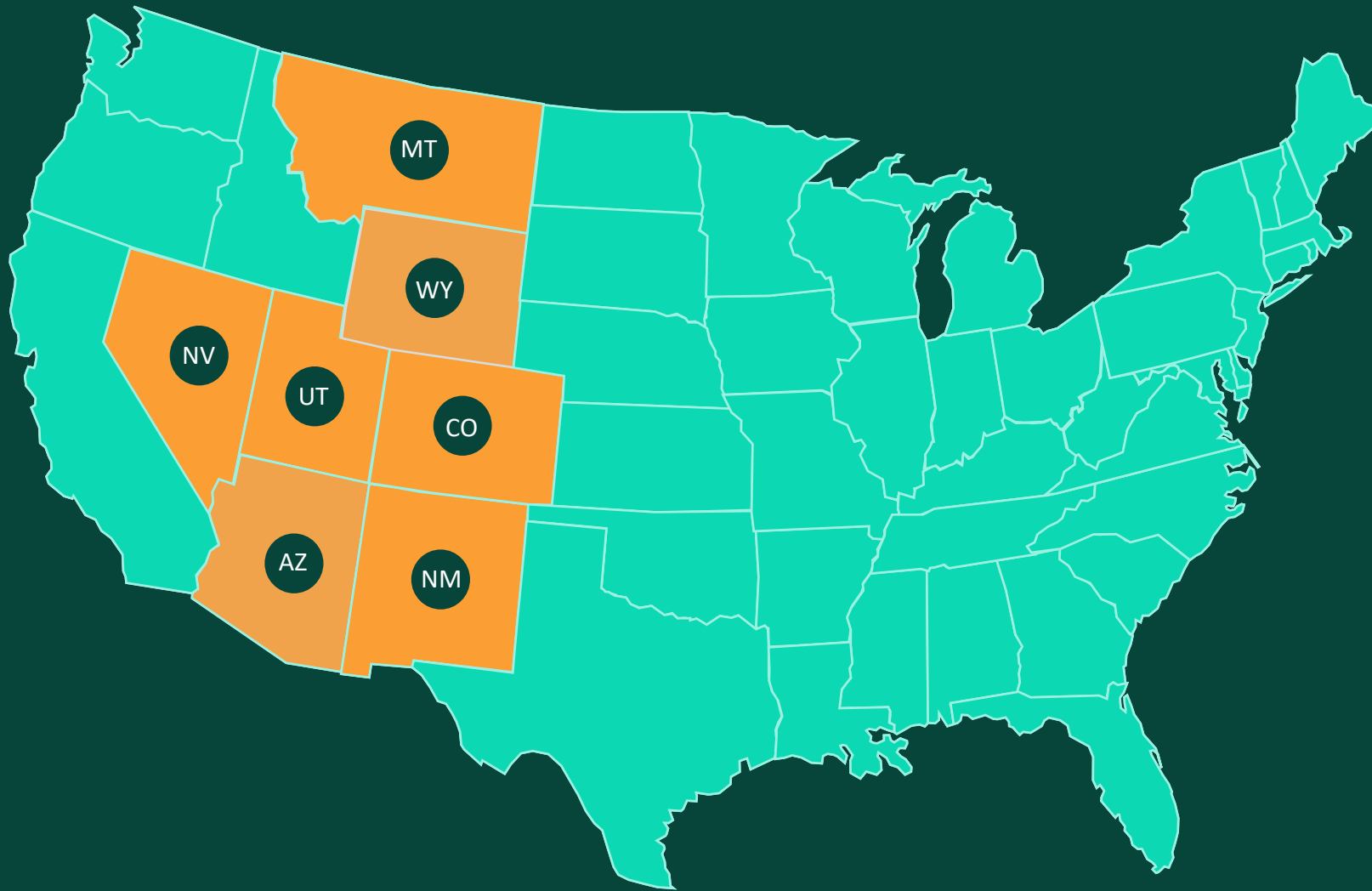




Transforming Water Intensive Landscapes

Case Studies on Innovative Local Policies & Programs

June 26th, 2023



Western Resource Advocates

- Federal & Regional Collaboration
- State Legislatures
- State Agencies & Commissions
- Local Governments
- Electric Utilities
- Diverse Coalitions & Communities

WRA works across seven states in the **Interior West** to
protect our climate, land, air, and water.



Water conservation is our **cheapest, fastest, and most reliable** way to stretch our water supplies

Nearly 50% of municipal water supplies in Colorado are used outdoors, mostly irrigating **high water use turfgrass**

Replacing or limiting **non-functional turf** is one of our most impactful conservation opportunities



Turf Replacement Programs

- 33 (*and counting!*) municipalities & water providers offering incentives
- ~\$1.3M spent on incentives in 2022
- Resource Central partnership
- Residential & Commercial
- \$1-\$2 per sq ft rebates
- Programs save 1-2 AF/acre/year
- Programs regularly run out of funding



Statewide Turf Replacement Funding Program

Turf Replacement Program

The first application cycle of the Turf Replacement Program closed on March 31, 2023, and submitted applications will be reviewed and processed during the month of April. The second cycle is expected to have limited funds and will open on July 1, 2023, and close on August 31st.

Only eligible entities can apply for funds. Eligible entities are limited to:



Timeline

-  **JAN 25, 2023**
1st Funding Cycle Opens Through March 31, 2023
-  **MARCH 31, 2023**
First funding cycle intake period closes.
-  **APRIL - JUNE, 2023**
Application review, follow-up and contracting if qualified.



wra

“Introduce a program to reduce the quantity of **non-functional turf grass by 30%** through replacement with drought- and climate-resilient landscaping...”

Colorado River Basin Municipal MOU Aug 2022



Non-functional Turf Limits in Colorado

11 out of 31
municipalities with
turf replacement
programs have
established turf
limits for new
development

The logo for Western Resource Advocates (wra) is located in the bottom right corner. It consists of the lowercase letters "wra" in a bold, white, sans-serif font, centered within an orange circle.

