporting Timeframe:	**January 1, 2021 – December 31, 2021**
Policy Title (Number):	**Utilities Board Annual Evaluation (C-2)**	Reviewing Committee:	**Strategic Planning**
Monitoring Type:	**Internal**		
Monitoring Frequency:	**Annual**		
Guidelines:	**Utilities Board Annual Evaluation (G-1)**		

The Chief Executive Officer shall ensure that an annual Utilities Board Evaluation occurs in accordance with policy C-2:

The Utilities Board establishes governance performance metrics to evaluate the Board's performance and to initiate improvement opportunities annually.

G-1 Guideline: Utilities Board Evaluation

1. *Annually, Utilities Board members evaluate the work of the Board and provide feedback to the Utilities Board Chair.*
2. *The approved evaluation feedback form includes accomplishments, plans for improvement and comments on what to start, what to stop, what should continue, and lessons learned.*

Policy C-2 and G-1 Guideline Compliance Response

- Per policy and guideline, the Utilities Board is performing a self-evaluation during the month of January. An evaluation form has been provided to each Board member for completion.
- Evaluation results will be provided at the February 16, 2022 Board Meeting.

Colorado Springs Utilities
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Date: February 16, 2022

To: Utilities Board

From: Aram Benyamin, Chief Executive Officer

Subject: **Excellence in Governance Monitoring Report**
Utilities Board/Chief Executive Officer Partnership Expectations (E-2)

Desired Action: Monitoring

EXPECTATIONS	
Category:	**Utilities Board/Chief Executive Officer Partnership Expectations**
Policy Number:	**E: 2 (Chief Executive Officer Responsibilities)**

The Utilities Board and the Chief Executive Officer work in partnership to achieve excellence in governance and operations to attain long-term organizational success and sustainability.

February 2022 Water Outlook using data as of January 31, 2022

Locally, temperatures were above average, and precipitation was below average in January. Demands were less than last year at this time.

2022 Demands: January use averaged 40.5 million gallons per day (MGD), which was about 3.3 percent less than last January. Temperatures in January were above the thirty-year average at 34.1 degrees Fahrenheit, which was 2.2 degrees above normal. Total precipitation for January was 0.22 inches, which was 76 percent of normal.

Current Reservoir Levels: Local storage is currently at about 42,900 acre-feet (65 percent of capacity). The 1991-2020 average is 68 percent of capacity. Rampart Reservoir is at 69 percent of capacity, and Pikes Peak storage is at 59 percent of capacity. System wide, total storage is about 187,200 acre-feet (72 percent of capacity). Last year at this time, total system wide storage was71 percent of capacity. It was about 80 percent at this same time in 2020, about 73 percent of capacity in 2019, about 83 percent of capacity in 2018, about 78 percent of capacity in 2017, about 80 percent of capacity in 2016, about 78 percent of capacity in 2015, about 56 percent of capacity in 2014, and about 48 percent in 2013. The 1991-2020 average system wide storage for the end of January is 73 percent of capacity.

Water Supply Outlook: Drought conditions have held steady in eastern Colorado, with slight improvement in western Colorado from winter snowfall. The 12-week Evaporative Drought Demand Index (EDDI) shows a dry evaporative demand across Colorado; persistence of this signal into spring and summer could predict deepening drought.

The three-month climate outlook predicts higher chances of above-average temperatures across and higher chances of below-average precipitation across Colorado. Snowpack is generally above average across western Colorado and below average in the Rio Grande and Arkansas River Basins. Water Conveyance will begin yield forecasting later this month. We continue to monitor snowpack, demand and storage to maximize available water supply.

Operational Notes: Total system storage is at 72 percent of capacity and holds about 2.7 years of demand, which is slightly below average for the end of January. Local storage contains about 216 days of demand.

Electric Cost Adjustment (ECA)

On March 23, 2021, City Council approved the ECA rate of $0.0294 per kWh effective April 1, 2021. This adjustment was prepared to recover cost associated with the February severe weather event over 13 months (through April 2022) and was not consistent with Cost Adjustment Guidelines. Additional adjustments approved by City Council were an ECA rate of $0.0474 per kWh effective November 1, 2021 and an ECA rate of $0.0364 per kWh effective February 1, 2022. As of January 31, 2022, the ECA under collection balance was $20.5 million. The under-collection balance changed by $5.7 million from the $26.2 million under collection balance reported last month. Colorado Springs Utilities continues to provide regular updates to the Utilities Board and will propose adjustments as appropriate.

Gas Cost Adjustment (GCA)

On March 9, 2021, City Council approved the GCA rate of $0.5477 per Ccf effective March 11, 2021. This adjustment was prepared to recover cost associated with the February severe weather event over 14 months (through April 2022) and was not consistent with Cost Adjustment Guidelines. Additional adjustments approved by City Council were a GCA rate of $0.8130 per Ccf effective November 1, 2021 and a GCA rate of $0.6928 per Ccf effective February 1, 2022. As of January 31, 2022, the GCA under collection balance was $37.4 million. The under-collection balance changed by $17.8 million from the $55.2 million under collection balance reported last month. Colorado Springs Utilities continues to provide regular updates to the Utilities Board and will propose adjustments as appropriate.

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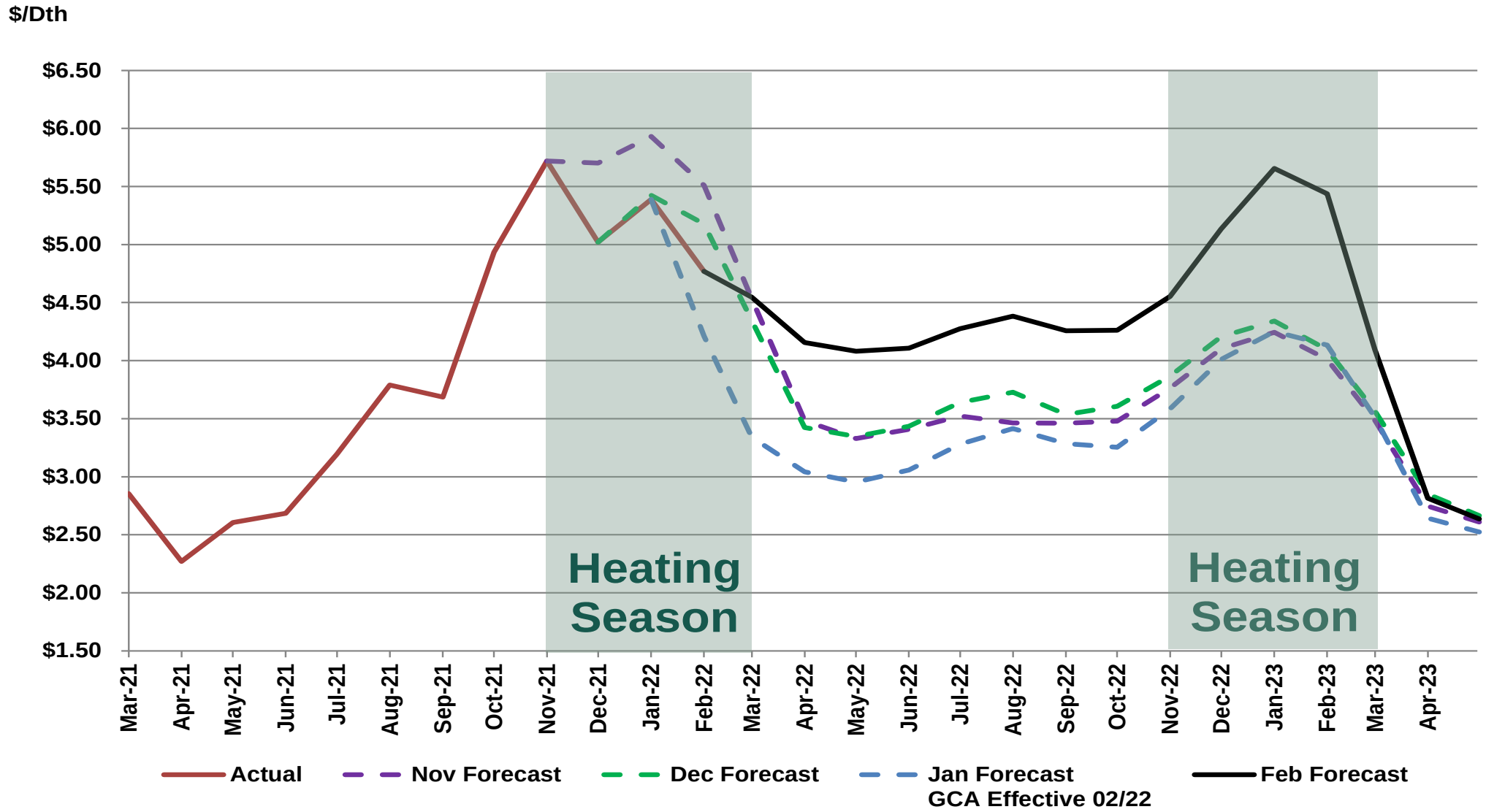
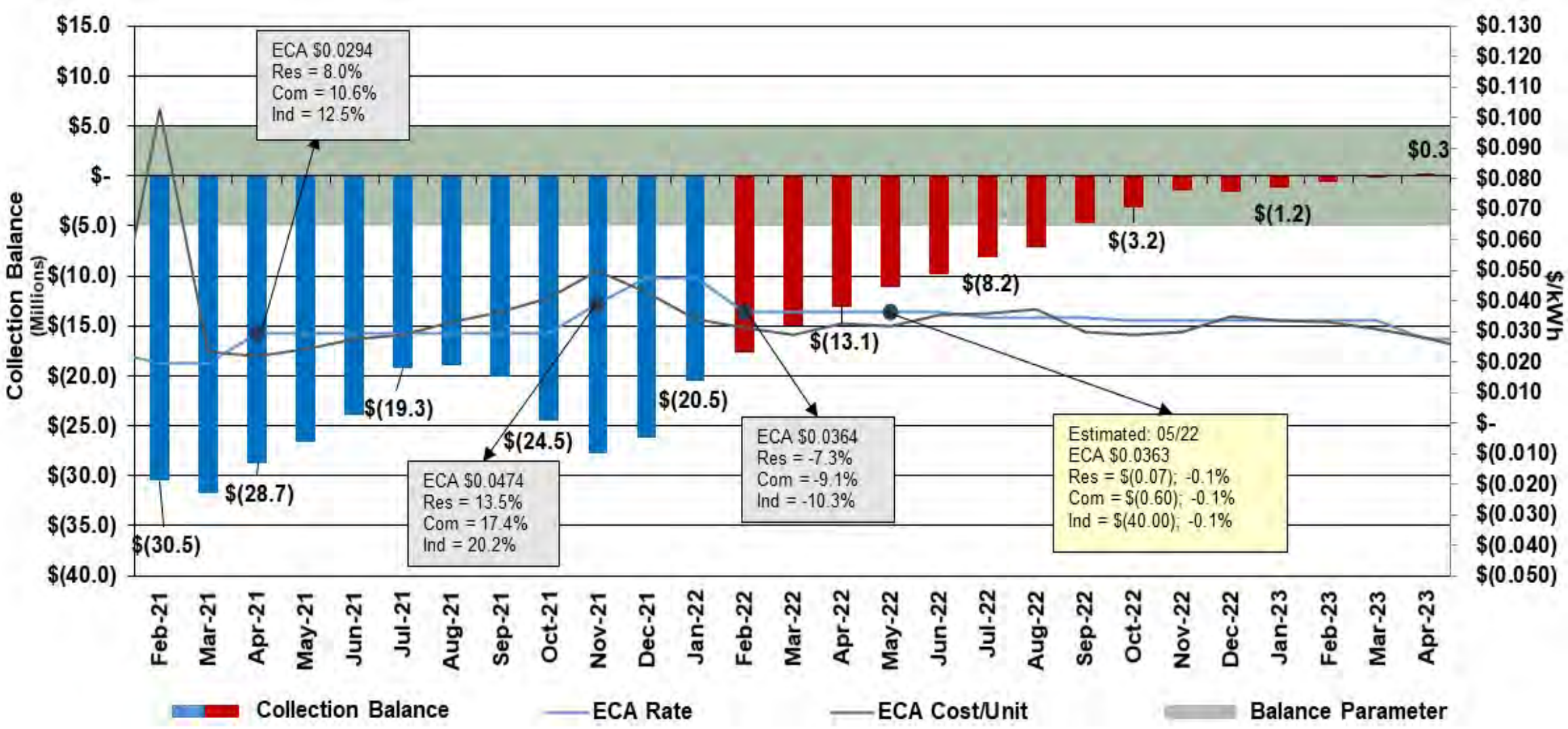
Electric Cost Adjustment
Gas Cost Adjustment

February 16, 2022

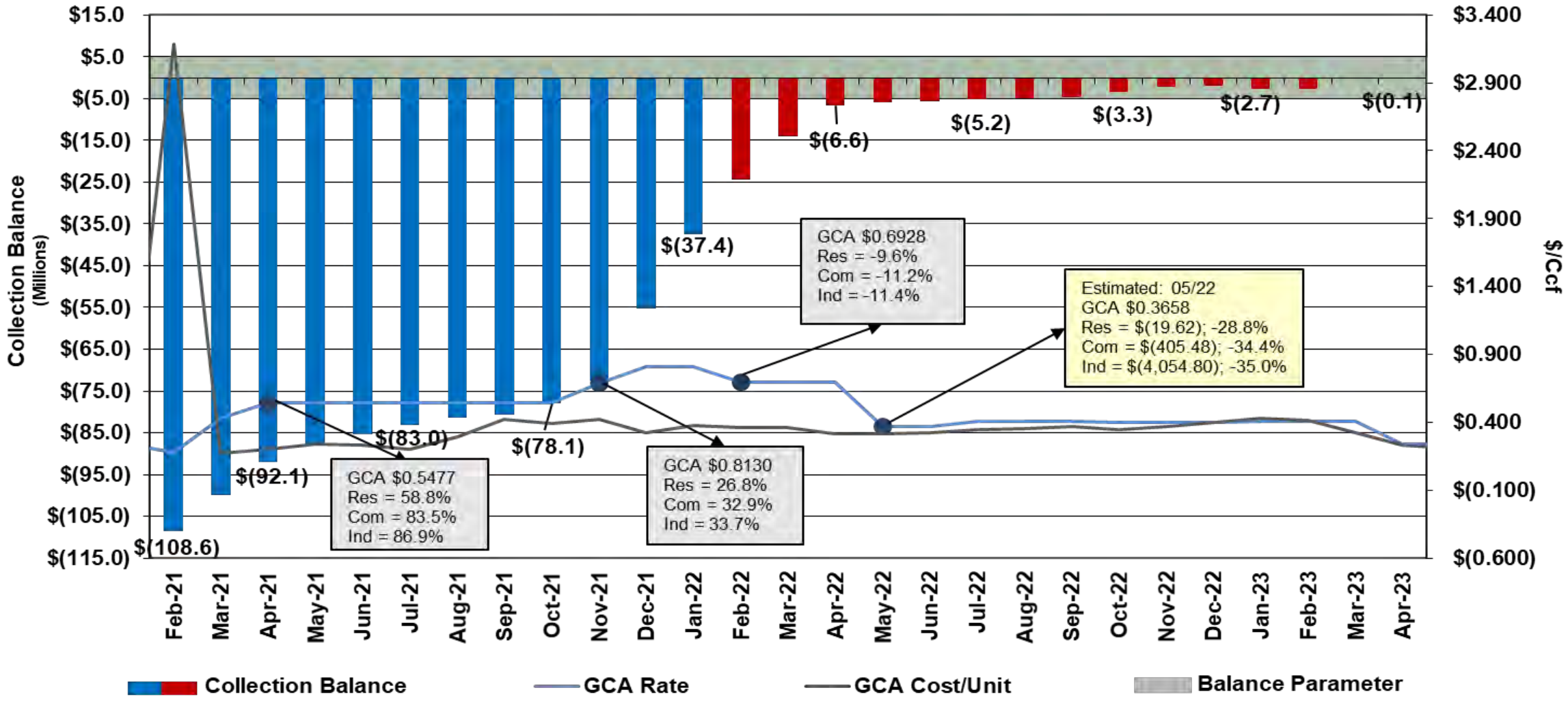
Natural Gas Prices as of February 1, 2022



ECA Projections February 2022



GCA Projections February 2022

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Water Outlook

Kalsoum Abbasi, P.E.

