

This presentation premiered at WaterSmart Innovations

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Water Shortage Response Planning

A Recipe for Resiliency

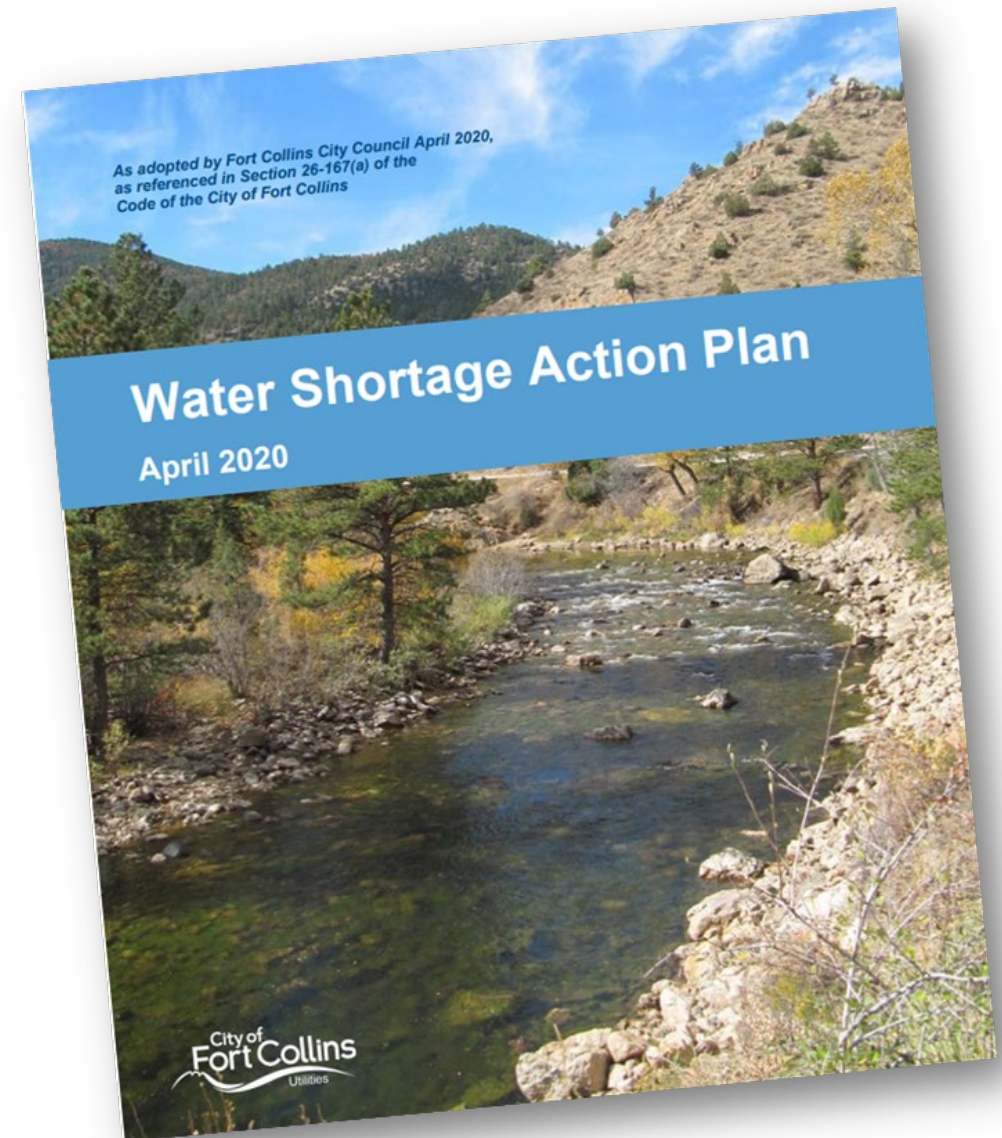
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Las Vegas, NV

Key Ingredients

- Groups to Engage
- Getting Input
- Phasing the Process
- Elements of a Plan
- Helpful Resources
- Results – Putting the Plan to the Test
- Pitfalls to Avoid



Definition

A lack of projected water availability to meet projected demand

Causes

- Drought
- Water Quality
- Infrastructure Issues



A wide-angle photograph of a dried-up reservoir. The foreground shows a large, exposed area of reddish-brown earth and sand, with a small, irregular pool of water reflecting the sky. In the background, there are rolling hills covered in dry, yellowish-brown vegetation under a cloudy sky.