Today's Speakers

Tim York

**Water Conservation
Manager**



Ruth Quade

**Water Conservation
Administrator**



Laura Wing
**Water Resources
Administrator**



Transforming Water Intensive Landscapes

Tim York
Water Conservation Manager

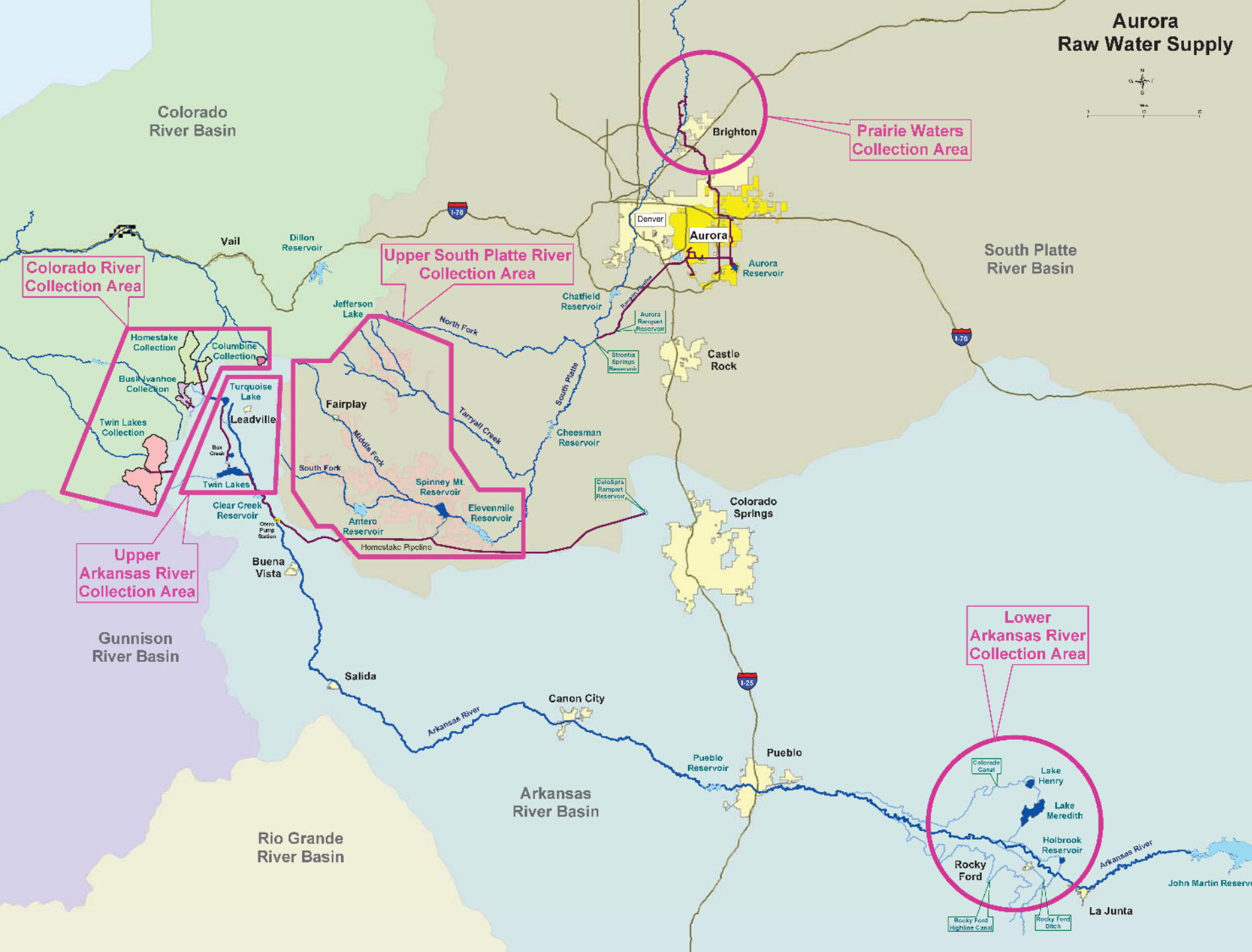


#1 in Customer Satisfaction with Midsize Water Utilities in the West

For J.D. Power 2021 award information, visit [jdpower.com/awards](https://www.jdpower.com/awards)



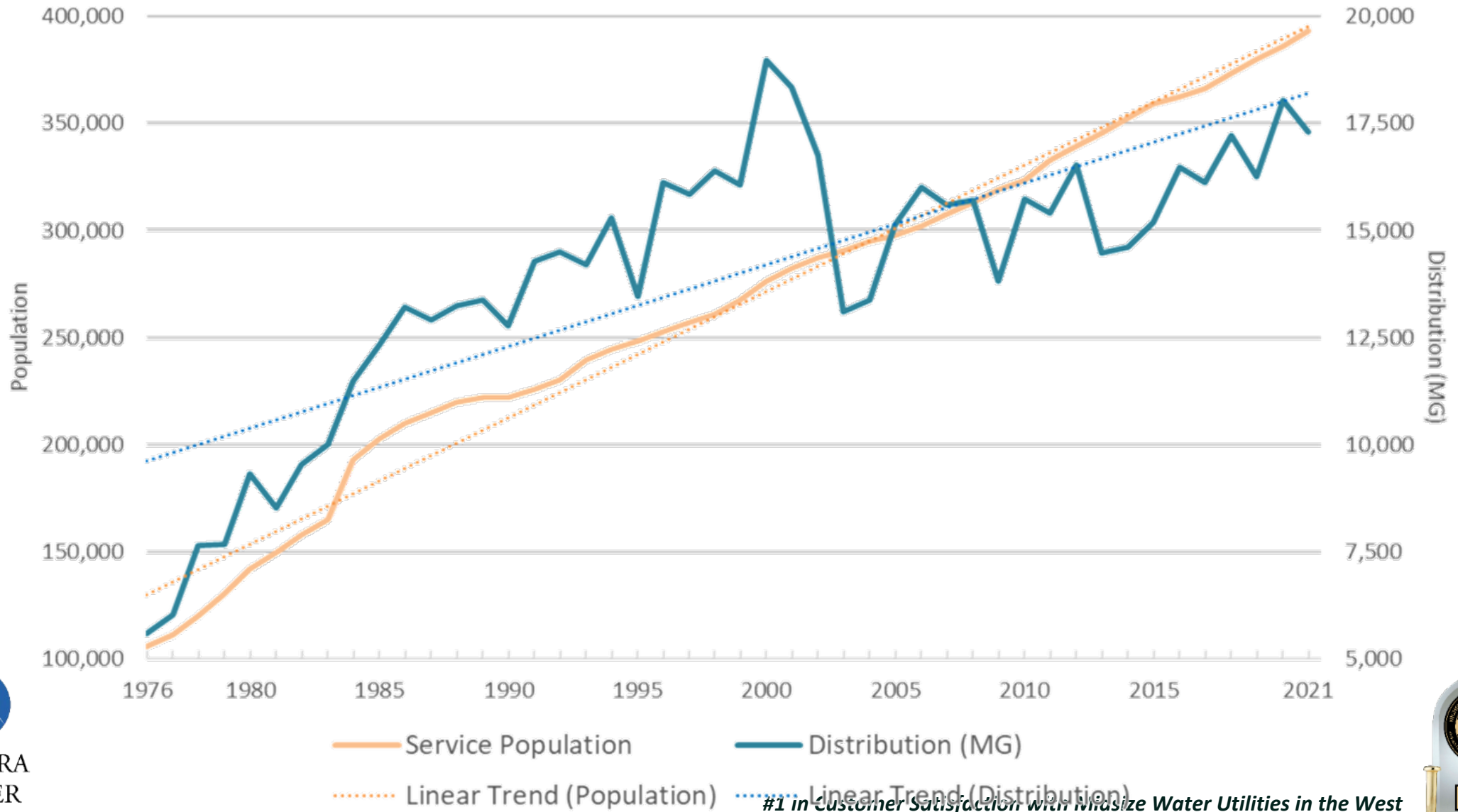
Where does Aurora's water come from?



- 25% Colorado River Basin
- 25% Arkansas River Basin
- 50% S. Platte River Basin
- 12 reservoirs across the state
- Water can travel up to 180 miles