Planning Supervisor, Water Conveyance

February 1, 2022

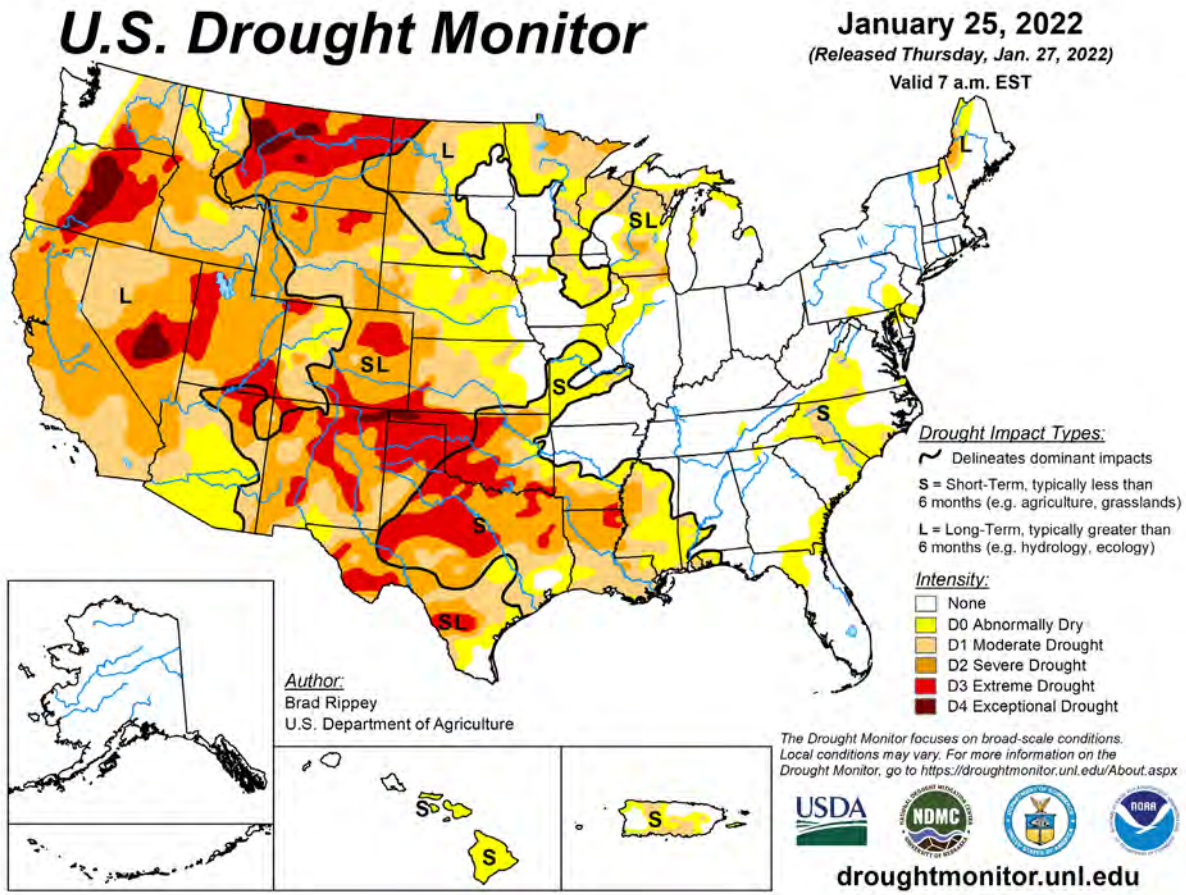
Local Weather Conditions as of January 31, 2022

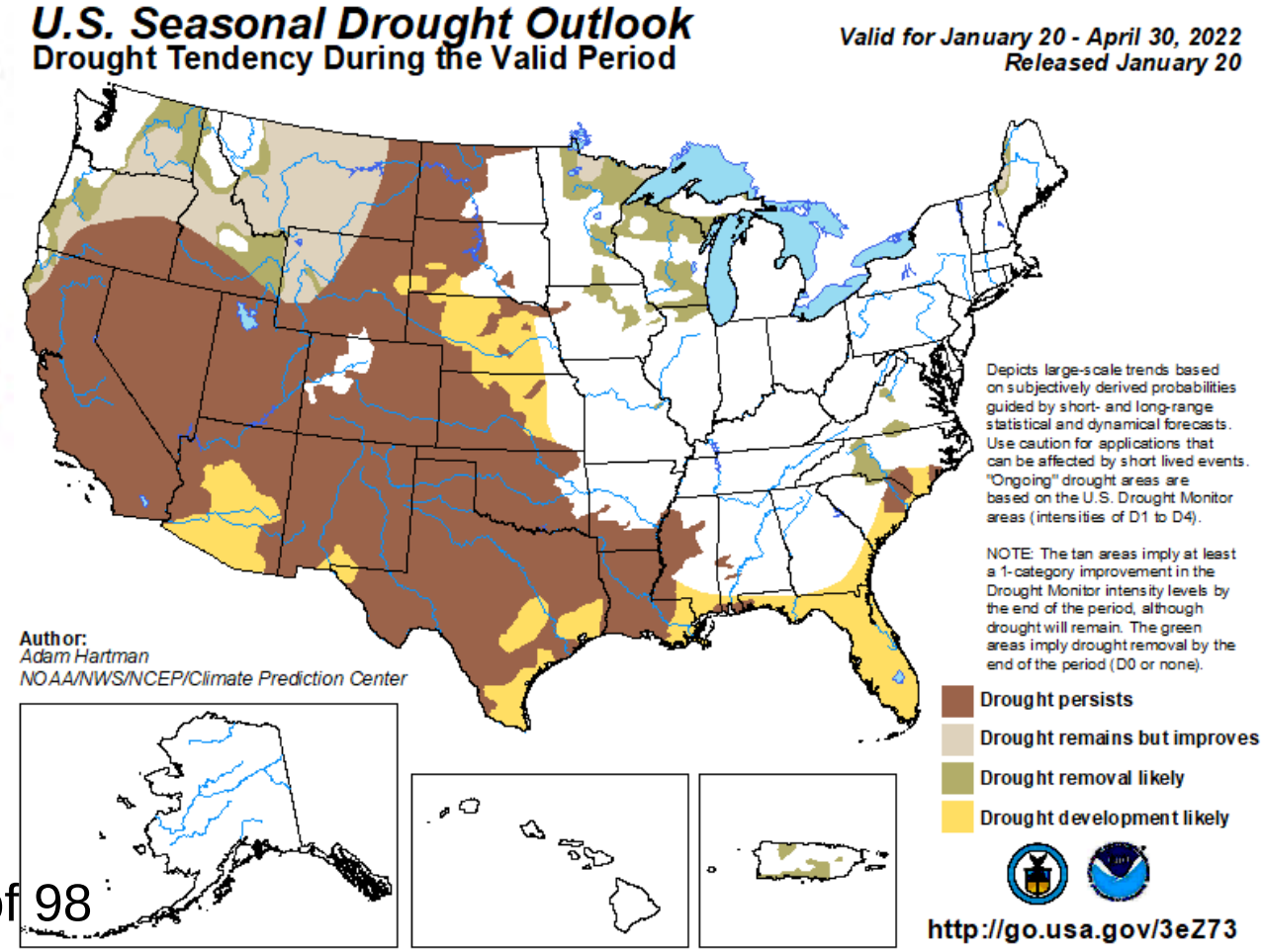
Precipitation (Inches of Moisture)

- January 2022 – 0.22 in. (76% of normal)
- 2022 YTD Total – 0.22 in. (76% of normal)

Average Temperature (Degrees F)

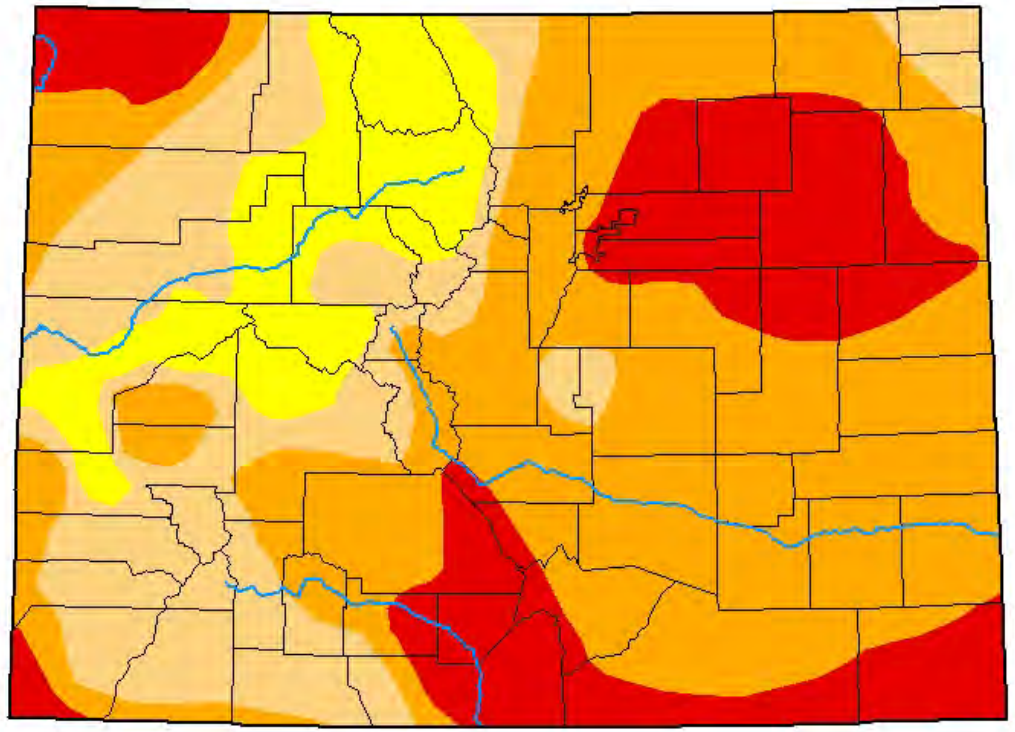
- January 2022 – 34.1 Deg. (2.2 deg. above normal)
- 2022 YTD Average – 34.1 Deg. (2.2 deg. above normal)


U.S. Drought Monitor
January 25, 2022
(Released Thursday, Jan. 27, 2022)
Valid 7 a.m. EST
Drought Impact Types:
Delineates dominant impacts
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)
Intensity:
None
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought
Author:
Brad Rippey
U.S. Department of Agriculture
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx
droughtmonitor.unl.edu


U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid for January 20 - April 30, 2022
Released January 20
Author:
Adam Hartman
NOAA/NWS/NCEP/Climate Prediction Center
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).
Drought persists
Drought remains but improves
Drought removal likely
Drought development likely
http://go.usa.gov/3eZ73

U.S. Drought Monitor
Colorado

January 25, 2022
(Released Thursday, Jan. 27, 2022)
Valid 7 a.m. EST



Intensity:

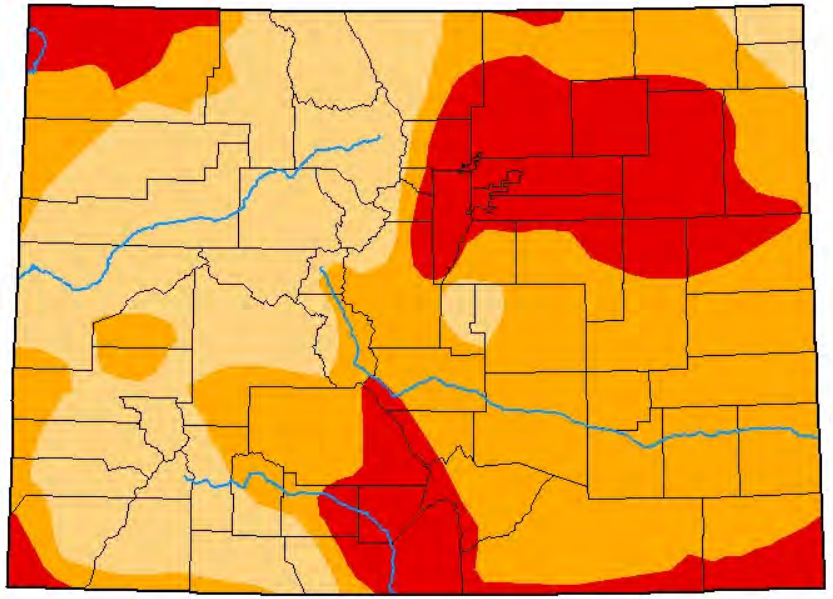
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