Have a plan!

- Water restrictions
- Increase rates
- Additional supply
- Lower individual water budgets

Cache la Poudre River



Horsetooth Reservoir



Colorado-Big Thompson Water

Average Annual Precipitation: 16 inches



Map source: Netstate.com

Water by the Numbers (2020)



136,000 people
(75% of population)



33,000 residential
accounts



3,00 commercial
accounts



Average 22.8 million
gallons per day (MGD)



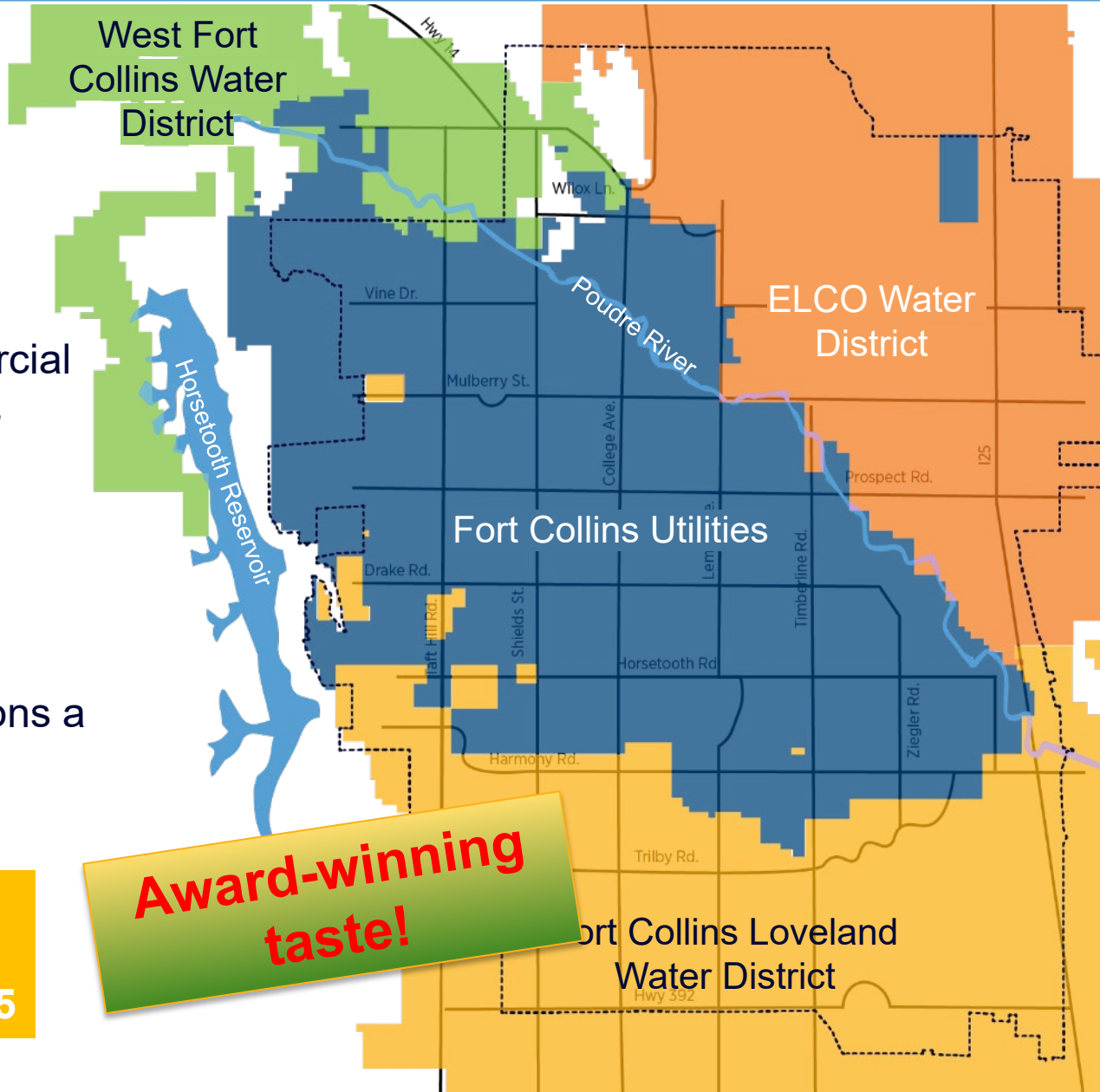
15-40 MGD range



8.3 billion gallons a
year

Irrigation is 60% of summer use

RESIDENTIAL
Total GPCD: 76
Indoor GPCD: 45



**Award-winning
taste!**



Share & Remind

about water shortage
response



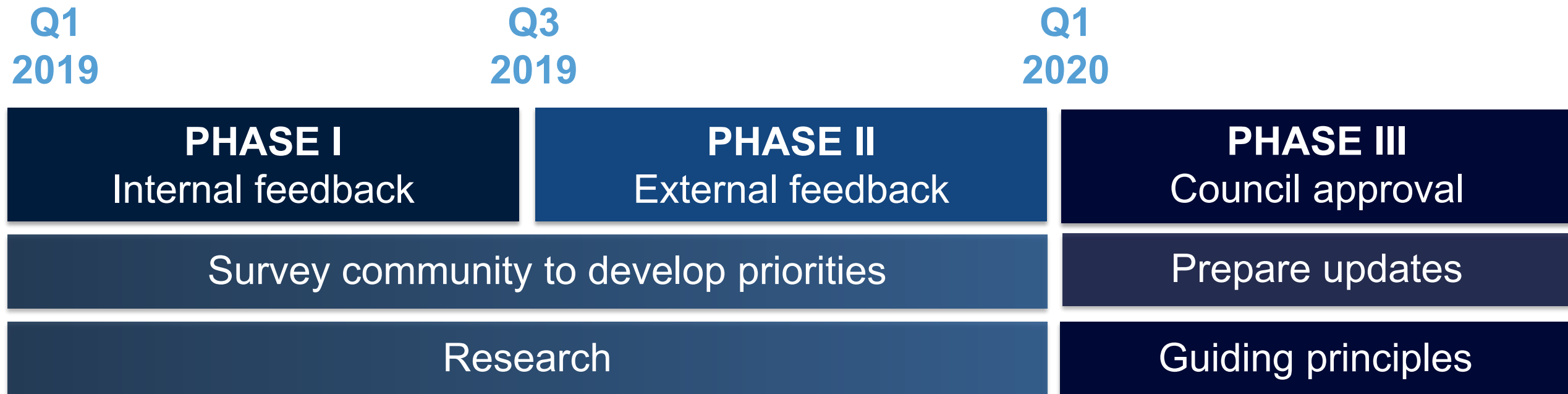
Identify

beneficial changes &
new opportunities



Prepare

for future shortage





65 meetings
reaching 800 people



Source:
collegian.com



**1,300 survey
responses**
+ polling data and
other feedback



Internal to the Organization

- City Boards and Commissions (66 members engaged)
- Staff (363 staff engaged)
 - City Managers
 - Utilities
 - **Parks**
 - Golf
 - Forestry
 - Sustainability Services (social, economic and environmental)
 - Emergency Preparedness
 - **Planning and Development**
 - Neighborhood Services and Code Compliance
 - Transportation/**Operational Services**
 - Natural Areas

External to the Organization

- Stakeholder groups (369 individuals engaged)
 - Colorado State University
 - **Nearby communities and water providers**
 - Key Accounts
 - **Green industry**
 - **Breweries**
 - Car washes
 - Property managers
 - Fire Authority
 - Chamber of Commerce and other business associations
 - Poudre School district

Stakeholders

Focus groups and presentations

General Public

(*also in Spanish)

- Events
- Emails*
- Surveys
- Websites*
- Newsletters
- Polling*
- Social media
- Postcard*
- Etc.