For more information, visit jupower.com/aurora

Population and Distribution: 1976-2021

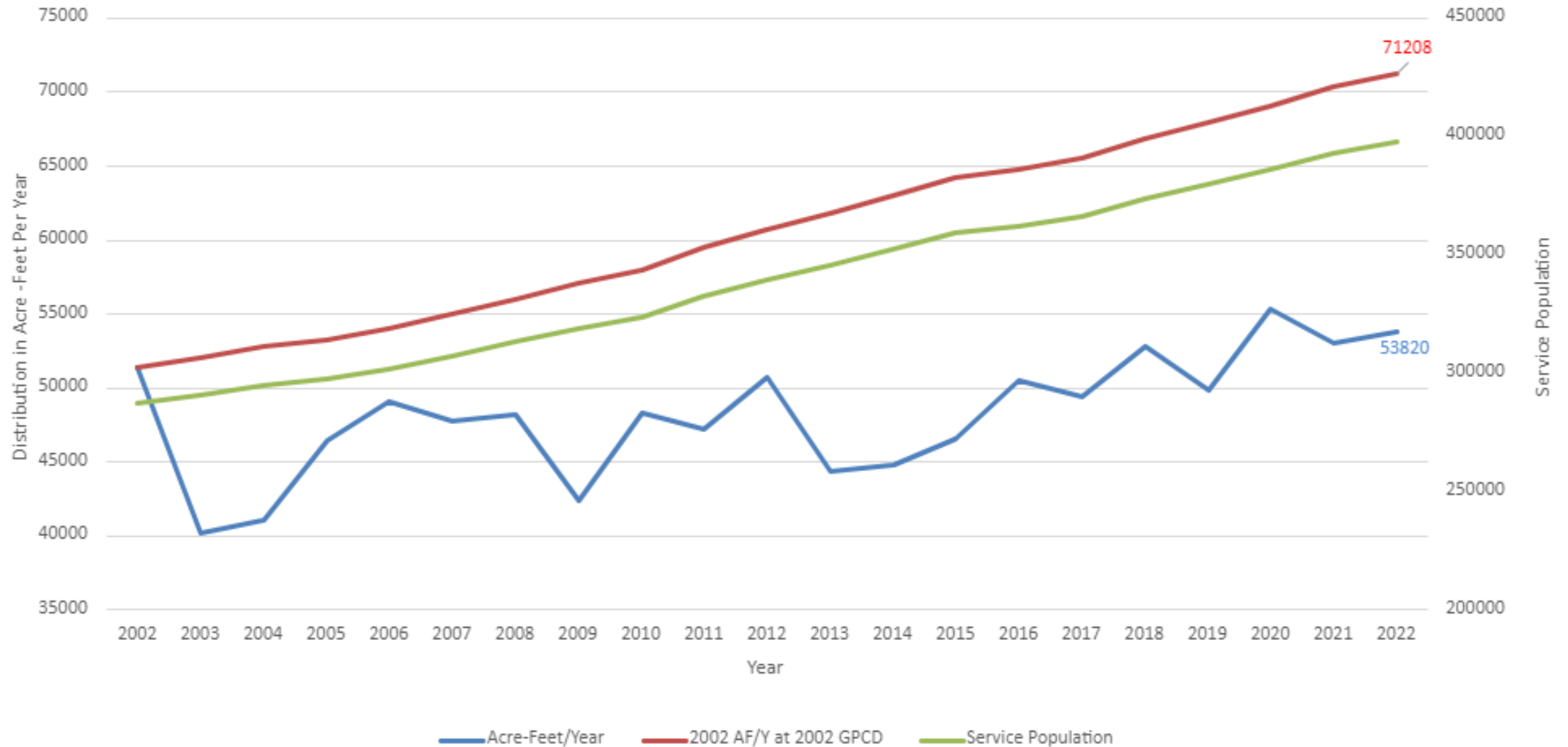


#1 in Customer Satisfaction with Midsized Water Utilities in the West

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Distribution Scenarios in Acre-Feet Per Year



Conservation Programs

- AMI Leak Notification and Investigations
- Code/Ordinance Development
- Commercial Washer Rebates
- Community Gardens
- Conservation Education
- Dreamscape Giveaway – New 2021
- Greatscapes – Income Qualified Landscape
- High Use Outreach and Investigations
- Indoor Water Assessments
- Irrigation and Soil Inspections
- Irrigation High-Efficiency Component Rebates
- Irrigation Plans Review
- Know Your Flow
- Large Property Watering Variance Program
- Low-income Water Efficiency Program
- Outdoor Water Assessments
- Smart Irrigation Controller Rebates
- Ultra-high Efficiency Toilet Rebates
- Water Management Plan Enforcement
- Water-wise Landscape Designs
- Water-wise Garden
- Water-wise Landscape Rebates
- Water-wise Neighbors – New 2021
- Z-zone Program

** Programs in BLUE are outdoor use focused or inclusive*



Incentives/Rebates

- Grass Replacement Incentive Program
- Weather Based Irrigation Controllers
- High-Efficiency Irrigation Components
- Toilets
- Income Qualified; Greatscapes and LIWEP
- Xeric Front Yard Incentive for New Development



#1 in Customer Satisfaction with Midsize Water Utilities in the West

For J.D. Power 2021 award information, visit [jdpower.com/awards](https://www.jdpower.com/awards)



The Challenge

Create a conservation ordinance for new development that makes a significant difference in water sustainability.



#1 in Customer Satisfaction with Midsize Water Utilities in the West

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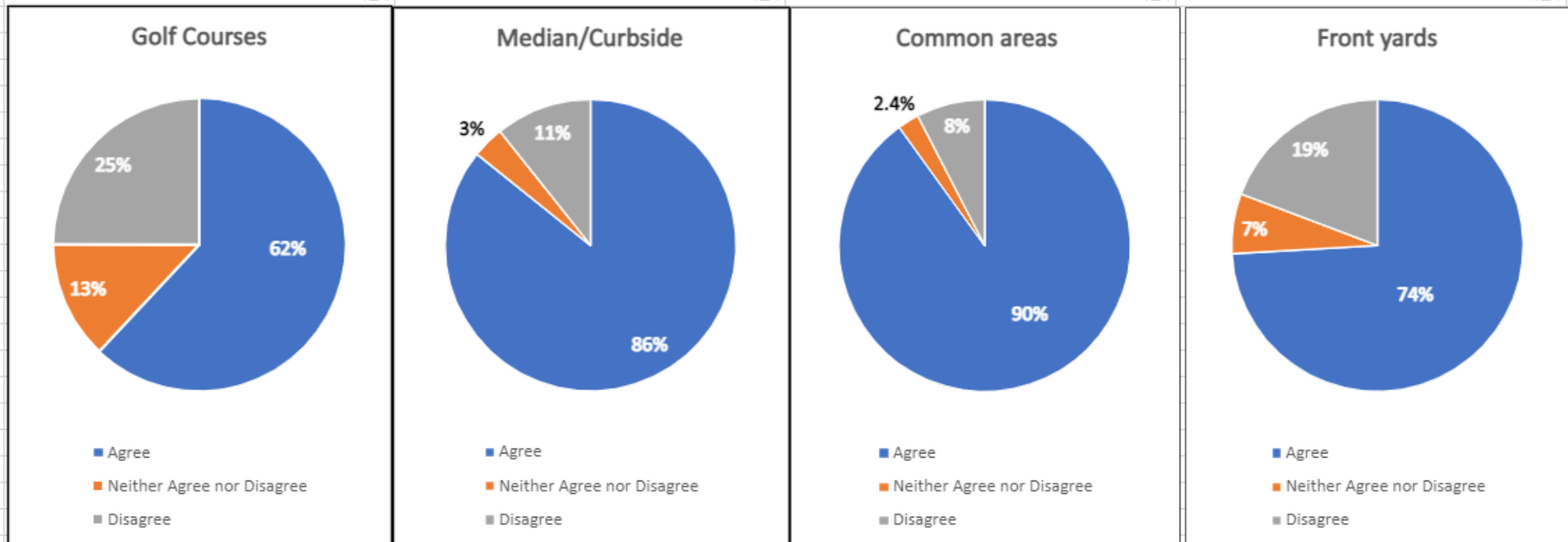


#1 in Customer Satisfaction with Midsize Water Utilities in the West

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	Golf Courses	Turf in medians and curbside landscape	Common areas (aesthetic turf in areas not used for recreation) in new development	Front yards (new development)
Agree	261	361	379	312
Neither Agree nor Disagree	55	15	10	28
Disagree	105	45	32	81
Checksum	421	421	421	421



#1 in Customer Satisfaction with Midsize Water Utilities in the West

For J.D. Power 2021 award information, visit [jdpower.com/awards](https://www.jdpower.com/awards)



Elimination Of

Turf in residential front yards

Turf in curbside landscape areas

Turf in medians

Perimeter & Commercial landscape not
designed as active recreation space

New Golf Courses

Preservation Of

Defined parks spaces per PROS D&DC Manual

Multi-family active/recreation spaces

Schools active/recreation spaces

Turf in backyards. 45%, max of 500 s.f.

