



# BROOMFIELD CITY COUNCIL

To: Mayor and City Council  
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Agenda Category	Study Session
Agenda Item #	3

## Broomfield’s Water Resources - Past, Present, and Future

### Summary

On July 19, 2022, staff presented the [2022 Rate Study](#), including utility financial model projections and financial planning models to provide sound methodology for any future proposed rate changes. The objectives of the study were:

- Prepare ten (10) year financial plans in support of meeting ongoing expenses, while adhering to Broomfield and industry standard financial policies
- Complete a cost-of-service analysis to identify the cost of providing utility service by customer class and adjust rates as appropriate
- Update the water, wastewater and reclaimed (reuse) water license fees to reflect the cost of providing service to new and expanded development.

Broomfield’s water fund, sewer fund and water reclamation (reuse) fund (collectively the “utility funds”) operate as enterprise funds; where rates and fees within each fund are set to cover the costs of providing respective services to customers. By law, enterprise funds are not supported by tax revenues, but rather by service charges and fees. Enterprise funds must operate as stand-alone businesses, generating the necessary revenues needed to provide services.

In Broomfield, there are two separate components to the overall operation of each utility fund: an operating component and a capital component.

- The operating component accounts for the day-to-day functions of running the utility for existing customers, costs to provide services and maintaining the existing capital investment.
  - The major revenue sources associated with the operating components are user service charges and fees.
- The capital component includes costs related to building or expanding the existing system, which may include new debt associated with constructing new infrastructure.
  - The major revenue associated with the capital component is the license fee (impact fees or assessments designed to recover the costs of capital improvements or facility expansions attributable to growth paid when a new or expanding user ties into the system).

The ongoing, critical necessity of proactive planning for and securing of Broomfield’s water supply and storage for the growing community cannot be understated.

Through this study session, staff will provide City Council with a comprehensive overview of Broomfield’s Water Resources: Potable (drinking) Water, Reclaim (reuse, non-potable) Water Supplies, Water System Planning, Water Conservation Programs, Drought and Contingency Planning and Colorado River update.

### Water Resources:

Broomfield has two major sources of potable water supply: treated water purchased from the Denver Water Board, and raw water from both the Colorado-Big Thompson (C-BT) and Windy Gap Projects. Broomfield also owns, maintains and operates an extensive non-potable (reuse) system that is completely separate from the potable water system and serves as an additional source of water supply to meet irrigation demands.

### Water System Planning:

Broomfield’s long-term water supply and demands are balanced; meaning Broomfield has the supply to meet the current projected demands for a population of 115,000 at buildout. However, ongoing drought and current issues surrounding Colorado River water supplies continue to threaten the reliability of Broomfield’s water supply portfolio. Water conservation programs help provide a buffer during drought years and enhance staff’s ability to manage the uncertainty inherent in our water supply and demand forecasts.

City and County of Broomfield staff, including Public Works, Finance, and Community Development - Engineering Departments, work closely to identify the scope, timing and necessary budget (funding) to meet buildout demands of the potable and non-potable water systems' projects. It is anticipated that seven major capital improvement projects related to water supply and treatment will be required to be constructed over the next 10 years with estimated costs totalling over \$318.7 million. The capital projects are funded by current and future water licenses sales. The Water system capital improvements are separate from the wastewater system capital improvements estimated costs totaling \$155.99 million.

#### **Water Conservation:**

Staff continues to develop the City and County of Broomfield's water conservation program in accordance with the goals and activities identified in the City's [2020 Water Efficiency Plan](#). Current water conservation initiatives focus on the following:

- Expanding capacity of the reuse water system through the completion of the proposed reuse water storage tank and the Heit Pit raw water storage facility in Weld County;
- Integrated water and land use planning;
- Incentivizing water efficiency in new development;
- Expanding funding to existing programs (i.e. turf replacement);
- Completion of the pilot project evaluating the feasibility of a large-scale turf replacement program for city-owned parcels; and
- Communicate with reuse customers to ensure water consumption aligns with annual water allocations (i.e. purchased water tap equivalents/licenses) and charge customers for overuse of their annual allocations per existing [Broomfield Municipal Code](#).