A graphic for the City of Fort Collins Utilities Water Shortage Response Planning. It features a background image of a dry, reddish-brown landscape with sparse vegetation and a small body of water in the foreground. The City of Fort Collins Utilities logo is in the upper left, and the title "WATER SHORTAGE RESPONSE PLANNING" is in large white letters across the middle.

City of Fort Collins Utilities
WATER SHORTAGE RESPONSE PLANNING

Have you ever wondered what would happen if Fort Collins had water shortage? A water shortage is anytime there is not enough water supply to meet the water demand (need). In most cases, it's caused by a drought, but it also could be due to infrastructure failures or source water quality issues.

To guide how the City of Fort Collins responds to water shortages, Fort Collins Utilities historically has used the *Water Supply Shortage Response Plan (WSSRP)*. This plan includes different levels of water restrictions and other efficiency measures.

Since 2018, Utilities has been reviewing and updating the *WSSRP* by seeking input from various City departments and community members. The updates and revisions will be incorporated into the new *Water Shortage Action Plan*, which replaces the *WSSRP*. The new plan will be presented to City Council in March.

Review the proposed changes and let us know how you want to be informed about this plan at fcgov.com/WSFeedback.



Priority Rank	Water Use Type	Votes
1	Indoor Home	99%
2	Health and Safety	94%
3	Indoor Business	77%
4	Other Landscaped Areas (not grass)	53%
5	Commercial/Public Recreation	40%
6	Grass	14%
7	Personal/Private Recreation	9%



- **Guiding principles**
- **Restriction/action table**
- Other response strategies
- Water shortage indicators/modeling
- Declaration process
- **Implementation and monitoring**
- **Exception permits**
- **Enforcement**
- Plan updates

Appendices

- Communication plan
- Relation to other plans and policies
- Historical shortage planning/events
- Profile of existing system
- Supply vulnerability assessment





- Restrict less essential uses first, avoid restrictions on more essential uses
- Minimize adverse economic impacts
- Protect public and community activities
- Implement extensive public information/media relations program
- Avoid irretrievable loss of vegetation
- Explore alternative water supply options
- Collaborate regionally and with other water service providers

OLD

	Response Level 1	Response Level 2	Response Level 3	Response Level 4
Water Supply				
Projected water supply shortage as determined by the City Manager	1-10%	11-20%	21-30%	Greater than 30%

NEW

Action Level	Water Shortage Watch - Voluntary	I - Low	II - Medium	III - High	IV - Alternative
% Projected Water Shortage	Potential shortage	1-15%	16-25%	26-35%	Unique and extreme water shortages not adequately or appropriately addressed by Water Shortage

Water Shortage Action Committee

Supply and demand modeling

Water dashboard (internal)



Water Supply/Demand, Water Quality, and Wildfire Recovery Status Dashboard

This dashboard provides City of Fort Collins staff a central repository for updates, current data, information, and resources related to source water supplies and wildfire impacts and recovery. Utilities and our partners are moving ahead with recovery efforts for the Cameron Peak Fire that heavily affected our source watershed. Snow pack and runoff will certainly be something we keep a close eye on in regards to water quality, water supply, and possible water restrictions.



Additional Information



Types

- Medical/physical hardship
- Religious objection
- Active lawns
- Large (4 acres or greater) and inactive City park areas
- Raw water registration
- New sod and seed

Signs must be displayed
and visible.