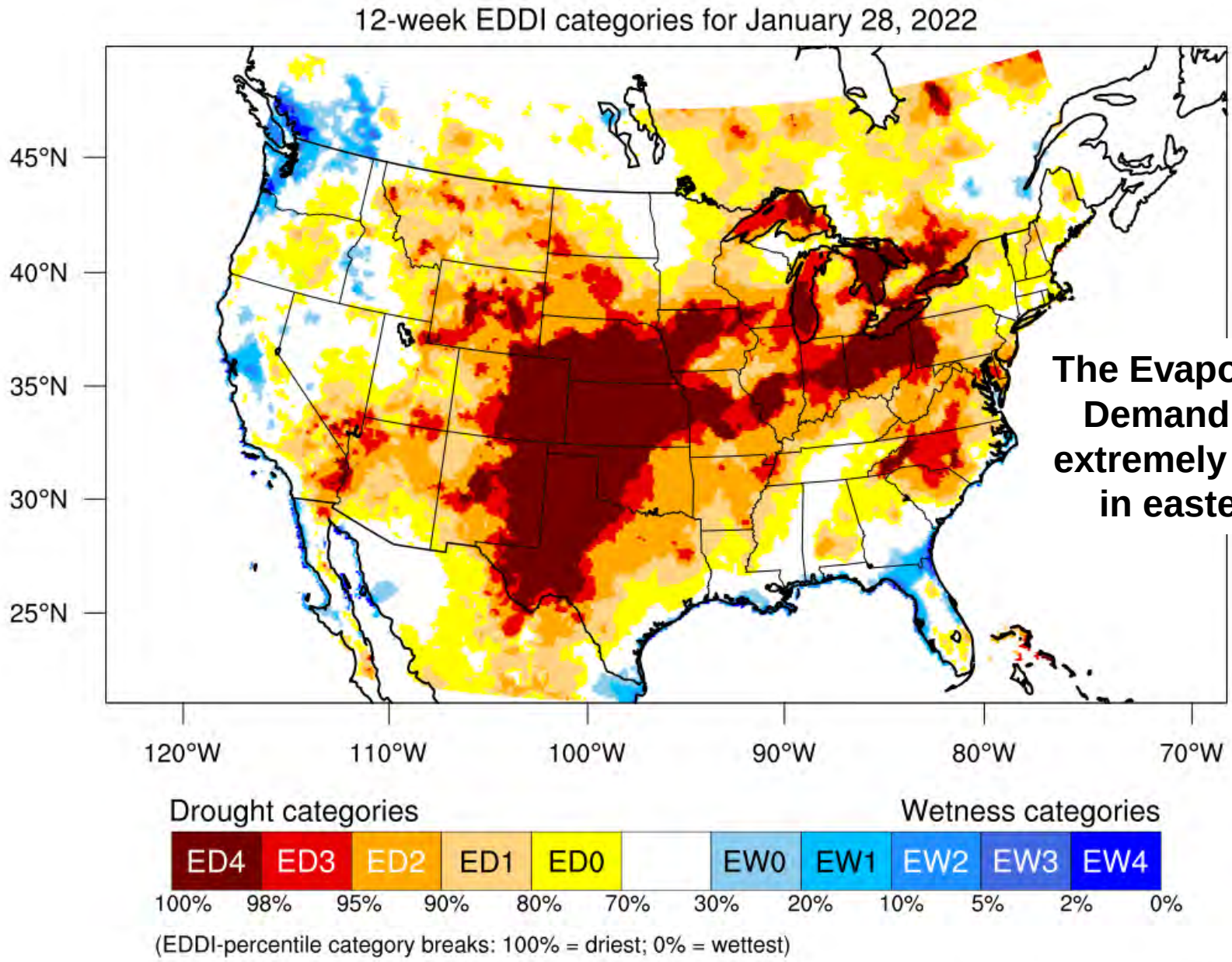
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:

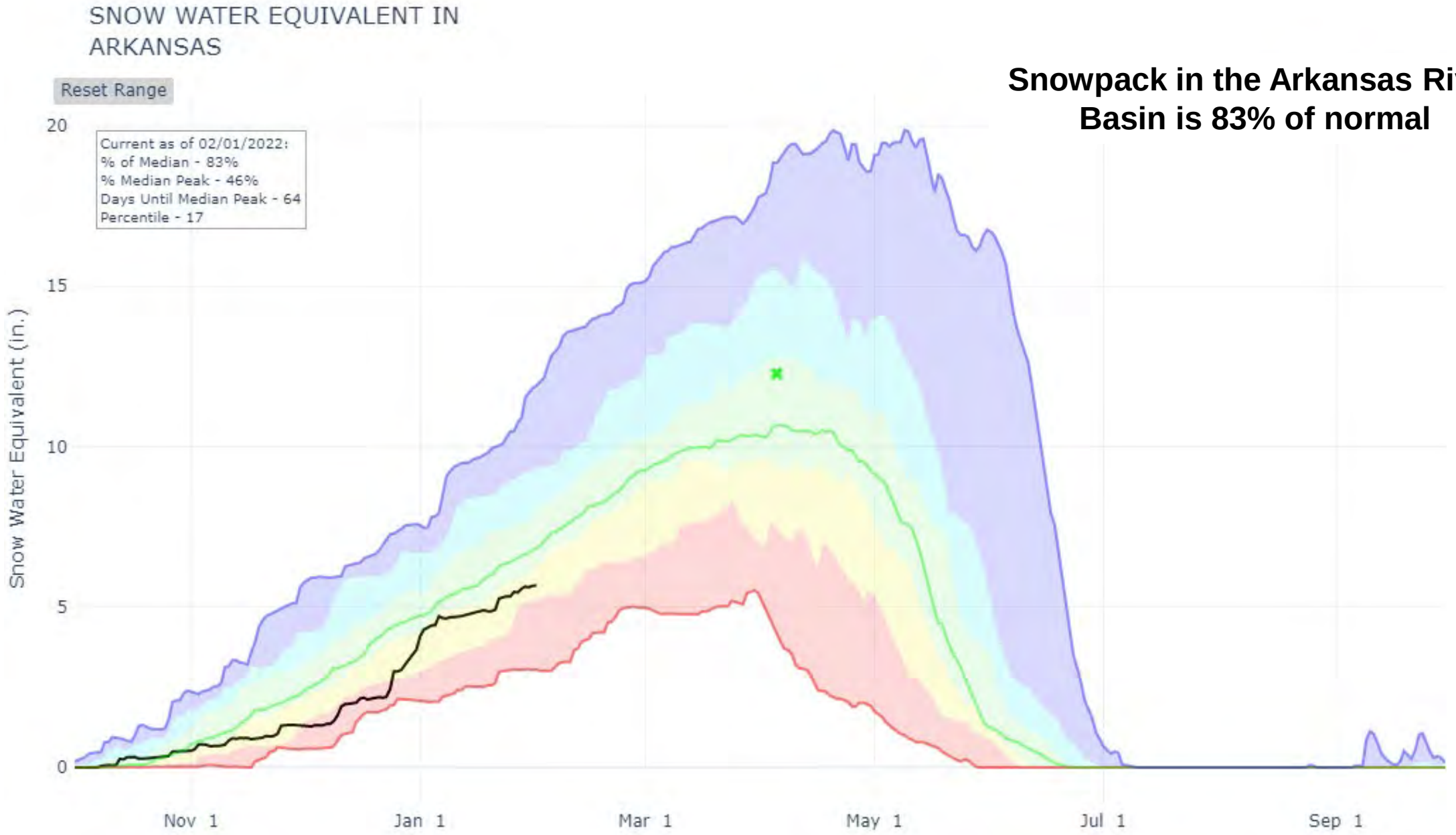
Brad Rippey
U.S. Department of Agriculture

Last Month:
December 28, 2021



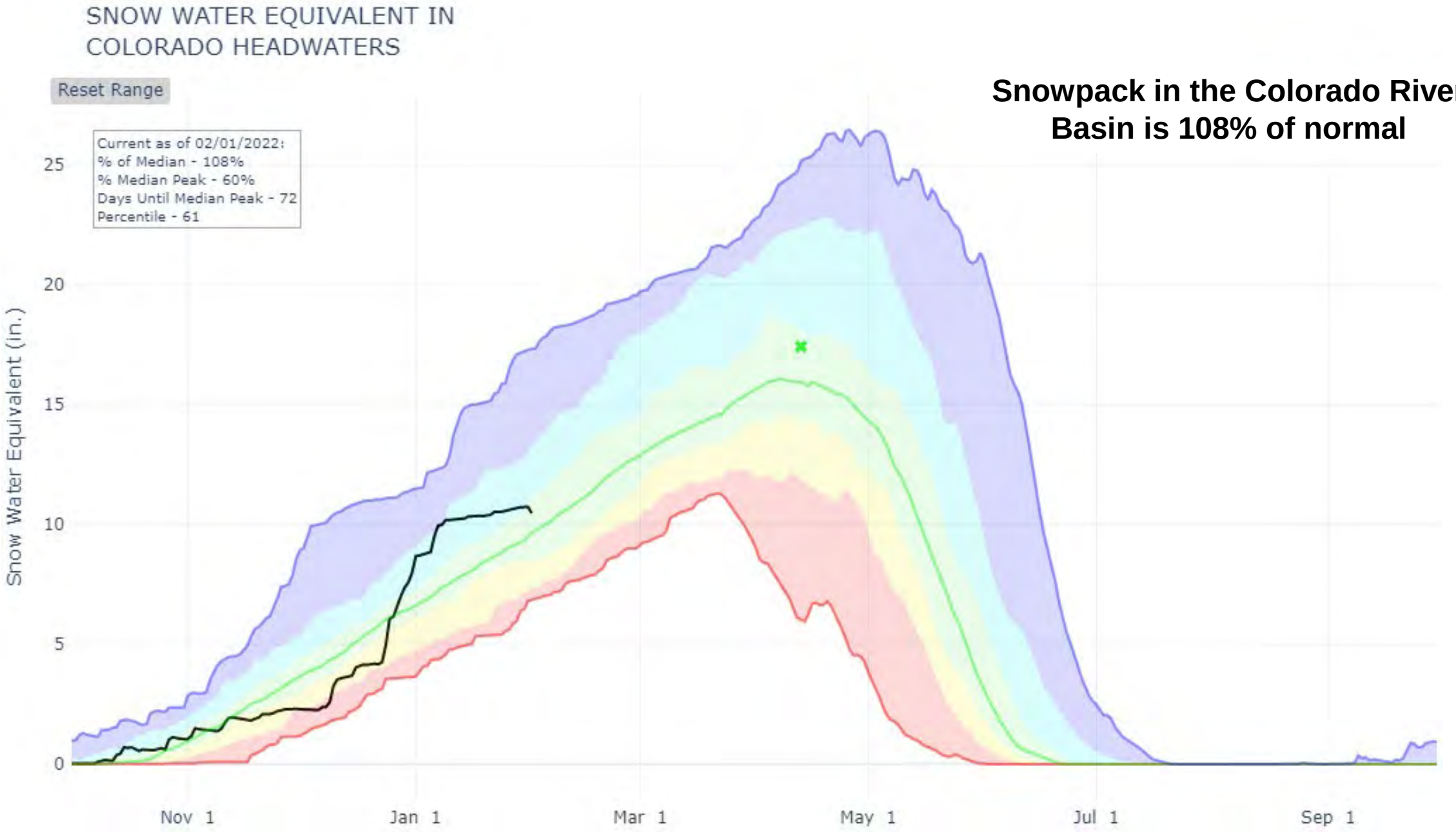


The Evaporative Drought Demand Index shows extremely dry conditions in eastern Colorado



Snowpack in the Arkansas River Basin is 83% of normal

Source: NRCS

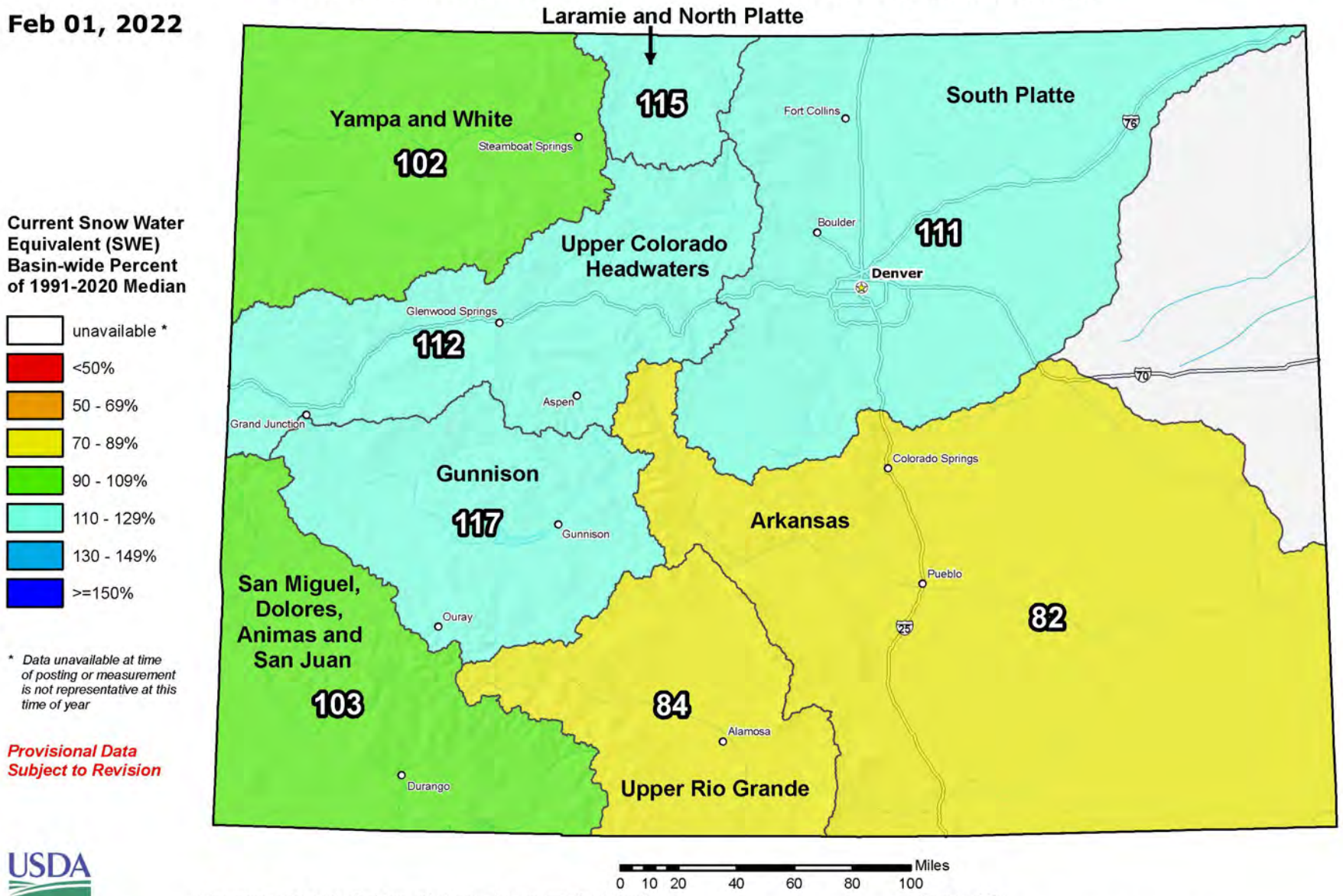


Snowpack in the Colorado River Basin is 108% of normal

Source: NRCS

Colorado
SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Feb 01, 2022



The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
https://www.nrcs.usda.gov/wps/portal/wcc/home/