Broomfield offers a number of [rebate programs](#) to incentivize water efficiency upgrades for residential and non-residential customers. Staff works with Resource Central to provide free outdoor water audits ([residential](#) and [non-residential/commercial](#)) and discounts on [turf replacement](#) and [xeric landscaping kits](#) (i.e. Garden in a Box).

#### **Drought and Contingency Planning:**

Staff is in the process of updating Broomfield's 2012 Drought Response Plan to plan for the rapidly evolving risks of drought, and are working diligently to stay abreast of current water issues impacting water availability in the Colorado River Basin.

Federally-mandated water cuts have been imposed solely on the Lower Basin states, however, it is conceivable that a "Compact call" could force the Upper Basin states to curtail water usage to maintain compliance with the Colorado River Compact of 1922. It is uncertain how many water use reductions to the Upper Basin states would impact Broomfield or other Front Range municipalities that rely on Colorado River water since federally-mandated water cuts have never been imposed on the Upper Basin.

In response to these ongoing concerns around such a critical resource, large water providers in Colorado have made a commitment to bolstering water conservation initiatives, particularly those related to replacing non-functional turf grass and water reuse and recycling programs.

**Financial Considerations**

**Water Fund: Capital Improvement Summary - Major Water Projects**

Project	Status	Anticipated Completion Year	Estimated Cost, \$ Million
Siena Reservoir Conversion	60% design	2024	29.9
Heit Pit Campus	90% design	2024	4.0
Potable and Reuse Norther Tanks & Pump Station	30% design	2025	45.0
Windy Gap Firming	Construction started in 2021	2025	225.3
Water Treatment Plant Expansion (26 to 32 MGD)	Conceptual Plan completed	2028	22.5
Broomfield Reservoir	Design/permitting anticipated in 2025	2030	40.0
Wastewater Reuse Pump Station	Conceptual Plan completed	2024	0.9
TOTAL			367.6

**Sewer Fund: Capital Improvement Summary - Major Sewer Projects**

Project	Status	Anticipated Completion Year	Estimated Cost, \$ Million
Regulation 31 - Nutrients	Optimization Report Completed	2032	76.02
Temperature Reduction	Optimization Report Completed	2032	14.90
Solids Handling	Design to start after completion of the master plan	2028	23.11
Wastewater Treatment Expansion	Design to start after completion of the master plan	2032	30.00
Aeration Improvements	Preliminary Design Process	2024	0.60
Influent/Ultraviolet Valve Automation	Preliminary Design Process	2024	0.51
Flow Equalization Storage	Design to start after completion of the master plan	2028	1.67
Centrate Treatment (Solids/Nutrients)	Design to start after completion of the master plan	2028	3.63
Master Plan	In progress, started September 2022	2023	0.65
Wireless Plant Wide	Conceptual Plan completed	2023	0.354
Roof Replacements	Design/permitting anticipated in 2023	2023	0.297
Odor Improvements	Design to start after completion of the master plan	2024	4.25
Total			155.99

**Prior Council or Other Entity Actions**

- On May 27, 2003, City Council adopted Ordinance 1732 - Drought Watering Restrictions.
- On June 19, 2012, City Council held a [Study Session](#) that included an update on the 2012 Draft Drought Response Plan.
- March 20, 2012, City Council approved [Resolution 2012-8](#), which adopted the 2011 Water Conservation Plan.
- August 21, 2018, City Council held a [Study Session](#) on the update to the Potable Water Master Plan.
- August 21, 2018, City Council held a [Study Session](#) on the update to the 2011 Water Conservation Plan.
- December 17, 2019, City Council held a [Study Session](#) that included an update and discussion on the draft 2019 Water Efficiency Plan and other City Council priorities pertaining to water.
- On September 14, 2021, City Council approved [Ordinance No. 2158](#) which adopted a Graywater Control Program and legalized four categories of graywater reuse.