Methods

- Active patrolling and violation identification
 - Partnership with Code Compliance
- **Remote monitoring using AMI**
- Complaint-based enforcement

Identify and contact using WaterSmart or other software

Citation and fines possible, but focus is on education

WATER RESTRICTIONS IN EFFECT

**Every Drop Counts:
Working Together to Save Water**

Outdoor water use restrictions are in effect for all Fort Collins Utilities water customers. Mandatory water restrictions are necessary to manage water availability and delivery during projected water shortages.

For a full list of restrictions, visit fcgov.com/water-restrictions.

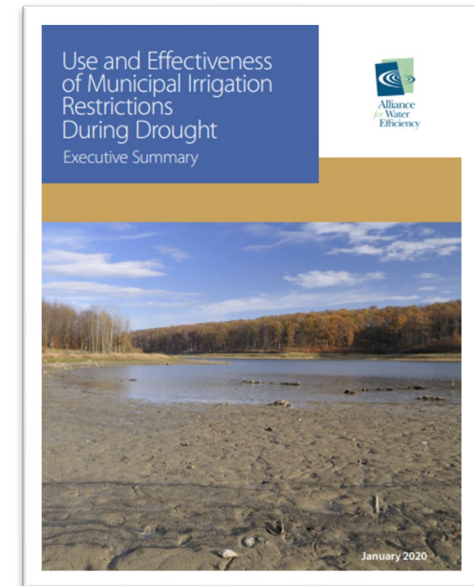
Limited exceptions may be granted by permit. Visit fcgov.com/water-permits to learn more and apply.

Remember, small changes can make a big difference.

Use and Effectiveness of Municipal Irrigation Restrictions During Drought, Alliance for Water Efficiency (2020)

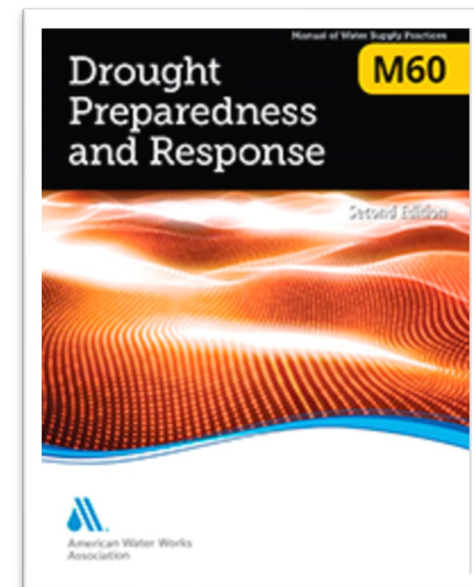
M60 Drought Preparedness and Response 2nd Edition, American Water Works Association (2019)