Commercial active/recreation spaces

Exemptions

- Exemptions
 - Developments with Site Plans approved prior to January 1, 2023 are exempt.
 - To create consistency within a development where an area with site plans approved before January 1 are adjacent to an area approved after January 1, the General Manager of Aurora Water and Director of Planning may approve an exemption.



#1 in Customer Satisfaction with Midsize Water Utilities in the West

For J.D. Power 2021 award information, visit [jdpower.com/awards](https://www.jdpower.com/awards)



Exemptions

- Backyards
 - Turf allowed at the lesser of 45% or 500 square feet.
- Alley Load
 - In alley load products where backyard size prohibits the use of turf, turf may be installed in the front yard but shall not exceed the lesser of 45% or 500 square feet.



#1 in Customer Satisfaction with Midsize Water Utilities in the West

For J.D. Power 2021 award information, visit [jdpower.com/awards](https://www.jdpower.com/awards)



From this





To this

City of Thornton

Transforming Water Intensive Landscapes



Laura Wing, Senior Water Resources Administrator

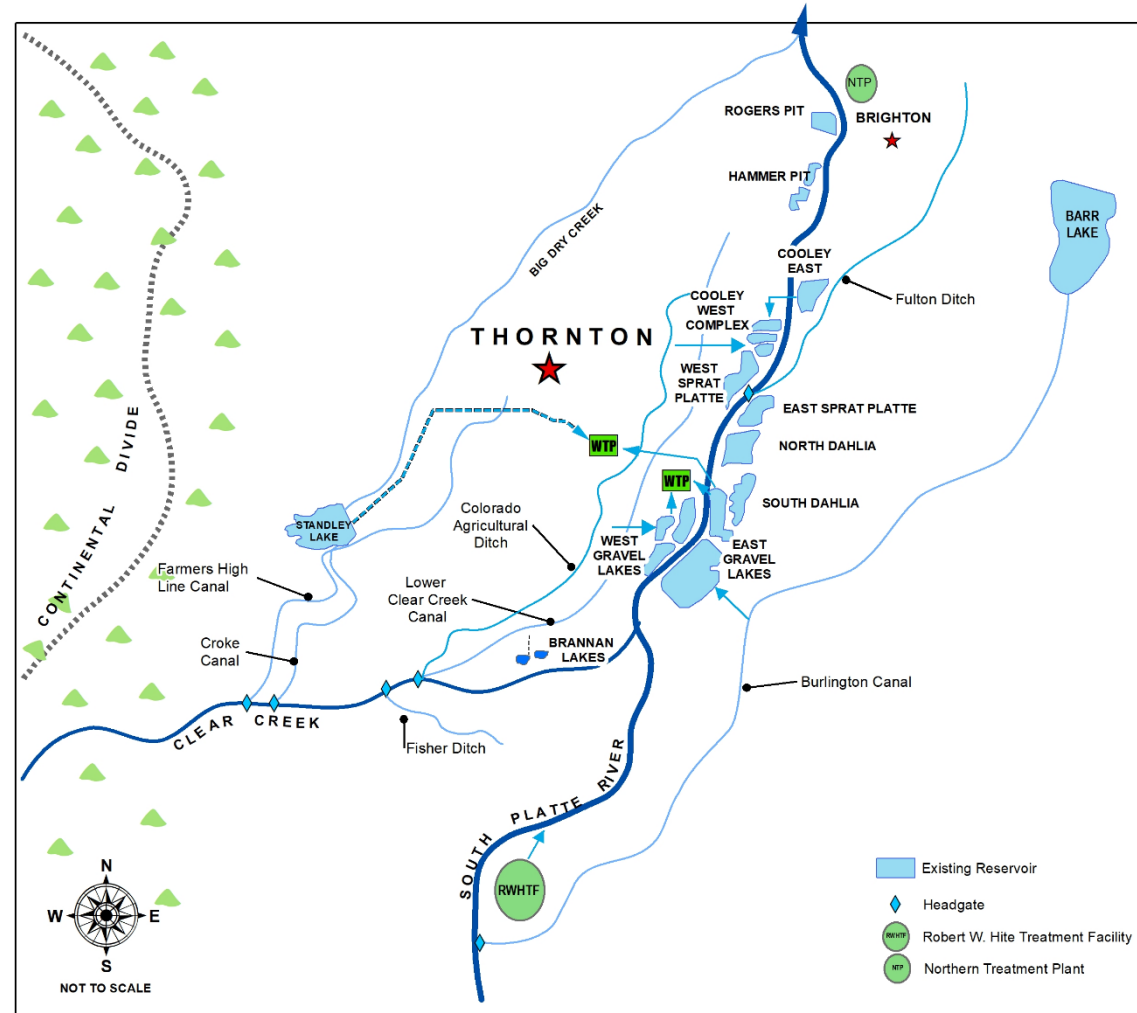
WITHOUT WATER *life would be* **PRETTY DRY**

THORNTONWATER.COM



Thornton's Water System

- Population served: 165,000
- Water Service Area: 39 sq. miles
- Clear Creek and South Platte River sources
- 18 reservoirs
- 2 drinking water treatment plants
- 623 miles of water mains
- 42,000 water meters
- 8.2 billion gallons/year produced



Permanent Water Use Rules

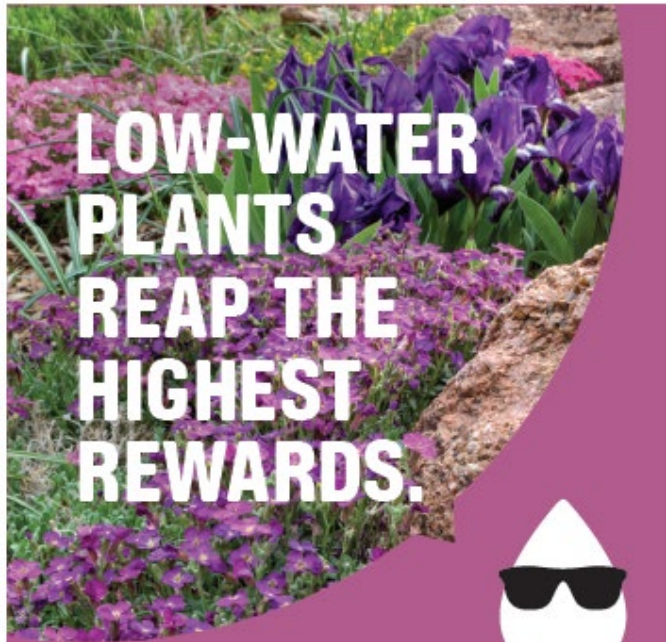
- Lawn irrigation: No more than 3 days/week, not between 10 a.m. and 6 p.m.
- Water waste and plumbing/irrigation leaks must be fixed asap.