**Council Priorities / Comprehensive Plan / Long Range Financial Plan**

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Affordable Housing                       | <input type="checkbox"/> Mental Health Strategic Plan | <input checked="" type="checkbox"/> Comp Plan Goal - Other Long Range Financial Plan |
| <input type="checkbox"/> Diversity, Equity, Access, and Inclusion | <input type="checkbox"/> Oil and Gas                  |  |
| <input type="checkbox"/> Economic Vitality                        | <input checked="" type="checkbox"/> Sustainability    |  |
| <input type="checkbox"/> Creative Economy                         | <input type="checkbox"/> Transportation               |  |
|   | <input checked="" type="checkbox"/> Water             |  |

**Proposed Actions/Recommendations**

Discussion by the Council regarding information detailed in the memo and presentation.

**Alternatives**

N/A

## WATER SUPPLY OVERVIEW

### Potable Water Supply

Broomfield's potable water is supplied from two sources of high quality drinking water: (1) treated water purchased from the Denver Water Board and (2) raw water treated at the city's water treatment facility. These two treated water systems are blended together in the distribution system. All of Broomfield's drinking water, whether supplied by Broomfield or Denver Water, comes from surface water sources such as rivers, lakes, and reservoirs that are sustained from winter snowpack.

Broomfield has a perpetual agreement with Denver Water that allows Broomfield to purchase up to 6,500 acre-feet (minimum is 4,700 acre-feet) of treated water per year. The supply from Denver Water is delivered to Broomfield through a master meter at Midway Boulevard and Zuni Street.

Broomfield's raw water is supplied by the Northern Water Conservancy District (Northern) from both the Colorado Big Thompson (C-BT) and Windy Gap projects, which originate on the Colorado and Fraser Rivers on the western slope of Colorado. The Windy Gap project pumps its water into the CBT system. Once there, the water from both projects is delivered to Carter Lake then piped through the Southern Water Supply Project Pipeline (also known as the Carter Lake Pipeline) to Broomfield's Water Treatment Facility.

Broomfield currently owns 13,698 units of C-BT. The amount of water available from these units varies from year to year. The Northern Water Board of Directors adopts a quota each year based on the amount of storage in reserves and the projected runoff. Broomfield owns 56 of the total 480 Windy Gap Project units. The current annual yield of Broomfield's 56 units is highly variable, ranging from no yield to 5,600 acre-feet in an average precipitation year. The yield depends upon annual moisture and storage capacity in the C-BT system. Without its own storage reservoir, the Windy Gap water is not considered to be a firm source of supply because there is no storage capacity for Windy Gap water when Lake Granby is full, or when Windy Gap water rights do not come into priority during dry years. To firm the Windy Gap rights, Broomfield is participating in the Windy Gap Firming Project (WGFP). "Firming" refers to the process of developing reservoir storage to make water consistently available year-to-year.

### Non-Potable Water Supply

The City and County of Broomfield owns, maintains, and operates an extensive non-potable water system that is supplied by advanced treated wastewater effluent (called reclaimed or reuse wastewater) and raw surface water supplies that are blended with the reclaimed wastewater. The blended water, called non-potable water, is used for outdoor irrigation of parks, golf courses, commercial areas, and other landscaped areas within the service area boundaries of Broomfield. While Broomfield's primary source of non-potable water today consists of Windy Gap effluent (or Windy Gap water that returns to Broomfield's Wastewater Treatment Facility via the city's sewer system), the reuse water system has an array of at least 12 different water rights that have been developed over many years.

The non-potable water system is completely separate from the potable water system. It currently provides a supply of about 2,500 acre-feet per year (1 acre-foot = 325,851 gallons), on average, to a total of approximately 940 acres of irrigated parks in the city. There is approximately an additional 1,500 acres of non-city owned areas served by the reuse system, including Arista, Flatirons Mall, Legacy High School, Anthem, and Interlocken Business Park along Highway 36. The reuse system is extremely beneficial because it allows Broomfield to expand its water supplies beyond a single, one-time use and reduces the amount of treated domestic drinking water that would otherwise be needed for these irrigation purposes.

## Water Supply and Demand Summary

**Table 1. Water Supply and Demand Summary**

Potable		Difference (AF)
Water supply today (AF)	16,089	+ 3,589
Water demand today (AF)	12,500	
Water supply @ buildout (AF)*	21,878	+189
Water demand @ buildout (AF)	21,689	
Non-Potable		Difference (AF)
Water supply today (AF)	3,860	+755
Water demand today (AF)	3,105	
Water supply @ buildout (AF)	4,932	+425
Water demand @ buildout (AF)	4,507	

\*Includes 5,600 acre-feet of firming Windy Gap

It's worth noting that although Table 1 presents a balanced water supply and demand portfolio, there is uncertainty in these forecasts. Effective demand management (i.e. water conservation) helps provide a buffer during drought years and better manage this uncertainty.