2022 Demands

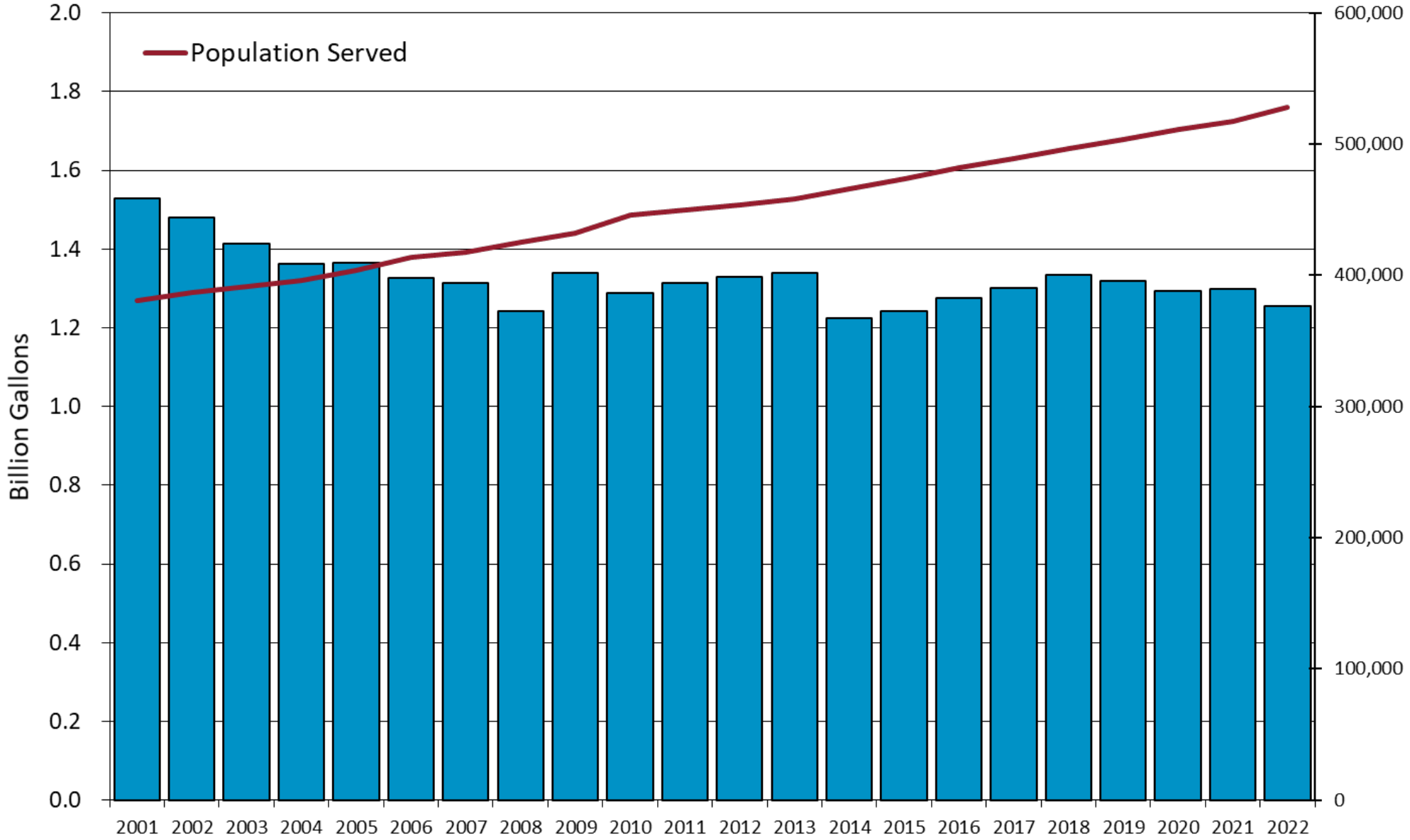
January

- Averaged 40.5 MGD
- 3.3% less than January 2021

2022 Year to Date

- Averaging 40.5 MGD, 1.25 BG total
  - 3.3% less than 2021
  - 0.043 Billion Gallons less than 2021

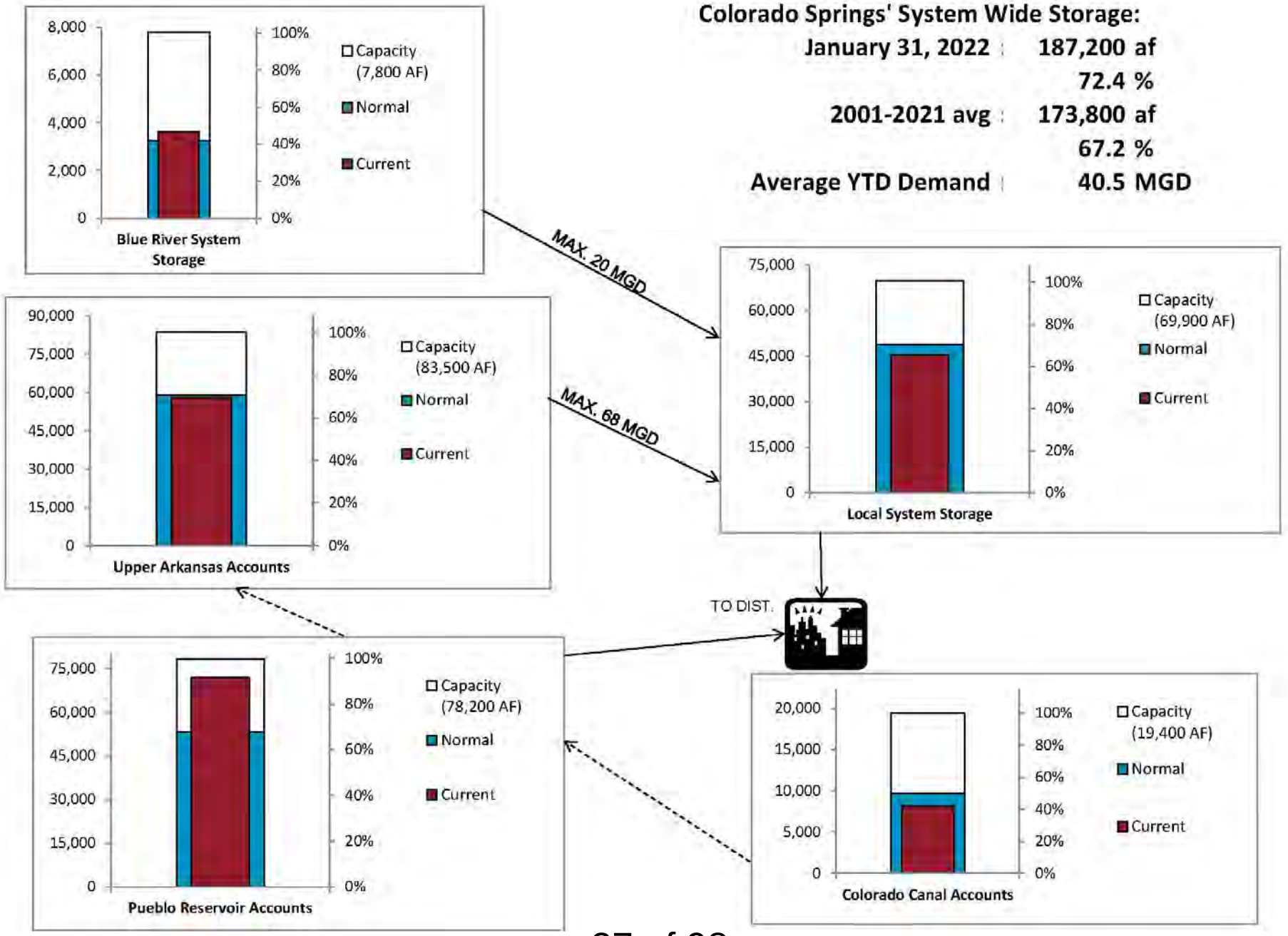
Monthly Water Use for January

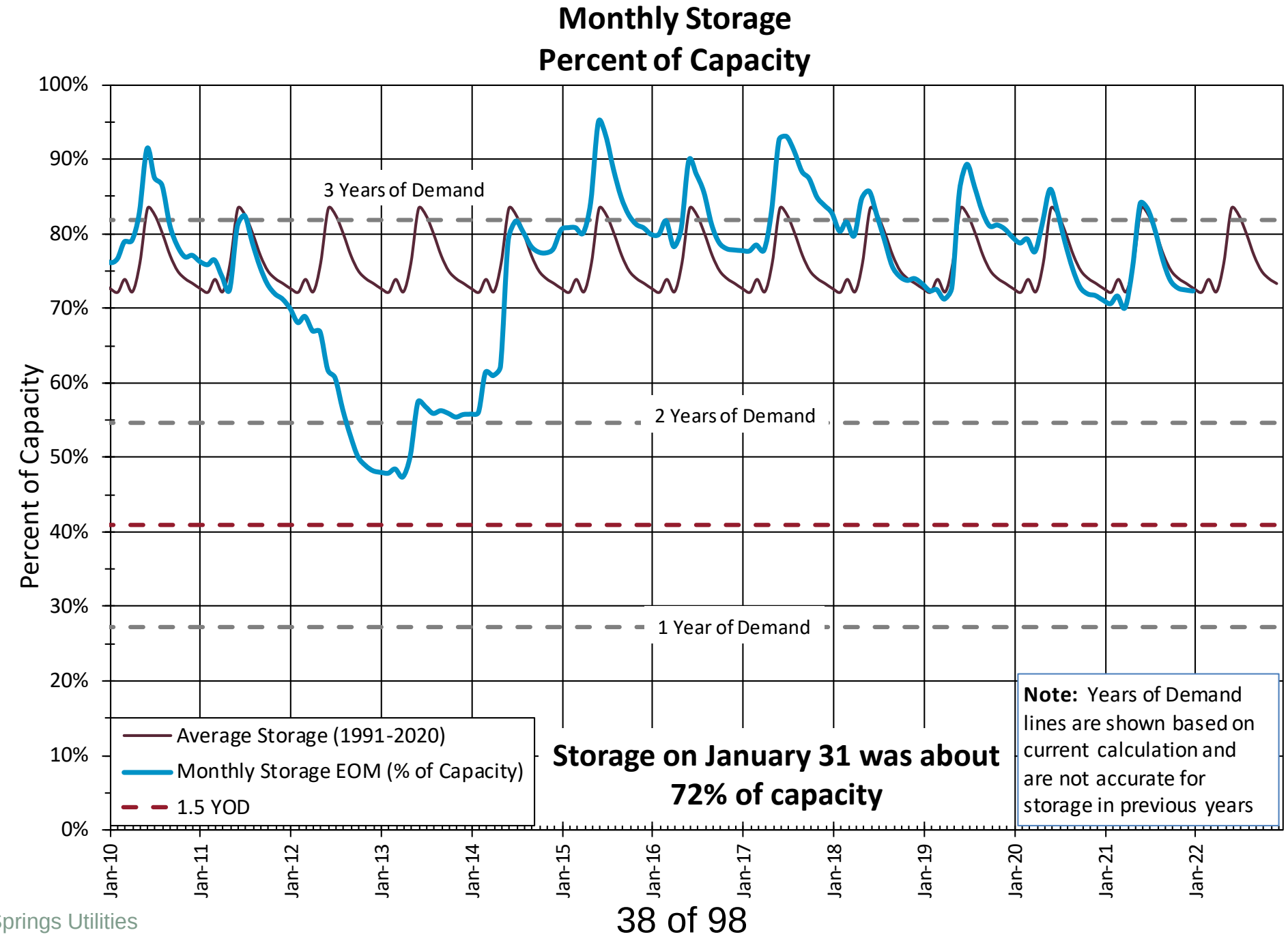


Reservoir Levels

January 31, 2022

- Pikes Peak 59 %
  - 91-20 Avg. 65 %
- Rampart 69 %
  - 91-20 Avg. 76 %
- Local Total 65 %
  - 91-20 Avg. 72 %
- System Total 72 %
  - 91-20 Avg. 73 %


Colorado Springs' System Wide Storage:
January 31, 2022 : 187,200 af
72.4 %
2001-2021 avg : 173,800 af
67.2 %
Average YTD Demand : 40.5 MGD
8,000
6,000
4,000
2,000
0
100%
80%
60%
40%
20%
0%
Capacity (7,800 AF)
Normal
Current
Blue River System Storage
MAX. 20 MGD
90,000
75,000
60,000
45,000
30,000
15,000
0
Capacity (83,500 AF)
Normal
Current
Upper Arkansas Accounts
MAX. 68 MGD
75,000
60,000
45,000
30,000
15,000
0
Capacity (69,900 AF)
Normal
Current
Local System Storage
TO DIST.
75,000
60,000
45,000
30,000
15,000
0
Capacity (78,200 AF)
Normal
Current
Pueblo Reservoir Accounts
20,000
15,000
10,000
5,000
0
Capacity (19,400 AF)
Normal
Current
Colorado Canal Accounts


Monthly Storage
Percent of Capacity
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Percent of Capacity
3 Years of Demand
2 Years of Demand
1 Year of Demand
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Average Storage (1991-2020)
Monthly Storage EOM (% of Capacity)
1.5 YOD
Storage on January 31 was about 72% of capacity
Note: Years of Demand lines are shown based on current calculation and are not accurate for storage in previous years

2022 Regional Water Contracts

Donala Water & Sanitation District

- Through January 31, 2022: Conveyed 0.0 AF for $3,646
- Premium to Municipal Government: $608

Security Water District

- Through January 31, 2022: Conveyed 0.0 AF for $2,775
- Premium to Municipal Government: $463

Outside Service Area Augmentation Leases - PF, LLC (Seven Falls), Emerald Valley Ranch

- Through January 31, 2022: Leased 3.0 AF for $1,647
- Premium to Municipal Government: $274

Total 2022 YTD Revenue from Regional Contracts: $8,068

Water Outlook

- Situation Outlook Summary
  - System-wide storage at 72% of capacity, slightly below our long term average
  - About 2.7 years of demand in storage, based on the past 3 years of demand
  - Have 216 days of demand in local storage
- The 12-week EDDI shows dry evaporative demands across CO; persistence of this signal into spring and summer could predict deepening drought
- Three-month outlook predicts
  - Higher chances of above-average temperatures across Colorado
  - Higher chances of below-average precipitation across Colorado
- We continue to monitor snowpack, demand and storage to maximize available water supply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Date: February 16, 2022

To: Utilities Board

From: Aram Benyamin, Chief Executive Officer

Subject: **Enterprise Innovation Update**

Desired Action: Discussion

Previous Board Communications/Discussion: Colorado Springs Utilities Policy Advisory Committee (UPAC) presented their recommendation on I-14 Enterprise Innovation Policy implementation the Utilities Board on July 21, 2021.