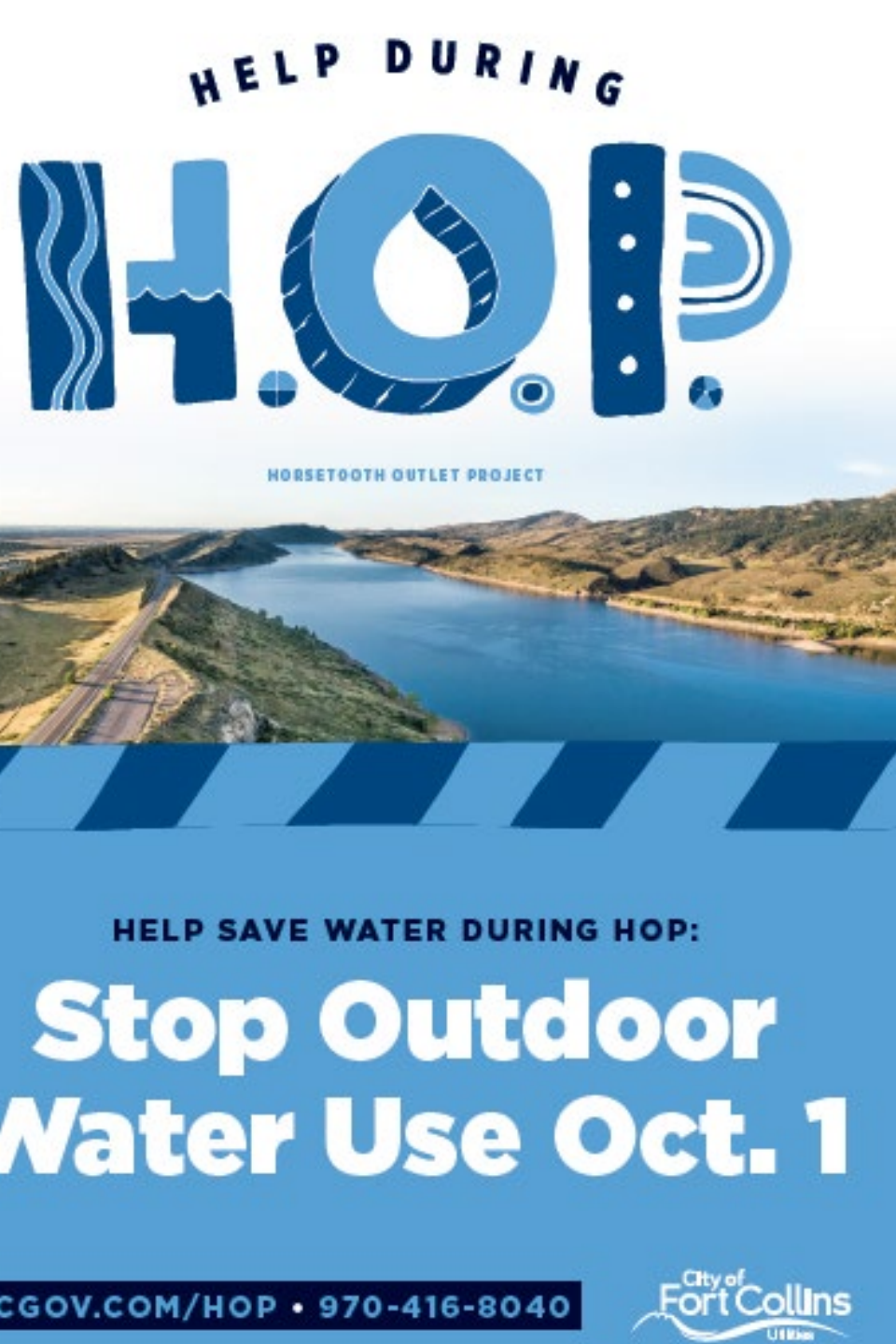
Colorado state website <https://cwcb.colorado.gov/drought-assistance>



Kenney, D., R. Klein and M. Clark, 2004. *Use and Effectiveness of Municipal Water Restrictions During Drought in Colorado*. Journal of American Water Resources Association, Feb. 77-87.

Other studies on rate increases during droughts and others available for AWE and AWWA members