### WATER SUPPLY PLANNING OVERVIEW

Broomfield's water planning effort is a continuous process that forecasts the gap between current potable water supplies and the ultimate development of Broomfield, and identifies the scope and timing when significant capital improvements are required to close that gap. In addition, it covers the financial planning necessary to fund the construction of new capital facilities.

Broomfield's ability to sell water licenses and support future growth is dependent upon the quantity of existing supplies and the capacity of several key facilities. More specifically, four functional categories control Broomfield's ability to serve future customers. These include:

1. Water Supply - Broomfield's primary water supply portfolio includes Denver Water, Colorado-Big Thompson (C-BT) units, and Windy Gap units.
2. Transmission Conveyance - Broomfield's water supplies are delivered through two pipelines: Conduit 81 for Denver Water and the Southern Water Supply Pipeline (also known as the Carter Lake Pipeline) for C-BT and Windy Gap units.
3. Water Treatment - Broomfield treats its supplies from C-BT and Windy Gap while Denver Water is delivered as treated water.
4. Water Distribution - The potable water system includes approximately 400 miles of pipeline, five booster pump stations, and four storage tanks.

Recent planning efforts have focused on the first three categories above since they make up the greatest proportion of future capital expenditures and require the longest lead times to implement. In some instances, the duration of the planning and permitting efforts may span five to 20 years, while

the design and construction can be completed in as little as two to three years. It is extremely important to time the construction of new capital projects as closely as possible to the need. When new water licenses are sold and the demand begins to approach the capacity limits of these functional categories, system improvements must be funded and constructed to avoid restricting the sale of new water licenses, the possibility of shortages, and reduced service levels.

The last functional area, water distribution, is equally as important as the first three. The Capital Improvement Projects division of Community Development has worked with AECOM, an engineering consulting firm, to update plans for the existing potable water distribution system and the associated distribution system improvements needed to serve the ultimate build-out population. Distribution projects are planned and executed by the Capital Improvement Project (CIP) division of Community Development, in close coordination with Public Works and Finance.

Together, these plans are the basis for capital planning and budgeting for the water system. Based on the current infrastructure and water supplies available to Broomfield, the following seven major capital projects are needed to support Broomfield’s potable and non-potable water systems at buildout:

Project	Purpose	Cost, \$ Million
Chimney Hollow Reservoir	To firm Broomfield’s Windy Gap water rights	176.4
Siena Reservoir	Conversion of reservoir into a peaking facility to manage summer peak demands	29.9
Broomfield Reservoir	Local storage/additional summer peaking capacity	40.0
Water Treatment Facility Expansion from 26 MGD to 32 MGD	6 million gallon per day expansion to meet growth	22.5
Water-Reuse Storage Tanks and Booster Pump Station	Support growth and peaking demands	45.0
Heit Pit Facility	Expand capacity of the non-potable (reuse) system	4.0
Wastewater Reuse Pump Station Expansion	Add 2 million gallons per day of pumping capacity to meet peak demands	0.9

Additional water distribution system improvements will also be needed; however, these types of improvements are typically designed, permitted, and constructed as new development occurs.

## WATER CONSERVATION PROGRAMS

### 2020 Water Efficiency Plan

All water providers who annually supply over 2,000 acre-feet of water to retail customers are required to submit a water efficiency plan (WEP) to the State Office of Water Conservation and Drought Planning (OWCDP) in accordance with the Colorado Water Conservation Act of 2004 ([HB 04-1365](#)). The Act

requires that the plan must be renewed, at a minimum, every seven years. Broomfield’s current [WEP](#) was approved by the City Council through the adoption of [Resolution 2020-31](#) on January 28, 2020. The 2020 WEP evaluated and ranked specific conservation activities based on estimated water savings, compliance with established water conservation goals and policies, benefit/cost ratio, ease of implementation, and public acceptance. The Plan identified the following priority activities:

- Expand capacity of the reuse system by up to 1,000 acre-feet through the completion of the Heit Pit
- Storage capacity of the reuse system to include reuse water storage tank
- Implement and continue to support rebate programs, public education, technologies, and potential regulatory changes related to landscaping and water rates to reduce the 2040 projected water demand by 10%
- Implement regulations that allow use of greywater
- Investigate tiered water rate structures

Water Resources staff presented the draft 2020 Water Efficiency Plan (WEP) to Broomfield’s Advisory Committee on Environmental Sustainability (ACES) in late 2019 and received written comments on the activities and objectives defined in the plan. Broomfield’s draft WEP was also presented for public review, consistent with State requirements. A summary of the comments is presented in Table 2.

**Table 2. 2020 WEP Public Comment Summary**

<b>General Comment or Suggestion</b>	<b>Frequency</b>
Improve local regulations e.g. HOAs, greywater, outdoor watering rules, rainwater harvesting, etc	10
Improve water usage data	7
Increase 5% demand reduction goal	6
Education and incentives for water conservation e.g. landscaping, fixtures, rebates, etc	6
Water Resources coordination with Planning and Development	5
Increase water storage and water supply redundancy	4
Consider effect of climate change	2
Water quality considerations	2
Expand reuse system	2

It’s worth noting that comments addressing irrigation and landscaping requirements were made by nearly every survey respondent. Reducing non-native grasses and irrigated turf, expanding non-potable water use, quality xeric design, water application rates, and restrictions on new development were mentioned repeatedly, and were high priorities identified by ACES members.

### **Existing Programs and Initiatives**

Currently, Broomfield’s Water Resources Division offers a number of rebate programs to residential and non-residential customers. Below is a brief description of each program.

#### **[Rebate Programs](#) for Eligible Purchases:**

- EPA WaterSense certified high efficiency toilets (up to a \$75 rebate for 3 toilets per residence)
- Rotary nozzles (\$2 rebate per nozzle, minimum 10, maximum 100)

- WaterSense certified weather based smart controller (up to \$100 rebate, 1 per residence)
- Rain barrels (up to \$50 rebate, two 55 gallon barrels per residence)
- Graywater systems (a \$200 rebate)
- Commercial and industrial water account holders can apply for a rebate for 25% of the purchase price of WaterSense certified irrigation controllers, flush-o-meters, toilets and rotary nozzles

Broomfield also partners with Resource Central to offer three programs including:

- Free outdoor [water audits](#) for both residential and non-residential water customers
- \$25 discount on [Garden in a Box](#) kits
- [Lawn Replacement Program](#). Broomfield residents may qualify to receive \$500 to apply toward lawn removal services (Broomfield pays \$1.25/sq ft up to \$500 per project; residents pay the remaining \$1/sq ft.) and/or complimentary Garden in a Box kits (up to 300 sq. ft.)

Broomfield's graywater [Ordinance No. 2158](#), passed September 2021, legalized the use of graywater within the City and County of Broomfield. Graywater sources include water discharged from bathroom and laundry-room sinks, bathtubs, showers, and laundry machines. Graywater sources do not include water discharged from toilets, urinals, kitchen sinks, dishwashers, and non-laundry utility sinks. Broomfield residents are authorized to reuse graywater for both outdoor irrigation and indoor toilet and urinal flushing. A laundry to landscape (or L2L) graywater system is a relatively simple system that uses graywater from your laundry machine to irrigate multiple plants or a mulch basin. In addition to L2L, residents have the option to retrofit their plumbing to install a whole house graywater system which diverts graywater to your home's bathroom fixtures for flushing. Either option is available to new or existing single-family, multi-family, or commercial buildings.

Broomfield is also participating as a partner community in a large-scale non-functional turf replacement pilot project to investigate the costs and benefits of implementing a large-scale turf replacement program (focusing primarily on city-owned parcels). "Non-functional turf" broadly refers to areas of irrigated, cool season grass that receive little, if any, practical use. The project aims to:

- Identify financing mechanisms available to fund large turf replacement projects
- Conduct a community-wide analysis of non-functional turf, estimating landscape replacement costs, and comparing water use and ongoing maintenance costs for existing turf and waterwise alternatives
- Develop a proof of concept landscape plan for a highly visible pilot parcel, with the goal of implementing the conversion following the completion of the project. Broomfield staff selected areas of unused turf in the Brandywine parks area for the case study.