Executive Summary: UPAC provided an overview of the innovation assignment they had completed over nine months. The Utilities Board approved the recommendation with minor changes.

Background Information: UPAC was tasked with highlighting current innovative actions at utilities as well as providing insight on best industry best practices; defining what innovation means to the organization and providing policy guidance for future programs. The Board approved UPAC's recommendation to add a 14th instruction to the CEO on enterprise innovation

Alternatives:
N/A

Recommendations: Colorado Springs Utilities is recommending innovation program implementation that is customer-focused and combines elements of innovation and LEAN Six Sigma methodologies. LEAN is a collaborative team approach to improve performance and eliminate waste while reducing variation.

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Enterprise Innovation Update

Utilities Board, February 16, 2022

Earl Wilkinson

Water, Compliance and Innovation Officer

Innovation at Colorado Springs Utilities

- Innovation is integral to our value of Continuous Improvement
- Innovation integrates into our existing LEAN program
- Leaders at all levels are focused on creating a culture that invites and supports innovation
  - Encourage and foster creativity
  - Create a better environment for learning
  - Expect and learn from failures
  - Use an iterative process
  - Celebrate and build on success

How are we more innovative today?

- Focus on continuous improvement
- Desire to improve customer service
- Environmental stewardship
- Encouraging cross functional teams

Innovation examples

Current innovative projects

- AnnexCOS – Integrated Modeling
- EV Charging Station
- Direct Potable Reuse (DPR)
- GE natural gas units (6)
- Agricultural transfers
- Biogas project
- Raw water pipe lining


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Date: February 16, 2022

To: Utilities Board

From: Aram Benyamin, Chief Executive Officer

Subject: **DSM (Demand-Side Management) Energy and Water Conservation Calculations and Verification Standards**

Desired Action: Discussion

Previous Board Communication/Discussion: N/A

Executive Summary: Provide an overview of the calculations and verification standards for our DSM (Demand-Side Management) Energy and Water Conservation programs.

Background Information: Colorado Springs Utilities applies best practices in establishing and measuring standards for calculating savings/reductions for each of our efficiency and carbon reduction programs. In addition to industry and local data sources, research from federal agencies and peer utilities is considered in establishing savings calculations. These programs also receive periodic review (measurement and verification) where assumptions and calculations are tested against actuals. In the upcoming Utilities Board, meeting we will provide an overview of the verification standards and calculations for your review.

Summary Table of Programs

The following programs are addressed in the standards and calculations document.

DSM Energy

Education and Technical Assistance
Residential Energy Profile
Research Dev & Demo*
Residential and Business Programs
Residential Refrigerator Recycling Rebate
Residential Furnace Rebate
Residential Insulation & A/S Rebate
Residential Gas Water Heater Rebate
Elec Efficiency Product Promo - EEPP EL14

Elec Efficiency Product Promo - LED Exchange
Electric Clothes Dryer Rebate
WIFI Smart Thermostat
Smart Thermostat DR Program
E-bike Rebate
Custom Programs
Residential Home Eff Assist Program
Business Lighting Rebate
Business Custom Rebate
Business Builder Incentive Program
Business HEAC Equip Rebate
Renewable Energy Programs
Residential/ Business Renewable Energy Rebate
Green Power Product
Community Solar Garden Incentive

Water Conservation

Technical Assistance
Commercial Irrigation Audit Program
Outdoor Programs
Commercial Irrigation Efficiency Grant/Rebate
Commercial Irrigation Equipment Rebate
Commercial Turf to Native Grass Conversion Rebate
Residential Irrigation Equipment Rebate
Indoor Programs
Business Custom Rebate
Business Customer Assessment Program
Commercial Fixture/PRSV Retrofits
Non-Profit Fixture Retrofits and CO Energy Office Toilet Replacements
HEAP/ Low Income Programs
Low Income Multi-Family Rehab Project
Residential Efficiency Kit Giveaway
Residential and Business Ultra-High Efficiency Toilet Rebates
Ordinances and Regulation
Water-wise Rules - Establishment Permits
Water-wise Rules - Rules Enforcement
Partnerships and Outreach
Irrigation Equipment Wholesale Coupon

Supply Side
Leak Detection Survey
Leak Response/ Repair Prioritization

Options: Utilities Board could endorse the calculations and verification standards of the DSM and Water Conservation programs; or Utilities Board could request staff make modifications to the calculations and verification standards of the DSM and Water Conservation programs presented.

Recommendations: Staff is requesting endorsement of the calculations and verification standards for the DSM and Water Conservation programs at the February 16, 2022 Utilities Board Meeting.

Overview

Colorado Springs Utilities applies best practices in establishing and measuring standards for calculating savings/reductions for each of our efficiency and carbon reduction programs. In addition to industry and local data sources, research from federal agencies and peer utilities is considered in establishing savings calculations.

Summary Table of Programs

DSM Energy

Residential and Business Programs
Residential Refrigerator Recycling Rebate
Residential Furnace Rebate
Residential Insulation & Air Sealing Rebate
Residential Gas Water Heater Rebate
Elec Efficiency Product Promo
Electric Clothes Dryer Rebate
WIFI Smart Thermostat Rebate
Smart Thermostat DR Program
E-bike Rebate
Custom Programs
Residential Home Eff Assist Program
Business Lighting Rebate
Business Custom Rebate
Business Builder Incentive Program
Business HEAC Equip Rebate
Renewable Energy Programs
Residential/ Business Renewable Energy Rebate
Green Power Product
Community Solar Garden Incentive

Water Conservation

Technical Assistance Program
Commercial Irrigation Audit Program
Outdoor Programs
Commercial Irrigation Efficiency Grant/Rebate
Commercial Irrigation Equipment Rebates
Commercial Irrigation Flow Sensor Rebates
Commercial Turf to Native Grass Conversion Rebate
Residential Irrigation Equipment Rebates
Indoor Programs
Business Custom Water Rebate
Business Customer Assessment Program
Commercial Fixture/Pre-rinse Spray Valve (PRSV) Retrofits
Non-Profit Fixture Retrofits and HEAP (Low Income) Programs
Low Income Multi-Family Rehab Project
Residential Efficiency Kit Giveaway
Residential Ultra-High Efficiency Toilet Rebates
Business Ultra-High Efficiency Toilet Rebates
Ordinances and Regulation
Water-wise Rules - Establishment Permits
Water-wise Rules - Rules Enforcement
Partnerships and Outreach
Irrigation Equipment Wholesale Coupon
Supply Side
Leak Detection Survey
Leak Response/ Repair Prioritization

Residential and Business Programs

Residential Refrigerator Recycling Rebate

Colorado Springs Utilities Residential Refrigerator Recycling Rebate reduces electric demand from secondary refrigerators and freezers. It provides customers a $50 incentive to recycle older, inefficient refrigerators or freezers.

Savings and Customer Cost Assumptions

Refrigerator Average Annual Electric Usage [1]	Freezer Annual Electric Usage[2]
816 kWh/unit	553 kWh/unit

Average energy savings per recycled refrigerator or freezer is 497.8 kWh per year or 337.3 kWh per year, respectively. Savings are calculated based on annual energy use of the average unit.

Residential Furnace Rebate

Colorado Springs Utilities Residential Gas Furnace Rebate reduces natural gas demand while promoting customer satisfaction. It provides customers a $250 incentive to switch from older, inefficient natural gas furnaces to an EnergyStar furnace.

Savings and Customer Cost Assumptions

Avg Residential Energy Use Intensity (EUI)[3]	Average Home Square Footage[4]	Average Furnace Efficiency	Energy Star Furnace Efficiency[5]
28.6 kBtu/ft^2/yr	2299 ft^2	80%	95%

Average savings per installed furnace is 11.2 MMBtu per year. Savings are calculated based on annual energy use of the average furnace minus the energy use of the Energy Star furnace. Each furnace energy use is calculated from the EUI, home square footage, and furnace efficiency.

Residential Insulation and Air Sealing Rebate

Colorado Springs Utilities Residential Insulation and Air Sealing Rebate reduces natural gas demand while promoting customer satisfaction. It provides customers an incentive of 40% of the project costs, up to $200 to seal and insulate the living space in their home.

Savings and Customer Cost Assumptions

Baseline (existing) Attic Insulation	Upgraded Attic Insulation	Average Attic Area[6]	Average Number of recessed lights sealed	Average Furnace Efficiency
R-15	R-49	987 ft^2	8	80%

Average savings per insulated and sealed homes are 16.38 MMBtu per year from heating. Savings are calculated based on annual energy use of the home before improvement minus the annual energy use of the home after improvement. Home energy use is calculated from envelope losses and heating requirements.

Residential Water Heater Rebate

Colorado Springs Utilities Residential Gas Water Heater Rebate reduces natural gas demand while promoting customer satisfaction. It provides customers a $50 incentive to switch from older, inefficient natural gas storage water heaters to an EnergyStar water heater.

Savings and Customer Cost Assumptions

Avg Energy Delivered by Residential Water Heater[7]	Average Water Heater Efficiency	Energy Star Water Heater Efficiency[8]
41,045 Btu/day	59%	77%

Average savings per installed water heater are 4.7 MMBtu per year. Savings are calculated based on annual energy use of the average water heater minus the energy use of the Energy Star water heater. Each water heater energy use is calculated from the average energy delivered and water heater efficiency.

Electric Efficiency Product Promo

Colorado Springs Utilities Electric Efficiency Product Promo reduces electric energy use and focuses on low-income areas. The promo distributes LED lights through two major channels. The first is through "HELP kits" in conjunction with Water Residential Efficiency Kits, and the second is through a holiday light exchange.

Savings and Customer Cost Assumptions

LED Type	Baseline (existing) Bulb Wattage[9]	LED Bulb Wattage	Average Hours in Use per Year[10]
850 lumen A-lamp	43 W	9 W	970.9
Holiday Lights	350 W	25 W	230

Average savings per installed bulb or holiday lights is 32 kWh per year or 74.8 kWh per year, respectively. Savings are calculated based on annual energy use of the baseline bulb(s) minus the annual energy use of the LED bulb(s). Each bulb energy use is calculated from the bulb wattage and use.

Electric Clothes Dryer Rebate

Colorado Springs Utilities Electric Clothes Dryer Rebate reduces electric energy use. It provides customers a $50 rebate to switch from older, inefficient electric clothes dryer to an EnergyStar electric clothes dryer.

Savings and Customer Cost Assumptions

Average Load Size[11]	Average Loads per Year[12]	Baseline (existing) Dryer Efficiency[13]	Energy Star Dryer Efficiency[14]
8.45 lbs	283	3.73 lbs/kWh	3.93 lbs/kWh

Average savings per Energy Star dryer is 26 kWh per year. Savings are calculated based on annual energy use of the average dryer minus the energy use of the Energy Star dryer. Each dryer energy use is calculated from the average load size, average number of loads per year, and dryer efficiency.

WIFI Smart Thermostat Rebate

Colorado Springs Utilities WIFI Thermostat reduces gas use from heating and electric energy use from cooling (if applicable). It provides customers a $50 to switch from unprogrammable and programmable thermostats to an Energy Star smart thermostat.

Savings and Customer Cost Assumptions

Average Residential Customer Heating Gas Use per year[15]	Energy Star Smart Thermostat Heating Savings[16]	Average Residential Customer Cooling Electric Use per year[17]	Energy Star Smart Thermostat Heating Savings[18]
579.92 CCF	8%	620.4 kWh	10%

Average savings per Energy Star smart thermostat is 3.1 MMBtu per year and 49.6 kWh per year (if applicable). Savings are calculated based on annual heating and cooling energy use minus the minimum Energy Star savings.

Smart Thermostat Demand Response Program

Colorado Springs Utilities Smart Thermostat Demand Response (DR) Program reduces electric demand from cooling and is scheduled for implementation in Q2 2022. The program provides customers with an approved smart thermostat and air conditioning a $50 enrollment bonus and a $25 rebate to allow Utilities to control their smart thermostats during peak loads to reduce demand requirements.

Savings and Customer Cost Assumptions

Average Peak Savings per Thermostat[19]
0.7245 kW

This program has not been implemented yet, so estimated savings are based on industry studies of other local utilities.

Electric-Bike Rebate

Colorado Springs Utilities Electric-Bike (E-Bike) Rebate supports the environment and innovation by reducing the number of gas-powered vehicles on the road and carbon emissions while helping members of the community increase healthy habits. It is scheduled for implementation in Q2 of 2022. The program provides customers with a $150 rebate to assist with the purchase of a new e-bike.

Savings and Customer Cost Assumptions

Average Daily Commute[20]	CO2 emitted per Gallon of Gas[21]	Average Miles per Gallon[22]	Average Number of Days Riding	Average Number of Weeks Riding
15 miles	8.89 kg	22 mpg	2 days/week	48 weeks/yr

Average savings per E-bike is 0.64 short tons of CO2 per year. Savings are calculated based on estimated average distance traveled, consistency of riding, the average amount of CO2 emitted per gallon of gas.

Custom Programs

Residential Home Efficiency Assistance Program

Colorado Springs Utilities Residential Home Efficiency Assistance Program provides for high-value insulation, air sealing, and efficiency work on low-income homes through a third-party contractor. This work decreases energy, gas, and water use and demand. The program is fully funded through three services (electric, gas, and water) and is at no cost to the customer.