Drought Response


- Drought Watch: Public Education
- Stage 1: 10 – 45% demand reduction
- Stage 2: >45% demand reduction
- Stage 3: Rationing

<https://www.thorntonwater.com/restrictions-drought/>



Raising Awareness and Changing Behaviors



**LOW-WATER
PLANTS
REAP THE
HIGHEST
REWARDS.**



Easy maintenance. Gorgeous options. Rebates available!
Go to ThorntonWater.com/rebates

WITHOUT WATER *life would be* PRETTY DRY |  | 



**IRRIGATING
DOESN'T
HAVE TO BE
IRRITATING.**



Home sprinkler consultations available! Schedule at ThorntonWater.com

WITHOUT WATER *life would be* PRETTY DRY |  | 



**NEVER
WATER IN
THE RAIN
AGAIN.**



Install a smart irrigation controller and get a rebate.
ThorntonWater.com

WITHOUT WATER *life would be* PRETTY DRY |  | 

Water-Wise Landscape Incentive Programs

- Residential Landscape Rebate: \$2 per square foot, up to \$2,000
- Discounted Lawn Removal Service: \$1 per square foot, up to \$500
- Garden in a Box discount
- Large Property Landscape Grant: 50% of project cost, up to \$10K/acre, max. 5 acres
- Smart Irrigation Controller Rebate



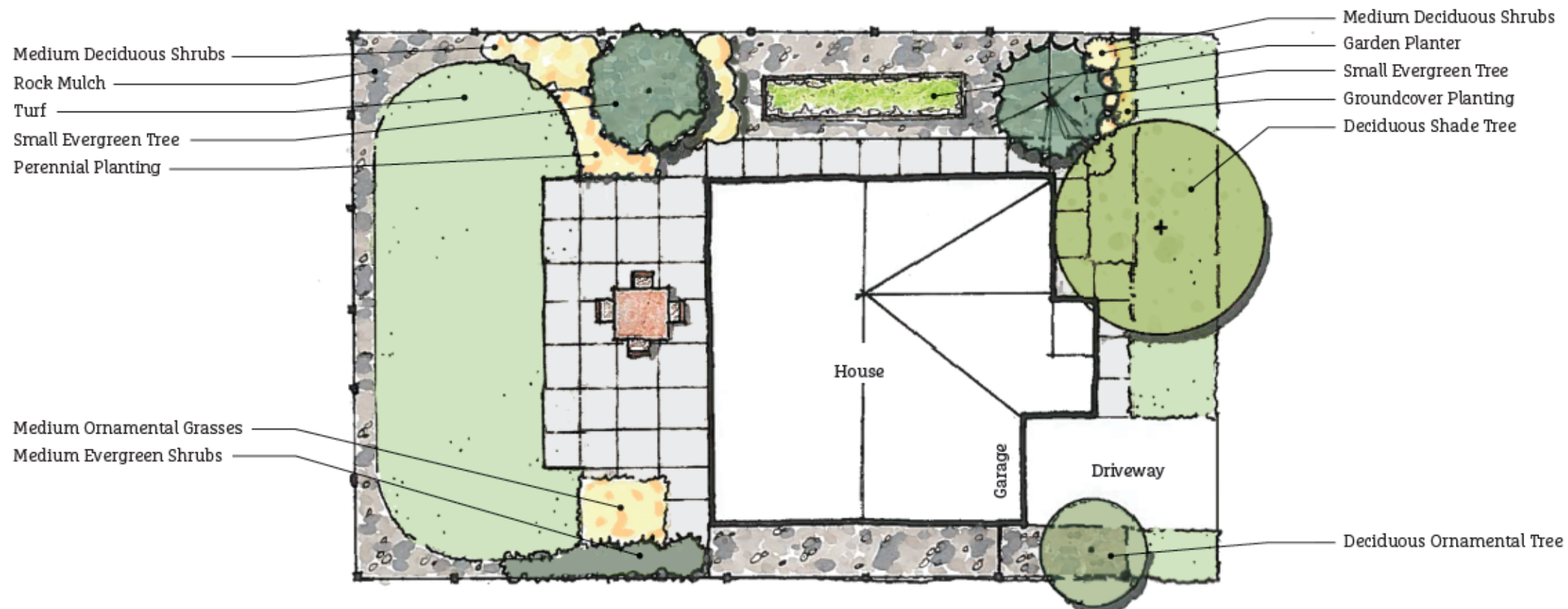
4,000 Sq. Ft. Option A (overhead view)

Monthly Landscape Water Requirement* - 6,375 gal/month

**Based on peak watering month*



Lot Size	4,000 sq. ft.
Turf Area	1,100 sq. ft.
Groundcover Area	480 sq. ft.
July Water Budget	6,375 sq. ft.
Annual Water Budget	29,475 gal.



Naturally Thornton

- Thornton manages over 600 acres of irrigated parks
- Transitioning non-functional turf areas to Colorado-friendly water-wise landscapes and grasses
- Currently transforming 35 acres
- Goal of transforming 300 acres over time





Naturally Thornton Benefits

- Save >50% on water at each site (500,000 gallons/acre/year)
- Reduce summer water demand, reducing strain on water treatment plants
- Reduce carbon footprint, using fewer chemicals and gasoline
- Enhance native and resilient vegetation
- Increase biodiversity of plants, pollinators, and other wildlife
- Provide a landscape that is more sustainable to the ecosystem long-term
- Staff time redirection and fiscal savings

Year 1



Year 2



Naturally Thornton Stages

- Year 1 – Site preparation
- Year 2 – Seeding and establishment
- Year 3 – Weed control, overseeding



Tahoma 31 Bermudagrass Test Site

Cold and salt tolerant Bermudagrass <https://tahoma31.com/>

Tahoma 31 Bermudagrass

- 60% less water than bluegrass
- Available in sod
- Warm season grass
- Mow once/month
- High turf quality
- Cold and shade tolerant
- Green-up in May



Naturally Thornton Challenges

- 3 years to transition sites
- Different landscape management procedures
- Some residents' opinions of neighboring sites
 - Allergies
 - Insects
 - Rodents
 - Snakes
 - Fire danger
 - Home value





naturallythornton
our H₂Overhaul for Sustainable Landscapes

CONVERSION SITE

SITIO DE CONVERSIÓN



Water we save today means a
more secure tomorrow.

El ahorrar agua hoy nos brinda un mañana más seguro.