## **DROUGHT AND COLORADO RIVER ISSUES**

### **Drought Status and Contingency Planning**

Broomfield is in a "Drought Watch" to encourage wise use of water among our residents and businesses. We disseminated public messaging about the drought via Broomfield Voice in May.

Overall, conditions in Colorado have improved slightly throughout the summer due to recurrent rainfall. For example, about 6-7 inches fell in Broomfield from early June to early September and there has been regular rain across the Front Range. Broomfield had more than enough water this year thanks to a normal quota on the C-BT system and nearly 5,000 acre-feet of yield from the Windy Gap project. Windy Gap does not yield every year - at least not until Chimney Hollow Reservoir is completed - so this was a welcome development. We will carryover to next year 2,739 acre-feet of C-BT water (the maximum amount allowed by Northern).

Broomfield has a Drought Response Plan that was developed and approved by the City Council in 2012. The current Plan includes methods for tracking drought conditions, making recommendations to the City Manager and the City Council about declaring Drought Stages, and a range of mandatory water use restrictions for those Drought Stages (note that staff determine when to enter a “Drought Watch” which involves increased communications to customers about water conservation measures). To better prepare Broomfield for evolving drought risks, we have initiated a project to update and enhance the Drought Response Plan. We will rely on updated guidance from the State, as well as examples from neighboring communities.

To help guide development of the new plan, we assembled an internal committee composed of staff from Public Works, Parks, Emergency Management, and Communications. Working with the committee, we have identified the following priorities for the updated Drought Response Plan:

- Include in our planning water system emergencies and shortages in addition to those caused by drought (e.g., a temporary disruption to deliveries from Northern Water);
- Incorporate the reuse system into drought monitoring and response;
- Thoroughly evaluate and describe Broomfield’s vulnerability to drought and other emergency water shortages;
- Estimate potential water savings from water use restrictions that we may implemented during Drought stages I, II, and III to inform future decisions;
- Develop monitoring and enforcement strategies for mandatory water use restrictions; and
- Develop a formal drought communications plan and enhance our communication and education about water conservation in general.

Work on the updated Drought Response Plan began in August 2022 and we expect to complete a draft of the new Plan by Summer 2023.

### Colorado River Update

Water Resources staff have been closely monitoring current issues on the Colorado River as Colorado River water makes up roughly 80% of Broomfield’s total water supply. These issues are rooted in a long-standing history of federal compacts, laws, court decisions and decrees, contracts, and regulatory guidelines collectively known as the “Law of the River.” Among these is the Colorado River Compact of 1922 which apportioned the annual flow of the river amongst the Upper Basin (Colorado, Wyoming, Utah and New Mexico) and Lower Basin (Arizona, California and Nevada) states. However, the 1922 Compact was negotiated during a very wet period in history, which resulted in the over-appropriation of the Colorado River’s waters. The issue has been exacerbated over the last 22 years by a “megadrought” caused by higher than average temperatures and reduced runoff throughout the river basin. Since the onset of the basin’s drought in 2000 the Colorado River has experienced an average annual flow of 12.5 million acre-feet (MAF), while 17.5 MAF is apportioned each year in accordance with the Law of the River. This has resulted in a gradual decrease in storage levels at Lakes Powell and Mead, the basin’s largest reservoirs and the primary source of Colorado water supply for the Lower Basin states, as is shown in Figure 1.