Savings and Customer Cost Assumptions

Average Peak Savings per House	Average Energy Savings per House	Average Gas Savings per House	Average Water Savings per House
0.044 kW	370 kWh/year	4.2 MMBtu/year	16,946 gal/year

The work completed on each home is custom based on the condition of the home and the customers' needs. Therefore, savings are dependent on actual work completed. The above savings are an average of actual savings from the 2020 program year.

Business Lighting Rebate

Colorado Springs Utilities Business Lighting Rebate reduces energy and demand from semi-custom lighting upgrades. It provides customers with a rebate associated with the size of the upgrade, based on energy and demand savings.

Savings and Customer Cost Assumptions

Average Peak Savings per Upgrade	Average Energy Savings per Upgrade
48.23 kW	85,890 kWh/year

The savings from each upgrade are based on the specific lighting devices that are upgraded. Therefore, savings are dependent on work completed. The above savings are an average of actual savings from the 2019 and 2020 program years. Actual savings are calculated from field-verified bulb wattage savings, operating time, and free ridership.

Business Custom Rebate

Colorado Springs Utilities Business Custom Rebate reduces energy and demand from custom building upgrades. It provides customers with a rebate associated with the size of the upgrade, based on actual energy and demand savings measured and verified upon upgrade completion.

Savings and Customer Cost Assumptions

Average Peak Savings per Upgrade	Average Energy Savings per Upgrade
75.2 kW	309,270 kWh/year

The size and complexity of each upgrade is based on the requirements of the building, and a measurement and verification plan is developed on a per-project basis. Therefore, savings are dependent on the type and effectiveness of work completed. The above savings are an average of actual savings from the 2020 program years. The cost-effectiveness screening and pricing procedure for this program balances several concerns between the utility, the participating customer, and non-

participant ratepayers, and is based on a combination of avoided utility costs, project cost, and customer incremental costs.

Business Builder Incentive Program

Description

The builder incentive program is a direct-to-builder incentive for producing homes to a higher efficiency than the current market and regulatory energy codes. It provides builders with incentives based on efficiency of the home and enhanced building techniques including electrification.

Savings and Customer Cost Assumptions

Average Energy Savings per Home	Average Demand Savings per Home	Average Gas Savings per Home
81.35 kWh/year	0.11 kW	13.17 MMBtu/year

Actual savings are dependent on the home's design and builder's capability. Therefore, the above savings are an average of actual savings from the 2020 program years.

Business High Efficiency Cooling Equipment Rebate

Colorado Springs Utilities Business High Efficiency Cooling Equipment Rebate is a mid-stream incentive program designed to increase penetration rates of high efficiency cooling equipment which will decrease business energy and demand requirements. It provides suppliers with incentives based on type and efficiency of cooling equipment installed for Utilities customers.

Savings and Customer Cost Assumptions

Average Unit Size	Average Unit Energy Savings	Average Unit Demand Savings	Program Free ridership
5 tons	4,578.8 kWh/year	2.3 kW	10%

The actual savings of each unit is dependent on actual equipment installed. The above savings are an average of actual savings 2020 program year.

Renewable Energy Programs

Residential and Business Renewable Energy Rebate

Colorado Springs Utilities Residential and Business Renewable Energy Rebate reduces energy and demand on the grid during daylight hours for customers that install photovoltaic (PV) cells on their roof to offset building energy use. It provides customers with a rebate of $0.10 per AC watt installed.

Savings and Customer Cost Assumptions

Average System DC Rating	Average System Losses[23]	Average Inverter Efficiency[24]
5,000 W	85.92%	96%

The average energy and demand savings is 6,792 kWh/year and 1.5 kW, respectively. The savings are calculated based on of actual PV system DC rating, system losses, and inverter efficiency

Green Power Product

Colorado Springs Utilities Green Power Product is a supply-side renewable premium product, which allows customers to substitute renewable energy for their normal mix of conventional and renewable power at a cost based on renewable generation. While this program helps compensate Utilities for the cost of the renewable energy, no energy or demand savings are claimed from this program.

Community Solar Garden Incentive

Colorado Springs Utilities Community Solar Garden is an investor-owned supply-side photovoltaic electric generating installation which allows customers to subscribe to a portion the electric generating capacity. While this program helps reduce the energy and demand requirements from Utilities, the effects from Community Solar Gardens are handled as a supply-side resource in the electric resource model. Therefore, no energy or demand savings are claimed due to this program.

DSM Energy Endnotes

[1] Appliances - Refrigerator/Freezer Decommissioning v6.0); Retrieved on July 29, 2021 from: https://rtf.nwcouncil.org/measure/refrigeratorfreezer-decommissioning-0; "LogicModel1993" Tab; Zero consumption after removal for units without replacement
[2] Appliances - Refrigerator/Freezer Decommissioning v6.0); Retrieved on July 29, 2021 from: https://rtf.nwcouncil.org/measure/refrigeratorfreezer-decommissioning-0; "LogicModel1993" Tab; Zero consumption after removal for units without replacement
[3] ENERGY STAR furnace calculator. Original source data: 2009 EPA RECS survey, 1990's home
[4] Average home square footage based single family homes in El Paso County, accessed from Assessors database 02/01/22
[5] Based on program requirement for 95% AFUE (ENERGY STAR v4.0))
[6] Average attic square footage based single family homes in El Paso County, accessed from Assessors database 02/01/22
[7] https://www.energy.gov/energysaver/estimating-costs-and-efficiency-storage-demand-and-heat-pump-water-heaters
[8] Energy Star v3.0
[9] EISA maximum allowable wattage for a 60W equivalent, 850 lumen A-lamp
[10] NREL Residential Lighting Evaluation Protocol: http://www1.eere.energy.gov/wip/pdfs/53827-6.pdf and http://www.nrel.gov/docs/fy13osti/53827.pdf ref to page 13 composite table of hours of use from recent lighting studies. 2.66 is based on an average hours of use of studies referenced.
[11] EPA Energy Savings Calculations used as a guide: http://www.energystar.gov/sites/default/files/specs//ENERGY%20STAR%20Draft%202%20Version%201.0%20Clothes%20Dryers%20Data%20and%20Analysis.xlsx
[12] EPA Energy Savings Calculations used as a guide: http://www.energystar.gov/sites/default/files/specs//ENERGY%20STAR%20Draft%202%20Version%201.0%20Clothes%20Dryers%20Data%20and%20Analysis.xlsx
[13] Federal Energy Standards baseline as of 01/01/2015
[14] Energy Star Program Requirements Version 1.1
[15] From 2016 Colorado Springs Utilities sale, minus average water heating gas use
[16] Energy Star Smart Thermostat version 1.0
[17]From 2016 Colorado Springs Utilities sale, percentage of electric for cooling based on 2013 load study
[18] Energy Star Smart Thermostat version 1.0
[19] Xcel Energy Colorado Smart Thermostat Pilot – Evaluation Report, May 12, 2017 - Average of Vendor 1 and Vendor 2 BYOT Event Impacts. These numbers are used as estimates and will be updated when actuals are available.
[20] Target audience works within 7.5 miles of home
[21] https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle#:~:text=typical%20passenger%20vehicle%3F-,A%20typical%20passenger%20vehicle%20emits%20about%204.6%20metric%20tons%20of,8%2C887%20grams%20of%20CO2.
[22] https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle#:~:text=typical%20passenger%20vehicle%3F-,A%20typical%20passenger%20vehicle%20emits%20about%204.6%20metric%20tons%20of,8%2C887%20grams%20of%20CO2.
[23] NREL PVWatts Calculator for 5000 W Array in Colorado Springs, CO
[24] NREL PVWatts Calculator for 5000 W Array in Colorado Springs, CO

Technical Assistance Program

Commercial Irrigation Audit

Utilities offers free irrigation system audits for large commercial irrigation customers.

Savings and Customer Cost Assumptions

Avg irrigated area covered by 1 audit[1]	Avg use per ft^2. BEFORE rebate[2]	Estimated savings WITH smart irrigation controller[3]
140,000 ft^2.	18 gallons	2.5%

Average savings per audit is 63,000 gallons. Savings per audit are calculated based on the estimated irrigated area, estimated irrigation depth prior to rebate, and percent change in use following rebate. Savings are assumed to decay over time because they are behavioral in nature.

Outdoor Programs

Commercial Irrigation Efficiency Grant/Rebate

See Sprinkler Nozzle and Heads Rebates.

Commercial Irrigation Equipment Rebates

Commercial Sprinkler Nozzle Rebate

Utilities distributes high efficiency multi-stream rotary sprinkler nozzles to commercial customers and contractors through three separate programs: the Commercial Irrigation Equipment Rebate Program, the Commercial Irrigation Efficiency Grant/Rebate, and the Irrigation Equipment Wholesale Coupon Program. Rebates of up to $4 per nozzle are provided through the rebate and grant programs, while irrigation contractors can use the coupon program to purchase nozzles for their clients.

Savings and Customer Cost Assumptions

Avg irrigated area covered by 1 nozzle[4]	Avg use per ft^2. BEFORE rebate[5]	Avg distribution uniformity BEFORE rebate[6]	Avg distribution uniformity AFTER rebate[7]	Avg improvement in distribution uniformity AFTER rebate[8]
400 ft2	16 gallons	65%	80%	23%

Average savings per installed nozzle is 1,477 gallons. Savings are calculated based off annual water use of the average spray nozzle minus the water use of the rotary nozzle. Water savings per nozzle is calculated based on the average area covered, typical distribution uniformity improvement, and typical irrigation volume applied.

Commercial Sprinkler Head Rebate

Utilities distributes pressure-regulating sprinkler bodies with check valves to commercial customers and contractors through three separate programs: the Commercial Irrigation Equipment Rebate Program, the Commercial Irrigation Efficiency Grant/Rebate, and the Irrigation Equipment Wholesale Coupon Program. Rebates of up to $15 per head are provided through the rebate and grant programs, while irrigation contractors can use the coupon program to purchase qualifying heads for their clients.

Savings and Customer Cost Assumptions

Avg irrigated area covered by 1 head[9]	Avg use per ft^2BEFORE rebate[10]	Estimated savings due to pressure regulation[11]	Estimated savings due to check valve[12]	Estimated total savings
400 ft2	16 gallons	19%	2%	21%

Average savings per installed head is 1,344 gallons. Savings per head is calculated based on the estimated change in inlet pressure utilizing a pressure regulating head compared to a standard head using the Bernoulli equation plus the volume of water contained in a typical irrigation zone saved by a check valve.

Commercial Smart Irrigation Controller Rebates

Utilities offers a rebate of half the price up to $400 per commercial smart irrigation controller for commercial customers.

Savings and Customer Cost Assumptions

Avg irrigated area covered by 1 controller[13]	Avg use per ft^2 BEFORE rebate[14]	Estimated savings WITH smart irrigation controller[15]
15,000 ft2	18 gallons	10%

Average savings per installed controller is 27,000 gallons. Savings per controller is calculated based on the estimated irrigated area, estimated irrigation depth prior to rebate, and percent change in use following rebate.

Commercial Irrigation Flow Sensor Rebates

Utilities offers a rebate of half the price up to $400 per commercial flow sensor for commercial customers.

Savings and Customer Cost Assumptions

Avg irrigated area covered by 1 flow sensor[16]	Avg use per ft2 BEFORE rebate[17]	Estimated savings WITH flow sensor[18]
15,000 ft2	18 gallons	10%

Average savings per installed sensor is 27,000 gallons. Savings per sensor is calculated based on the estimated irrigated area, estimated irrigation depth prior to rebate, and percent change in use following rebate.

Commercial Turf to Native Grass Conversion Program

Utilities offers commercial customers a rebate of up to $7,500 per acre for the conversion of high-water use turfgrass to water-conserving native grass.

Savings and Customer Cost Assumptions

Native Grass Type	Average Annual Irrigation Water Requirement for Turfgrass[19]	Average Annual Irrigation Water Requirement for War Season Native Grass[20]
Warm Season	2 c.f./ ft^2	0.6 c.f./ ft^2
Cool Season	2 c.f./ ft^2	1.3 c.f./ ft^2

Average savings per installed acre of warm season native grass is 1.4 cubic feet per square foot or about 456,000 gallons per acre. Average savings per installed acre of warm season native grass is 0.7 cubic feet per square foot or about 228,000 gallons per acre. All projects require pre- and post-installation inspections to ensure turfgrass is being irrigated prior to project and that native grass is well-established following installation.

Residential Irrigation Equipment Rebates

Residential Sprinkler Nozzle Rebate

Utilities offers a rebate of up to $4 per high efficiency multi-stream rotary sprinkler nozzle to residential customers.

Savings and Customer Cost Assumptions

Avg irrigated area covered by 1 nozzle[21]	Avg use per ft^2 BEFORE rebate[22]	Avg distribution uniformity BEFORE rebate[23]	Avg distribution uniformity AFTER rebate[24]	Avg improvement in distribution uniformity AFTER rebate[25]
350 ft2	10 gallons	65%	80%	23%

Average savings per installed nozzle is 805 gallons. Savings is calculated based off annual water use of the average spray nozzle minus the water use of the rotary nozzle. Water savings per nozzle is calculated based on the average area covered, typical distribution uniformity improvement, and typical irrigation volume applied.

Residential Sprinkler Head Rebates

Utilities offers a rebate of up to $5 per residential sprinkler head with a check valve to residential customers.

Savings and Customer Cost Assumptions

Avg irrigated area covered by 1 head[26]	Avg use per ft2 BEFORE rebate[27]	Estimated savings due to pressure regulation[28]	Estimated savings due to check valve[29]	Estimated total savings
350 ft2	10 gallons	19%	2%	21%

Average savings per installed head is 735 gallons. Savings per head is calculated based on the estimated change in inlet pressure utilizing a pressure regulating head compared to a standard head using the Bernoulli equation plus the volume of water contained in a typical irrigation zone saved by a check valve.

Residential Smart Irrigation Controller Rebates

Utilities offers a rebate of $50 for the purchase and installation of a smart irrigation controller for residential customers.

Savings and Customer Cost Assumptions

Avg irrigated area covered by 1 controller[30]	Avg use per ft2 BEFORE rebate[31]	Estimated savings WITH controller[32]
5,000 ft2	18 gallons	10%

Average savings per installed controller is 9,000 gallons. Savings per controller is calculated based on the estimated irrigated area, estimated irrigation depth prior to rebate, and percent change in use following rebate.

Residential Irrigation Rain Sensor Rebates

Utilities offers a rebate of up to $50 for wireless and $25 for wired rain sensors for residential customers.