THORNTON
PARKS, RECREATION & COMMUNITY PROGRAMS



**City of
Thornton**

thorntonparks.com • 720-977-5982



WITHOUT WATER *life would be* **PRETTY DRY**

THORNTONWATER.COM





100 YEARS



COLORADO
MUNICIPAL
LEAGUE

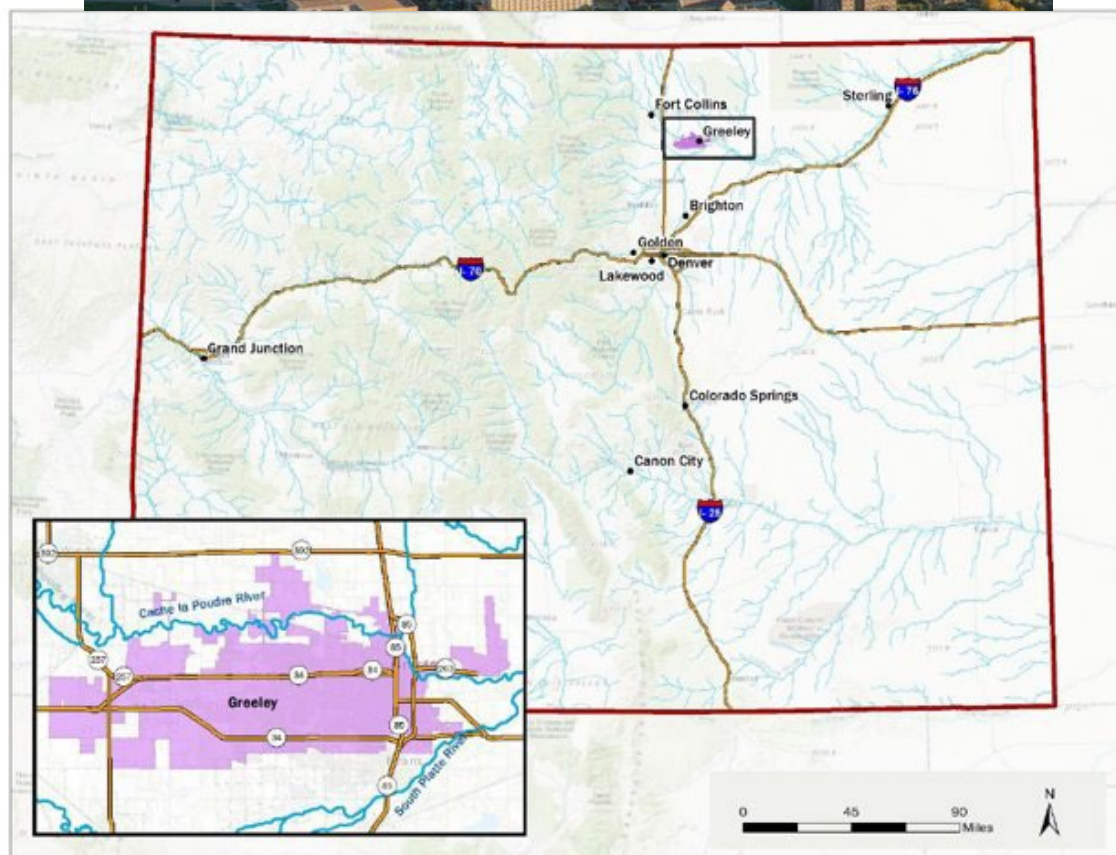
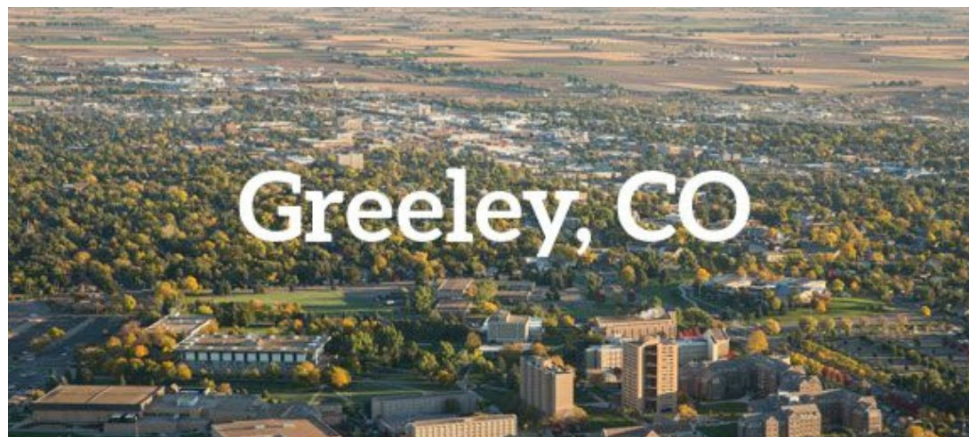
1923-2023

Transforming Water Intensive Landscapes

Ruth Quade

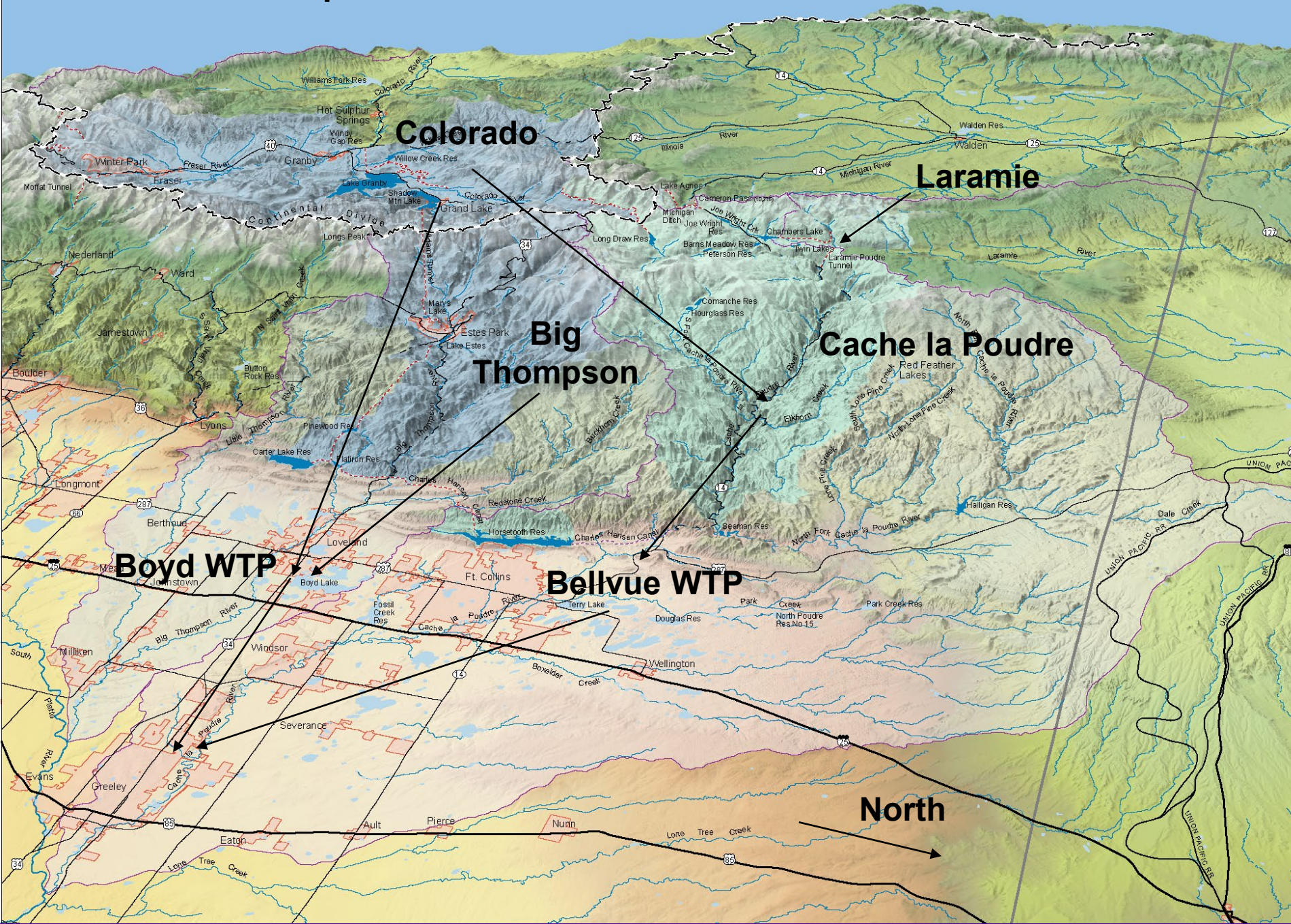
City of Greeley,

Water Conservation Administrator



COLORADO MUNICIPAL LEAGUE • 2023 ANNUAL CONFERENCE

Two filter plants – Four river basins – Two transmission mains



Where does
Greeley's water
come from?