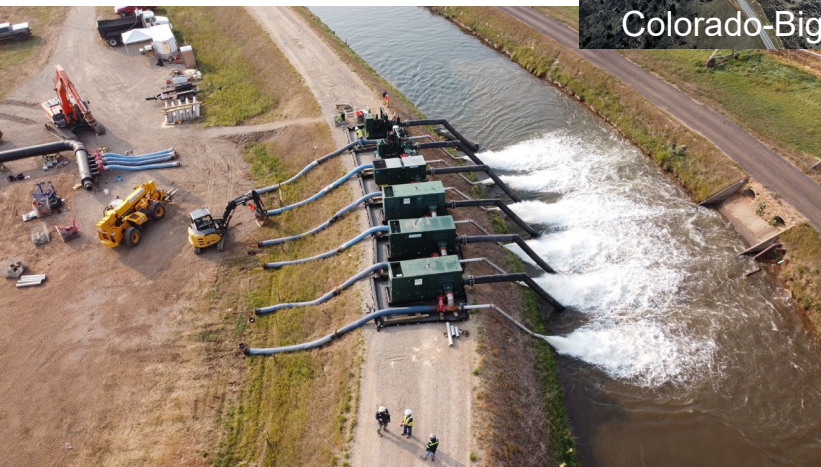
Results - 2020 Water Restrictions

Horsetooth Outlet Project, Wildfire, and Drought

Horsetooth Reservoir



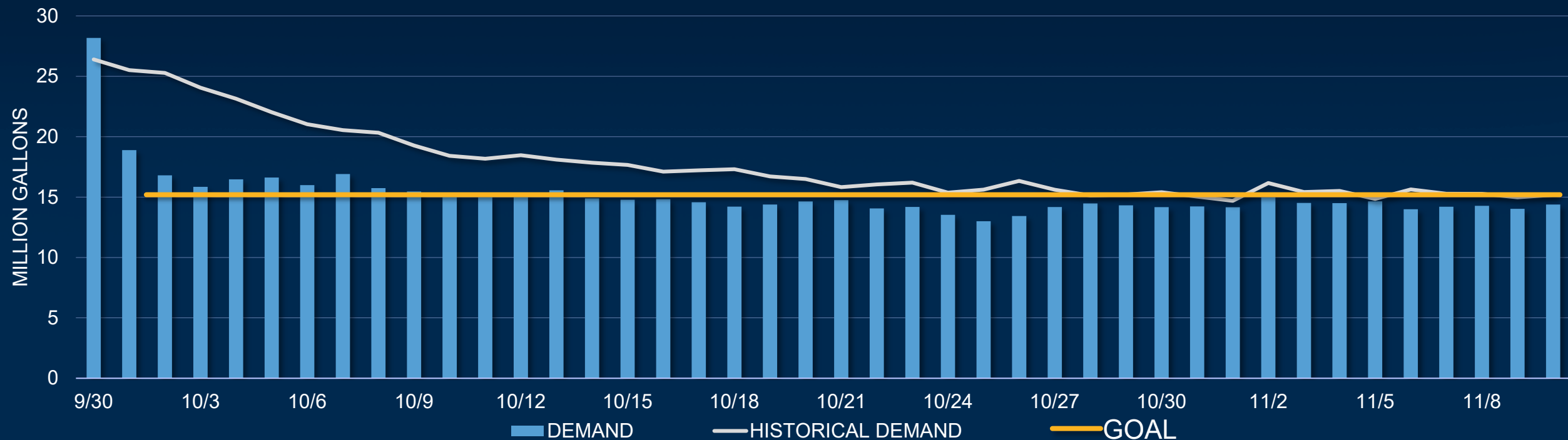
Colorado-Big Thompson Water



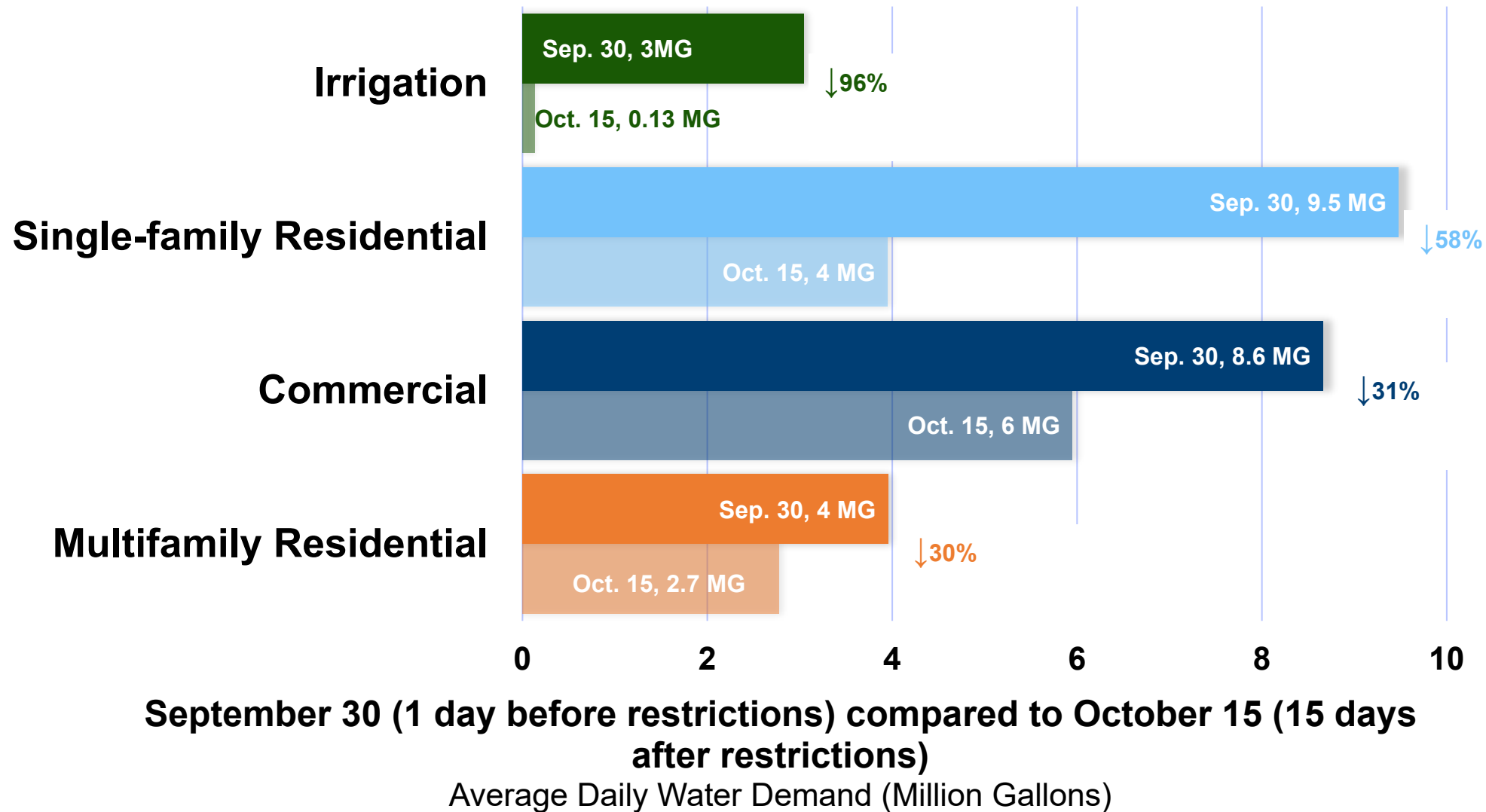
Cache la Poudre River



Fort Collins Utilities Daily Water Demand – 2020 Water Restrictions



- Duration: Oct. 1 – Nov. 9
- 105 MG reduced
- 1,850 staff hours (water conservation only)
- \$70,000 in outreach (\$0.51 per capita)
- 181 Permits and raw water registrations
- 91% compliance on Oct. 1
- 40 possible violations investigated
- 328 emails and 68 voicemails responded to



- Use voluntary, water shortage watch carefully or spell out when it can be used
- Have bylaws or some other formal decision-making policy for Committee
- Pick the right decision maker to declare a shortage
 - Executive Director, City Manager or Council?
- Ensure water restrictions don't conflict with HOA agreements
- Consider staffing and budget in the plan
 - How will priorities shift and funding be acquired?
- Restricted use challenges
 - Impacts to businesses (ex: power-washing company)
- Regional messaging confusion
- Consider abnormal shortages
 - More than just drought
 - Fall or spring shortages, when outdoor use is less
 - Major shortages that are greater than outdoor use



THANK YOU!

For More Information:

fcgov.com/WSAP

For Questions or Comments, Please Contact:

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