Savings and Customer Cost Assumptions

Avg irrigated area covered by 1 rain sensor[33]	Avg use per ft2 BEFORE rebate[34]	Estimated savings WITH rain sensor[35]
6,000 ft2	10 gallons	5%

Average savings per installed sensor is 3,000 gallons. Savings per sensor are calculated based on the estimated irrigated area, estimated irrigation depth prior to rebate, and percent change in use following rebate.

Indoor Programs

Business Custom Water Rebate

Utilities offers a Business Custom Water Rebate for customers who require large amounts of water for indoor use, including schools, hospitals, apartment complexes, hotels, restaurants and retirement facilities.

Savings and Customer Cost Assumptions

All projects require pre- and post-installation inspections and customized savings calculations based on actual field measurements. Actual measurements of use are taken with a clamp-on ultrasonic meter before and after the project for all process water uses. Standard engineering calculations are performed to estimate savings for large domestic end use projects, when possible.

Business Customer Assessment Program

Utilities offers on-site water use audits to business customers whose water use is more than double the same month the previous year.

Savings and Customer Cost Assumptions

Participating customers receive a thorough water use analysis on on-site water use audit. Many customers are experiencing leaks or other inefficiencies they were previously unaware of. Calculations of water savings using actual consumption data before and after the event are used to estimate savings. If the customer participates in another efficiency program as a result of the assessment, savings are accrued in those programs.

Commercial Fixture/Pre-rinse Spray Valve (PRSV) Retrofits

Utilities provides direct retrofits of existing PRSVs in commercial kitchens. These typically occur as a result of a Commercial Indoor Water Audit.

Savings and Customer Cost Assumptions

Avg flow rate of old equipment[36]	Avg flow rate of new equipment[37]	Average minutes of usage per day[38]	Avg days of use per year[39]
1.28 gpm	0.99 gpm	120	355

Average savings per installed PRSV is 12,524 gallons per year. Savings are calculated based on annual water use of the average PRSV minus the water use of an efficient PRSV. Usage for each fixture is calculated from the tested flow rate, minutes of use per day, and days of use per year.

Non-Profit Fixture and HEAP (Low Income) Programs

Utilities provides distribution and/or direct installation of ultra-high efficiency toilets (UHETs) for single family low-income customers through the HEAP Program, Colorado Energy Office, and local non-profit low-income housing providers. *See Residential Efficiency Kit for aerator and showerhead savings.*

Savings and Customer Cost Assumptions

Avg flush volume of old equipment[40]	UHET flush volume[41]	Avg # residents per home[42]	Flushes per rebated fixture per day[43]	Days of use per year[44]
2.75 gpf	0.8 gpf	2.6	6.63	355

Average savings per installed toilet is 4,590 gallons per year. Savings are calculated based on annual water use of the average toilet minus the water use of the UHET. Usage for each fixture is calculated from the tested flush volume, number of residents per home, number of flushes per resident per day, percentage of flushes used by rebated toilet, and days of use per year. *See Residential Efficiency Kit for aerator and showerhead savings.*

Low Income Multifamily Rehab Project

Utilities provides direct installation of ultra-high efficiency toilets (UHETs) through a licensed plumbing contractor for qualifying low-income multifamily residential customers.

Savings and Customer Cost Assumptions

Avg flush volume of old equipment[45]	UHET flush volume[46]	Avg # residents per home[47]	Flushes per rebated fixture per day[48]	Days of use per year[49]
2.75 gpf	0.8 gpf	2.25	7.69	335

Average savings per installed toilet is 5,024 gallons per year. Savings are calculated based on annual water use of the average toilet minus the water use of the UHET. Usage for each fixture is calculated from the tested flush volume, number of residents per home, number of flushes per resident per day, percentage of flushes used by retrofitted toilet, and days of use per year. *See Residential Efficiency Kit for aerator and showerhead savings.*

Residential Efficiency Kit Giveaway

Utilities distributes free efficiency kits which contains LED light bulbs, high efficiency showerheads, and faucet aerators. Distributions typically occur through community centers, senior centers, veterans' organizations, and food pantries.

Savings and Customer Cost Assumptions

Fixture Type	Avg flow rate of old equipment[50]	Avg flow rate of new equipment[51]	Avg # residents per home[52]	Minute of use per fixture per day[53]	Days of use per year
Showerhead	2.0 gpm	1.5 gpm	2.5	13.7	355
Faucet Aerator	0.85 gpm	0.5 gpm	2.5	8.3	355

Average savings per kit is 2,833 gallons per year. Each kit contains two showerheads and two aerators. It is assumed only one of each gets installed, on average. Savings are calculated based on annual water use of average fixtures minus the water use of high efficiency fixtures. Usage for each fixture is calculated from the tested flow rate, number of residents per home, uses per resident per day, average duration per use, and days of use per year.

Residential UHET Rebate

Utilities offers residential customers a rebate of up to $100 for the purchase and installation of a qualifying ultra-high efficiency toilet (UHET).

Savings and Customer Cost Assumptions

Avg flush volume of old equipment[54]	UHET flush volume[55]	Avg # residents per home[56]	Flushes per rebated fixture per day[57]	Days of use per year[58]
2.5 gpf	0.8 gpf	2.6	6.63	355

Average savings per installed toilet is 4,001 gallons per year. Savings are calculated based on annual water use of the average toilet minus the water use of the UHET. Usage for each fixture is calculated from the tested flush volume, number of residents per home, number of flushes per resident per day, percentage of flushes used by rebated toilet, and days of use per year.

Business UHET Rebate

Utilities offers business customers a rebate of up to $100 for the purchase of qualifying tank-type UHETs and up to $150 for qualifying flushometer-type UHETs.

Savings and Customer Cost Assumptions

Avg flush volume of old equipment[59]	UHET flush volume[60]	Flushes per rebated fixture per day[61]	Days of use per year[62]
2.5 gpf	0.8 gpf	11.1	355

Average savings per installed toilet is 5,911 gallons per year. Savings are calculated based on annual water use of the average toilet minus the water use of the UHET. Usage for each fixture is calculated from the tested flush volume, number of users per business, number of flushes per user per day, % of flushes used by retrofitted toilet, and days of use per year.

Ordinances and Regulation

Water-wise Rules Establishment Permits

Utilities requires all customers to get an establishment permit for all new landscape installations requiring more than three days per week watering for establishment. These are typically for the establishment of new sod or seed. Establishment permits require proof of soil amendments which provide measurable water savings benefits.

Savings and Customer Cost Assumptions

Average irrigation water requirement for establishment area[63]	Avg water savings from soil amendments[64]
2 c.f./ft2	5%

Average savings per acre of establishment permit area is 32,587 gallons. Savings per permit is calculated based on the permit area, irrigation water requirement for turf grass, and percent savings associated with soil amendments.

Water-wise Rules Enforcement

Water-wise Rules prohibit all customers from irrigating more than three days per week unless they have a Water Allocation Plan.

Savings and Customer Cost Assumptions

Average savings per customer has been calculated at the end of each irrigation season using a large regression model incorporating sales, weather, and demographic data. Results show an estimated average weather normalized savings of approximately 1,200 gallons per customer per year across all

customer classes. If savings per customer remains consistent over time, savings grows as the customer base grows.

Partnerships and Outreach

Irrigation Equipment Wholesale Coupon

See Sprinkler Nozzle and Heads Rebates.

Supply Side

Leak Detection Survey

Utilities performs proactive distribution system leak detection. This program proactively pinpoints unreported leaks in main distribution lines.

Savings and Customer Cost Assumptions

The Leak Detection Survey (LDS) Team identifies and locates leaks in the finished water distribution system collecting information including, pipe size, pipe material, leak description, pressure, calculated flow rate[65], and duration from pinpoint to repair. Known losses are calculated for each leak by multiplying the estimated flow rate by the known duration of the leakage event. This volume is the water savings volume assumed for each leak. Because these leaks would likely run for weeks or months had they not been pinpointed, this is considered a reasonable and conservative approach to estimating savings.

Leak Response/Repair Prioritization

Utilities responds to both reported and unreported leaks in the finished water distribution system. Reducing the time used to respond to and repair leaks is a source of potential water savings.

Savings and Customer Cost Assumptions

93% of system leaks are repaired within 14 days. Reducing repair times, particularly for leaks running more than 14 days, can provide significant water savings. Because the LDS Team estimates leakage flow rates and duration, water savings can be estimated. Known losses are calculated for each leak by multiplying the estimated flow rate by the known duration of the leakage event. Systematic reductions in response time that demonstrate measurable and sustained changes in leakage run times provide a basis for savings calculations.

Water Energy Endnotes

[1] Derived from program participant data
[2] Assumes average participant uses 20% more than irrigation water requirement
[3] Assumes average participant is overwatering by 5% and half of that waste is saved due to improved scheduling following the audit. Savings associated with any structural system changes are captured in other programs.
[4] Assumes a 16-foot radius adjusted to 180 degrees, on average.
[5] Typical irrigation depth for irrigation customers. This is likely conservative as most rebates are used in turf areas requiring up to 50% more water.
[6] Irrigation Association. Typical distribution uniformity for traditional pop-up spray nozzles. Lower uniformity results in higher usage to meet plant water requirements.
[7] Irrigation Association. Typical distribution uniformity for multi-stream rotary nozzles. Confirmed by numerous studies.
[8] Calculation
[9] Assumes a 16-foot radius adjusted to 180 degrees, on average.
[10] Typical irrigation depth for irrigation customers. This is likely conservative as most rebates are used in turf areas requiring up to 50% more water.
[11] https://www.epa.gov/sites/default/files/2017-01/documents/ws-products-spec-irrigation-sprinklers.pdf. Assumes starting average inlet pressure between 45 and 47 psi regulated to 30 psi. Bernoulli equation
[12] Assumes 225 feet of lateral line between ¾ and 1 inch in diameter and six sprinklers per zone.
[13] Derived from program participant data
[14] Assumes average participant uses 20% more than irrigation water requirement
[15] Based on analysis of program participants. Numerous industry studies find between 10 and 20% savings.
[16] Derived from program participant data
[17] Assumes average participant uses 20% more than irrigation water requirement
[18] Based on analysis of program participants and professional estimates. Savings can be highly variable because it is associated primarily with leak alerts and response, not day to day efficiency.
[19] Based on 10 years of weather station data collected from the USAFA and Fort Carson.
[20] Based on professional experience and data from Colorado State University and the Natural Resource Conservation Service. Cool season native grass mixes are assumed to save .7 cf per ft2 and receive a lower rebate amount.
[21] Assumes a 16-foot radius adjusted to 180 degrees, on average.
[22] Typical irrigation depth for irrigation customers. This is likely conservative as most rebates are used in turf areas requiring up to 50% more water.
[23] Irrigation Association. Typical distribution uniformity for traditional pop-up spray nozzles. Lower uniformity results in higher usage to meet plant water requirements.
[24] Irrigation Association. Typical distribution uniformity for multi-stream rotary nozzles. Confirmed by numerous studies.
[25] Calculation
[26] Assumes a 16-foot radius adjusted to 180 degrees, on average.
[27] Typical irrigation depth for irrigation customers. This is likely conservative as most rebates are used in turf areas requiring up to 50% more water.
[28] https://www.epa.gov/sites/default/files/2017-01/documents/ws-products-spec-irrigation-sprinklers.pdf. Assumes starting average inlet pressure between 45 and 47 psi regulated to 30 psi. Bernoulli equation
[29] Assumes 225 feet of lateral line between ¾ and 1 inch in diameter and six sprinklers per zone.
[30] Derived from program participant data.
[31] Derived from program participant data.
[32] Based on numerous industry studies that find between 10 and 20% savings.
[33] Derived from program participant data.
[34] Average residential irrigation depth.
[35] Assumes 1 in every 20 irrigation cycles is averted by the rain sensing device.

[36] Department of Energy. Current efficiency standard for PRSVs.
[37] Assumes 80% of installed PRSVs are 1.05 gpm and 20% are .67 gpm
[38] Based on customer survey data collected during on-site assessments.
[39] Assumes majority of participants are restaurants that stay open nearly every day.
[40] Derived from WRF Residential End Uses of Water Study, 2016. 2.65 gpf was the national average. Low-income projects have shown a higher than average flush volume.
[41] Program standard. MaP testing results, Gauley and Associates, Ltd and Koeller and Company
[42] Derived from U.S. Census data for single family units.
[43] WRF Residential End Uses of Water Study, 2016. Each resident flushed 5.1 times on average per day. Assumes each rebated toilet gets 50% of the daily flushes.
[44] Assumes full occupancy and 10 days away from home per year.
[45] Derived from WRF Residential End Uses of Water Study, 2016. 2.65 gpf was the national average. This program specifically targets less efficient customers. Assumptions will be revised as program data is collected.
[46] Program standard. MaP testing results, Gauley and Associates, Ltd and Koeller and Company
[47] Derived from U.S. Census data for multifamily units.
[48] WRF Residential End Uses of Water Study, 2016. Each resident flushed 5.1 times on average per day. Assumes each retrofitted toilet gets 70% of the daily flushes, based on HUD data with bathrooms per unit.
[49] Assumes a 95% occupancy rate plus 10 days away from home.
[50] Derived from WRF Residential End Uses of Water Study, 2016. 2.0 gpm average for showerheads and 0.85 gpm for lavatory faucets.
[51] Program standards.
[52] Derived from U.S. Census data for single and multifamily family units combined.
[53] WRF Residential End Uses of Water Study, 2016. Each resident showered 0.7 times per day for 8 minutes, on average.
[54] Derived from WRF Residential End Uses of Water Study, 2016. 2.65 gpf was the national average.
[55] Program standard. MaP testing results, Gauley and Associates, Ltd and Koeller and Company
[56] Derived from U.S. Census data for single family units.
[57] WRF Residential End Uses of Water Study, 2016. Each resident flushed 5.1 times on average per day. Assumes each rebated toilet gets 50% of the daily flushes.
[58] Assumes full occupancy and 10 days away from home per year.
[59] Estimated average based on data collected from commercial indoor audits
[60] Program standard. MaP testing results, Gauley and Associates, Ltd and Koeller and Company
[61] Water Efficiency Management Guide which references Water Research Foundation, Residential End Uses of Water, Version 2, 2016, table 6.7. Assumes 30 employees per day; 100 visitors per day; 2.6 uses per employee per day; and .33 uses per visitor per day. Assumes each toilet receives 10% of total flushes per day.
[62] Assumes typical participant is a business that is open seven days per week with occasional holiday closures.
[63] Based on 10 years of weather station data collected from the USAFA and Fort Carson.
[64] Northern Colorado Water Conservancy District study estimated savings of up to 25%. 5% is assumed to be conservative. Amendments are also proven to improve plant health and increase rooting depth.
[65] Industry standard engineering calculation

Additional Considerations

Cost of Service

The cost of budgeted energy and water conservation programs are recovered through base rates; program-specific accounts are incorporated into the cost of service models. Actual costs are expensed in the year savings are claimed as direct O&M expenses. Appropriate measures are used in determining the persistence of savings in planning and cost-effectiveness calculations. The effects of past DSM and Water Conservation programs are incorporated into subsequent sales and load forecasts through regression.