Pure Rocky
Mountain snow
melt

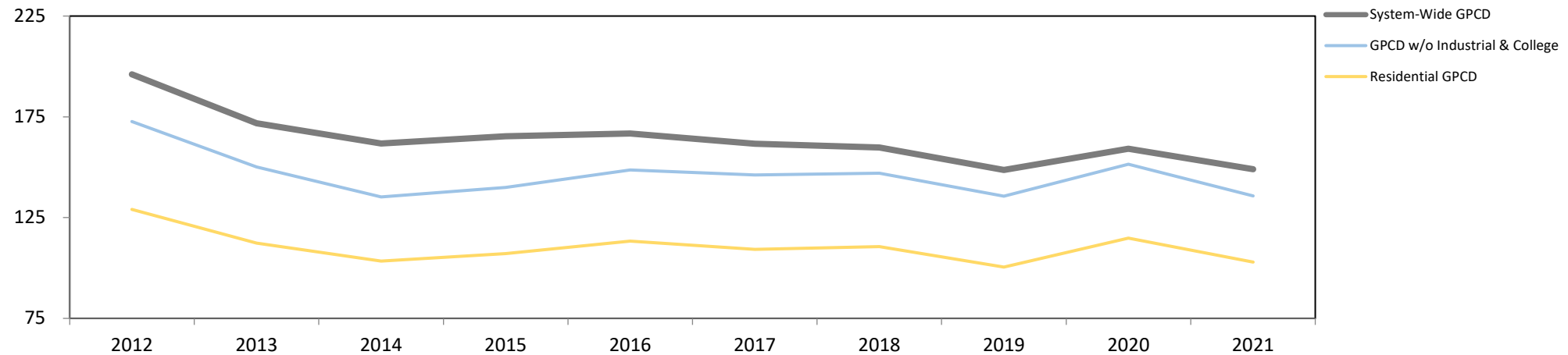
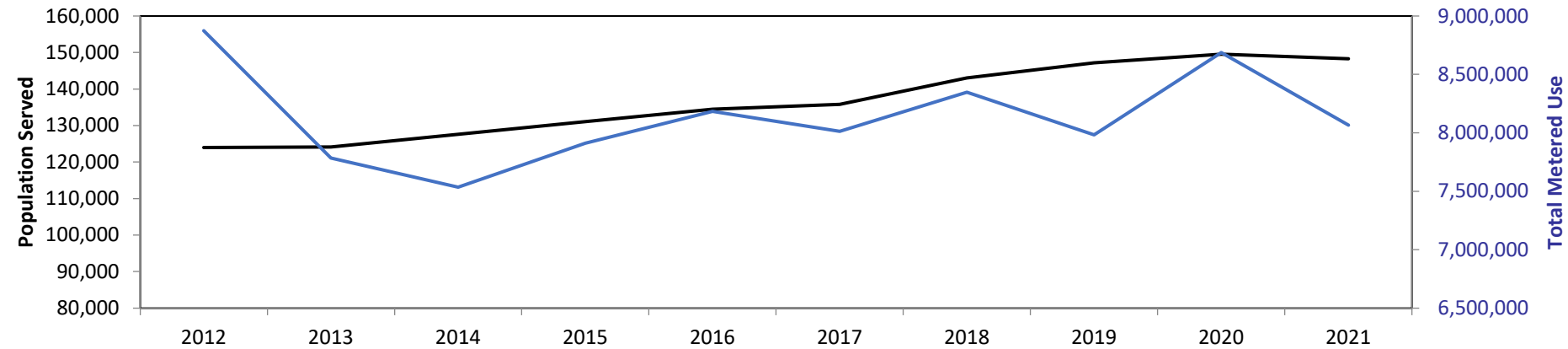
- Cache la Poudre
- Colorado River
- Big Thompson
- Laramie River
- Terry Ranch Project

Greeley Watering Restrictions

- Watering restrictions in place since 1890s
 - No midday watering (1893)
 - Alternate day watering (1907)
- 2002- updated due to drought to be more horticulturally sound
 - Engaged with Green industry folks
 - Adopted across the Front Range



Population v Demand



Greeley, Colorado



Demographics

- 110,000 population
- Median age of 32
- Diverse community (English/Spanish)
- 60% own their home
- Rent is ~\$1,300/month
- Average density is 3.49

Utility characterizes

- 28,900 customer accounts
- 25,295 AFY H2O consumption
- 50% on AMI water meters
- Residential meters: 82%
- CII: 7% of accounts yet 37% of consumption
- Wholesale water to four cities

GREELEY WATER CONSERVATION PROGRAMS



The City of Greeley

is proud to have a long history of water stewardship here in northern Colorado. Since 1907, we've provided safe, high-quality water supplies for our residents while ensuring a reliable supply for the future. One of the many ways we're safeguarding your water supply is through water conservation. In fact, Greeley offers one of the most robust water conservation programs in Colorado.

With just over 13 inches of rainfall per year, Greeley is considered a semi-arid climate. This means local water supplies are scarce and must be used very wisely. To help customers save water indoors as well as outdoors, Greeley provides a wide range of water conservation programs and services that benefit a variety of water users. We hope you'll take a few minutes to learn more about these offerings and take the next steps to use water wisely.



Conservation Initiatives

- Water Audits (indoor and outdoor)
- Rebates (indoor/outdoor)
- Professional Landscape Certifications
- Life After Lawn (Turf replacement)
- Small Xeriscape grants
- Garden in a Box
- Showerhead exchanges
- Online Water Efficiency Tools
 - Water Budget Portal
 - WaterSmart Portal
 - Online Plant Database
- Educational Programs

Conservation Initiatives

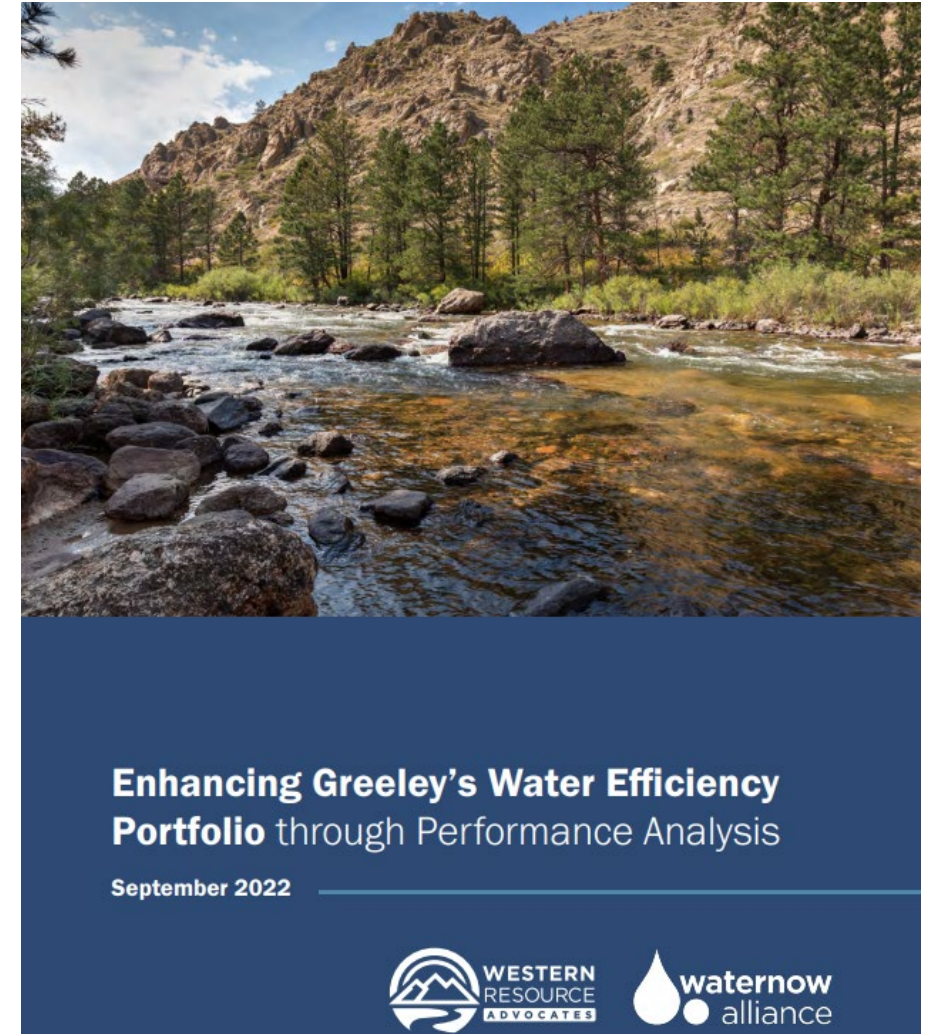
- 2017-Water Budget implemented
- 2019-Reduced tap fees and PIFs for low landscape water demand
- 2018- Pilot project turf removal
 - Transformed to current Life After Lawn
- 2021 - Drought Plan
- 2021- Non-Potable Water Master Plan
- 2023 - Landscape Criteria & includes water budgets