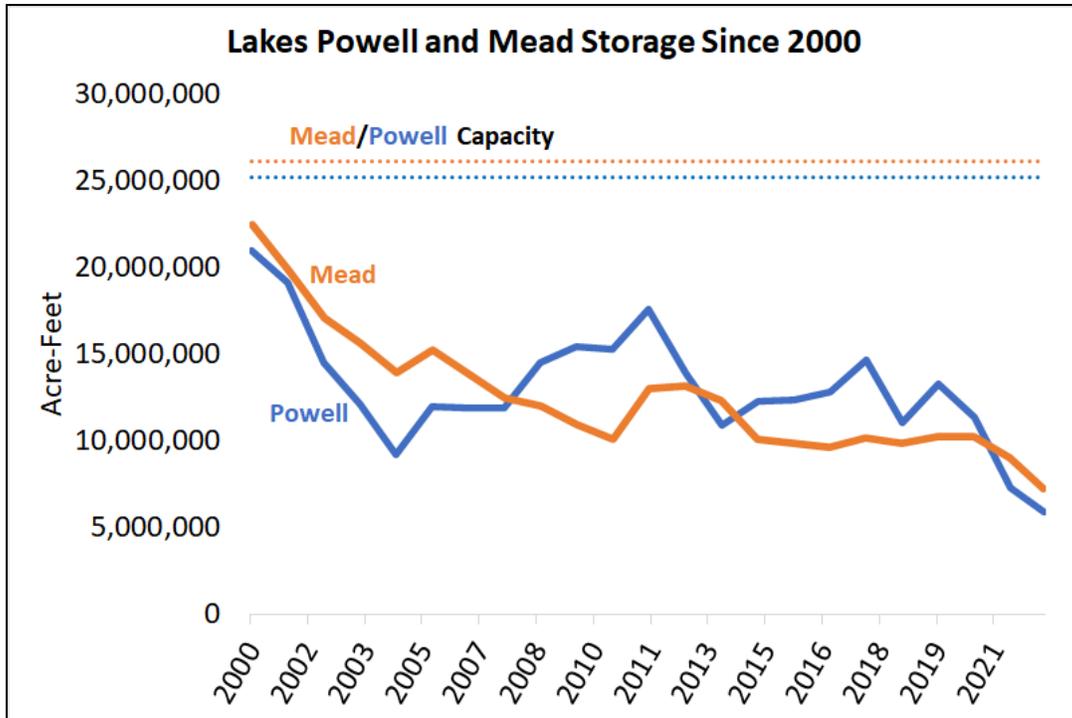


Figure 1. Lakes Powell and Mead Storage Since 2000

In response to these conditions, and the risk of Lake Powell dropping below the minimum elevation required to produce hydropower, the US Federal government declared the first-ever mandatory water cuts in 2021. The Tier 1 reductions required Arizona, Nevada, and Mexico to reduce their water usage by 18%, 7%, and 5%, respectively, consistent with the Lower Basin Drought Contingency Plan. In June 2022, The Bureau of Reclamation took additional measures by giving the seven basin states until August 15th to develop plans to drastically reduce water use by 2-4 million acre-feet in 2023. The Upper Basin States responded with a [5 Point Plan](#) which did not include mention of mandatory water cuts but focused rather on demand management and water conservation measures. The plan also noted that “Lower Basin and Mexico depletions are more than double the depletions in the Upper Basin.” No official response was made by the Lower Basin and the August 15, 2022 deadline passed with no formal agreement reached. In response to this, on August 16, 2022 the Bureau of Reclamation announced the Colorado River had reached a Tier 2 shortage, triggering additional water cuts. Arizona now faces a 21% reduction, Nevada an 8% reduction, and Mexico a 7% reduction.

The future of the Colorado River, and the water users who rely on it, is still uncertain. While water cuts to date have been imposed solely on the Lower Basin states, it's conceivable that a “Compact call” could force the Upper Basin states to curtail their water use to maintain compliance with the 1922 Compact. It's uncertain how exactly any water use reductions would be divided up amongst the Upper Basin states, or which water users would be the first to be impacted, since it has never happened before. It's worth noting that between 2016 and 2020, the Upper Basin used just 4.6 MAF, on average, of its 7.5 MAF annual allotment.

Upper Basin states, and Colorado in particular, continue to put an emphasis on water conservation to avoid the potential for mandatory water cuts. On August 24, 2022, large water providers (including Denver Water, Aurora Water, and Pueblo Water) [announced a commitment](#) to expand existing efforts to

conserve water, reduce demands and expand reuse and recycling of water supplies. They specifically call out a goal to “reduce the quantity of non-functional turf grass by 30% through replacement with drought- and climate-resilient landscaping, while maintaining vital urban landscapes and tree canopies that benefit our communities, wildlife, and the environment.”