Auditing

Colorado Springs Utilities will engage the City Auditor every two years to review all programs and procedures. These programs also receive periodic review where assumptions and calculations are tested against actuals (measurement and verification).

Sunsetting DSM Energy Savings Credits

Rebate values consider the measure life of the annualized claimed savings on a program-by-program basis. Savings expire based on the above considerations as applicable.

Sunsetting Water Savings

Each conservation program has an expected measure life after which water savings sunsets. Savings for programs with a measure life of five years, for example, sunset after five years. However, savings from programs with a measure life of twenty or more years never sunset because there is a clear history of efficiency standards continually improving over time (e.g., toilet efficiency standards in Colorado improved from 3.5 to 1.28 gallons per flush over a thirty-year period, which is the expected measure life for toilet replacements). Water-wise Rules has an expected measure life of one year because the rules are designed to influence irrigation behaviors, not irrigation infrastructure. Savings from Water-wise Rules are permanent only if the rules are enforced permanently. If the rules sunset, the savings sunset. All programs are also intended to drive some degree of market transformation allowing market forces to "take over" so that conservation programs can evolve to appropriately address water waste where the market will not.

Free Ridership

DSM Energy incorporates free ridership in the calculation of net estimated savings, as is customary for utility-sponsored energy efficiency programs. For the water utility industry, there is not a customary free ridership methodology for savings calculations. To most accurately determine savings, Water Conservation incorporates free ridership in the cost effectiveness evaluation of programs.

Adoption: DSM Energy and Water Conservation Program Standards and Calculations

Aram Benyamin
Chief Executive Officer

_____ _____
Signature Date

Revision	Signature	Date

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DSM Energy and Water Conservation Program Standards and Calculations

Utilities Board, February 16, 2022

Earl Wilkinson

Water, Compliance and Innovation Officer

Overview

- A complete list of the 2022 DSM Energy and Water Conservation programs
- Each program identifies the standards and calculations to measure the savings or reduction
- Colorado Springs Utilities applies best practices in establishing and measuring standards for calculating savings/reductions for each of our efficiency programs
- These programs also receive periodic review (measurement and verification) where assumptions and calculations are tested against actuals to calibrate

Example Program

Residential Furnace Rebate

Colorado Springs Utilities Residential Gas Furnace Rebate reduces natural gas demand while promoting customer satisfaction. It provides customers a $250 incentive to switch from older, inefficient natural gas furnaces to an EnergyStar furnace.

Savings and Customer Cost Assumptions

Avg Residential Energy Use Intensity (EUI)[3]	Average Home Square Footage[4]	Average Furnace Efficiency	Energy Star Furnace Efficiency[5]
28.6 kBtu/ft²/yr	2299 ft²	80%	95%

Average savings per installed furnace is 11.2 MMBtu per year. Savings are calculated based on annual energy use of the average furnace minus the energy use of the Energy Star furnace. Each furnace energy use is calculated from the EUI, home square footage, and furnace efficiency.

Request of Utilities Board

- Adoption of the DSM Energy and Water Conservation Program Standards and Calculations

- A similar request will be made each year for these programs to be adopted


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Date: February 16, 2022

To: Utilities Board

From: Aram Benyamin, Chief Executive Officer

Subject: **Electric System – Overhead and Underground**

Desired Action: Discussion

Previous Board Communications/Discussion: None

Executive Summary: Colorado Springs Utilities will provide an overview to the Utilities Board regarding our electric system overhead and underground construction: background, history and current practices for distribution and transmission.

Background Information: Colorado Springs Utilities maintains over 3,600 miles of electric distribution infrastructure and 238 miles of transmission infrastructure. 77% of the distribution system miles and 11% of our transmission system miles are installed underground.

Today, all new utility electric distribution is installed underground. Existing overhead facilities are not required to be undergrounded even when being rebuilt or modified. The transmission system is typically installed overhead with no ordinance or policy requirement to underground these lines.

Colorado Springs Utilities has existing programs that provide a mechanism to underground existing overhead lines. The System Improvement Program and Utilities Reliability Program (URP) address undergrounding larger portions of the overhead system. For small undergrounding requests, we will underground segments at customers' expense.

Options: None

Recommendations: None

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Electric System – Overhead and Underground

Sarah LaBarre, System Planning and Projects General Manager
Joe Awad, System Planning and Projects Officer

February 16, 2022

Agenda

1. Transmission lines
2. Distribution lines
3. Evolution of underground distribution lines
4. Underground vs overhead
5. Conversion programs and costs
6. Discussion

Transmission lines

- Carry large voltages of electricity from power plants to substations
  - 115kV and above
- 238 miles in our system
  - 89% overhead

Distribution lines

- Deliver electricity from substations to homes and businesses
- More than 3,600 miles in our system
  - About 77% underground

Electric masts

- A mast is how customers receive power if served by an overhead distribution line.
- Located outside on roof or near meter.
- Resembles a metal pipe or tube.

Neighborhood with underground lines

Underground examples

Underground examples

Underground examples

Underground examples

Underground examples

Underground examples

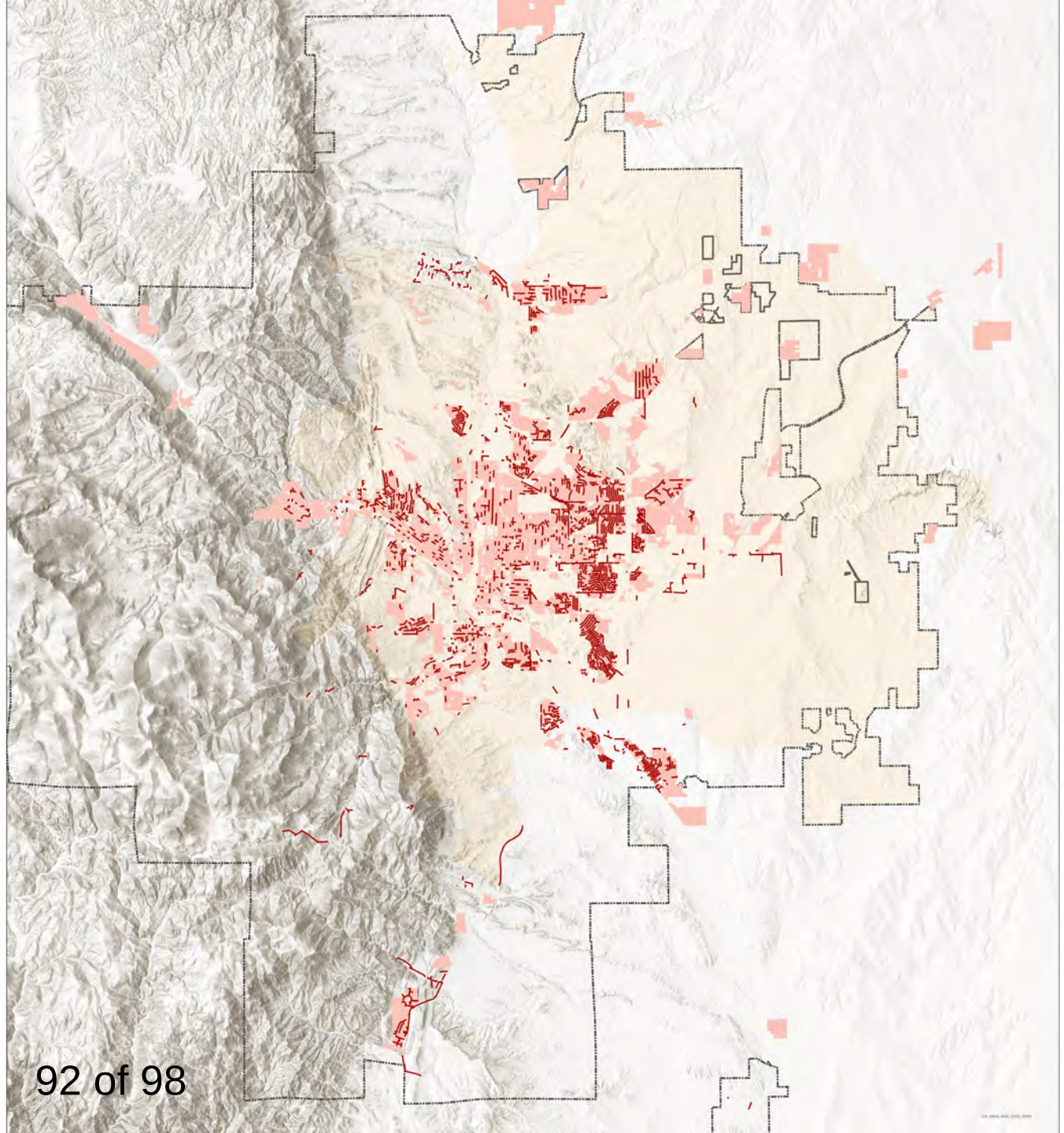
Overhead examples

Overhead examples

91 of 98

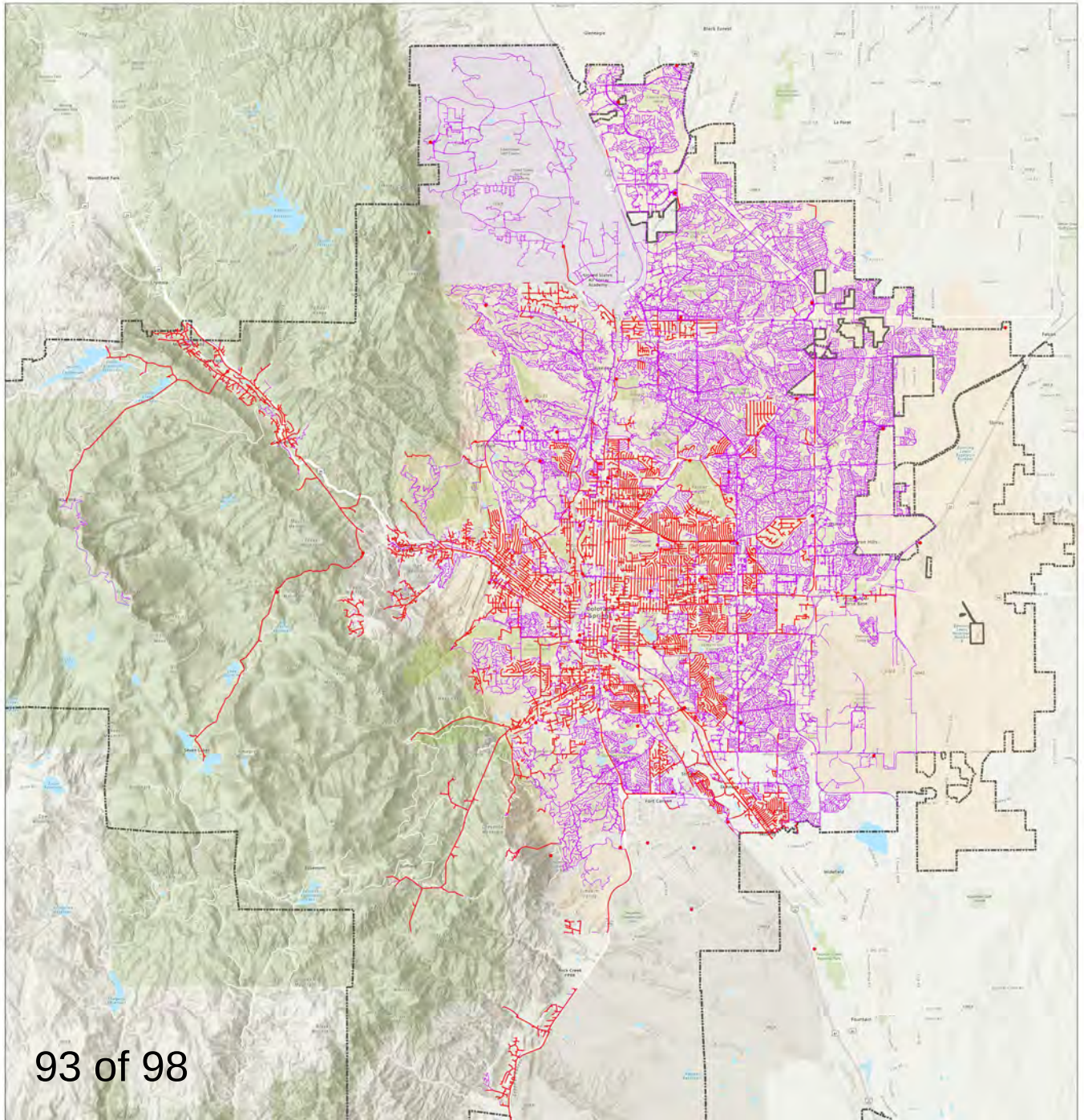
Evolution of underground distribution

Pre 1960s Subdivisions



Evolution of underground distribution

Current overhead and underground installations



System reliability comparison

- Overhead contributes 51% of outages
- Underground contributes 49% of outages

Overhead lines

Pros

- Lower cost. Less expensive way to get power to home and less expensive to repair and upgrade.
- Quicker construction. No need to trench.
- Easier to spot damage and faults.
- Built anywhere.

Cons

- More susceptible to bad weather, like high winds.
- More vulnerable to damage from trees and vegetation.
- Vulnerable to blinks when animals/branches contact lines.
- Susceptible to damage from vehicle collisions.
- Less attractive.

Underground lines

Pros

- Not vulnerable to damage from tree branches.
- Not impacted by wind.
- Less vulnerable to blinks when animals/branches contact lines.
- Less visually obtrusive.

Cons

- More expensive to build and repair.
- Longer time to repair.
- Susceptible to flooding.
- Difficult to locate faults.
- Can be vulnerable to dig-ins from above.
- Built in Right of Way that may be congested.
- Susceptible to damage from vehicle collisions.

Conversion programs and costs

Programs

- System Improvement Program for Distribution and Transmission
  - Cost sharing agreement with developers
- Utilities Reliability Program
  - Four service comprehensive system betterment
- Customer request
  - Customer covers all expenses
  - Requires updates to meter and possibly wiring in home/business

Costs

- Overall costs to bury remaining distribution lines $2.2 billion
- Customer costs for service line conversion

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