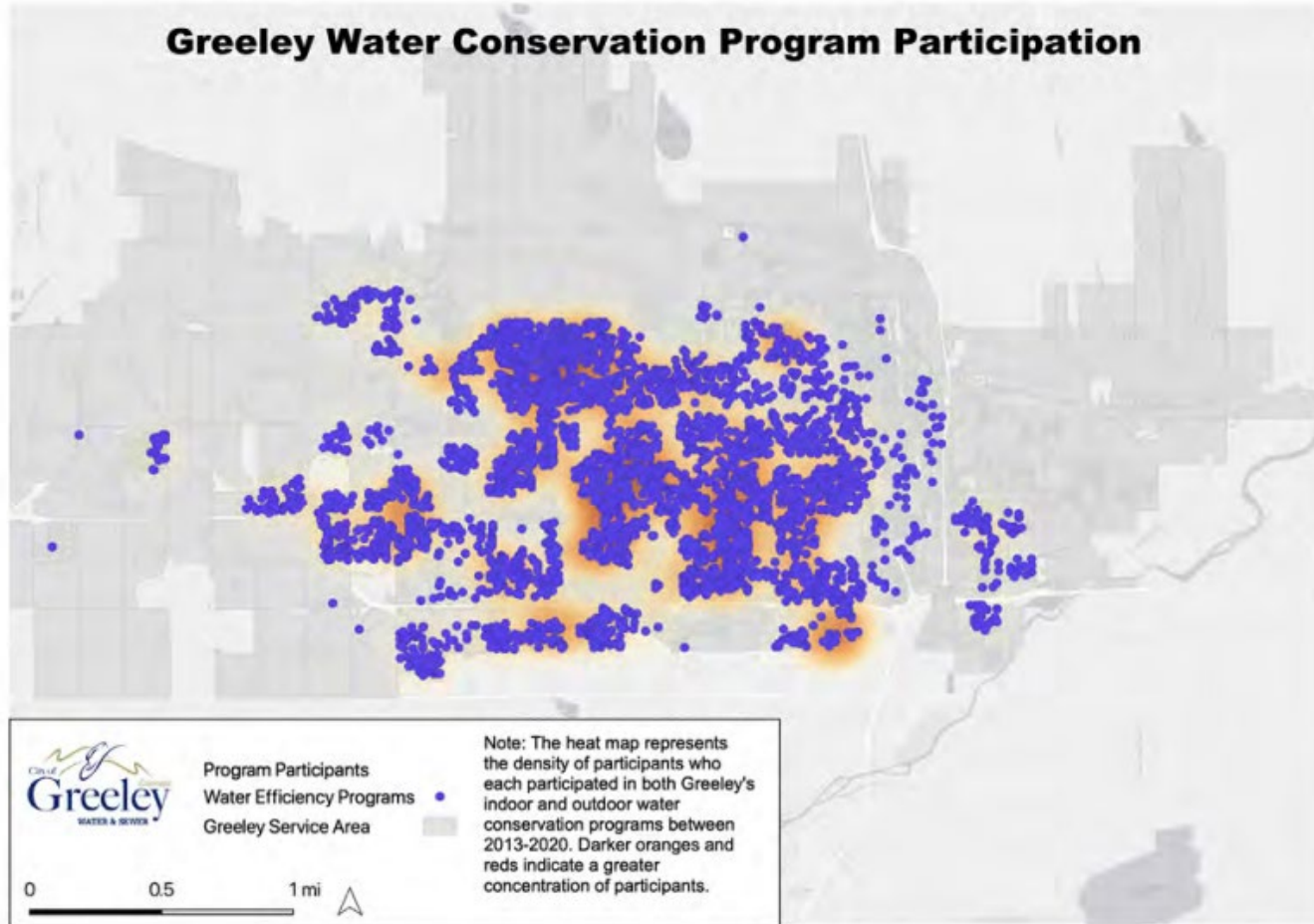
Water Now Alliance- Project Accelerator

Report included:

- Performance Analysis on conservation programs
- Return on investment
- Metric analysis on socioeconomic status (720 participate survey)



Water Now Alliance-Project Accelerator



- Heat maps overlaid with census data
- Gap analysis
- Are conservation programs including underserve neighborhoods and achieving DEI?

Communication, Engagement & Education

Youth Education

- Water Festival
- Caring for our Watershed
- Classroom presentations
- Teacher training
- Attending other organizations events
 - Earth Day
 - Poudre Learning Center FISH
 - Future Farmers of America (FFA)

Adult Education

- Landscape Lectures
- Presentations to civic groups/HOAs
- Open houses
- Water Budget
- Tours
- Participating in other organization events



Landscape Incentives

- Life After Lawn Turf Replacement
 - Homeowners
 - Commercial/HOAs/churches
- Incentives for landscape and irrigation industry to get certified
- New landscape codes with water budgets



Bluegrass the Old Norm

Parks



HOAs





Homeowners



Homeowners



What is the City Doing?





Landscapes are Changing at HOAs





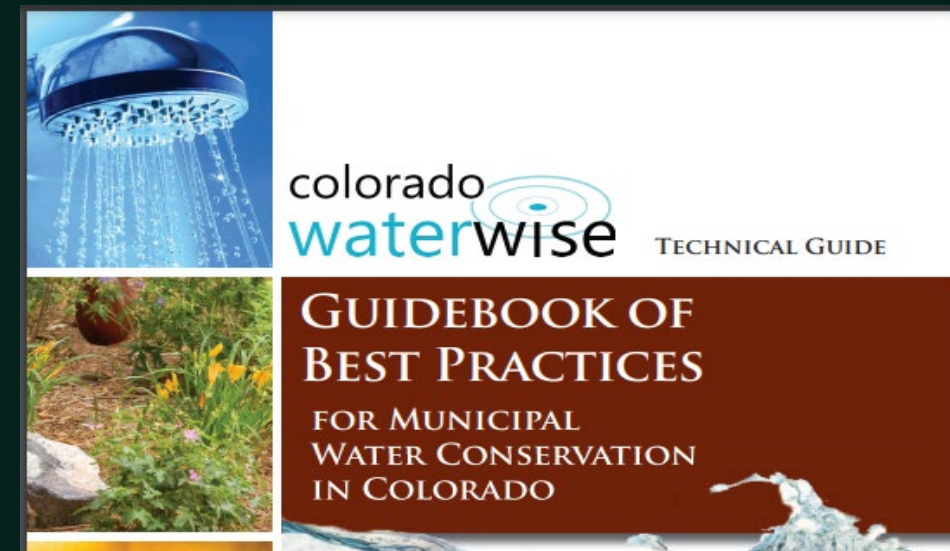
THANK YOU

Ruth Quade

Ruth.Quade@greeleygov.com



coloradonativegrass.org



coloradowaterwise.org



lovecoloradowater.org



westernresourceadvocates.org/publications/financing-the-future-how-to-pay-for-turf-replacement-in-colorado

The background of the slide is a green field with diagonal stripes of different shades of green, creating a textured, grass-like appearance.

Questions?



Thank You!

LINDSAY ROGERS: LINDSAY.ROGERS@WESTERNRESOURCES.ORG

RUTH QUADE: RUTH.QUADE@GREELEYGOV.COM

TIM YORK: TYORK@AURORAGOV.ORG

LAURA WING: LAURA.WING@THORNTONCO.GOV



THANK YOU FOR ATTENDING

Please don't forget to rate the session on the CML Conference App

Go to session & click on survey