



Utilities

electric · stormwater · wastewater · water
700 Wood Street
PO Box 580
Fort Collins, CO 80522

970.212.2900

V/TDD: 711

utilities@fcgov.com

fcgov.com/utilities

MEMORANDUM

DATE: May 11, 2022
TO: Water Commission
FROM: Michael Neale, MSc, Water Resources Engineer
RE: **April 2022 Water Resources Division Staff Report**

Purpose

This memorandum is intended to update the Water Commission on water resource conditions for the City of Fort Collins Water Utility (Water Utility) over the month of April and provide updated future outlook information. For additional information, please refer to the City's website:

<https://www.fcgov.com/utilities/water-status>

Water Resources Summary

Supply and Demand Projections for the remainder of WY2022

- Water Supply – During the month of April, water supply consisted of 50% from Horsetooth supplies and 50% from the Poudre.
- Water Demand- Demands within the Water Utility service area for the month of April were spot on projected, at 100% of projected demand. Please refer to the attached graphs and tables.

Weather: <https://climate.colostate.edu/>

Measured at the Fort Collins weather station 053005 along with average normals from 1991-2020:

- Mean daily high temperature recorded for the month: 65.2 °F.
 - 30-year average daily high temperature for the month is: 60.7 °F.
- Total recorded monthly precipitation: 0.11 inches.
 - 30-year average precipitation for the month: 1.97 inches.

Reservoir Storage: Northern has allocated a quota of 70% for the 2022 water year. As of May 1st and presented in the Northern District Storage and Delivery Report:

- Colorado-Big Thompson project reservoirs (Granby, Carter, and Horsetooth): 72% full.
- Horsetooth Reservoir: 94% full.
- Joe Wright Reservoir: 73% full (112% of average based on 14 years of data).

Snowpack: Natural Resources Conservation Service SNOTEL program percent of 1991-2020 median snow water equivalent as of 05/11/2021:

- Upper Colorado River Basin: 71% of median.
- South Platte Basin: 81% of median.



- Poudre Basin 5-site average snow water equivalent is currently 16.5 inches, 96% of the 1991-2020 combined median.

Poudre River flow: Northern Water forecasts an Apr-Jul most probable streamflow of 90% of average. See Snowpack and Streamflow Comparisons report attached. Graphical data for the Poudre River is available on-line at:

- Cache La Poudre River at the Canyon Mouth
<https://dwr.state.co.us/Tools/Stations/CLAFTRCO?params=DISCHRG>
- Cache La Poudre River at Fort Collins
<https://dwr.state.co.us/Tools/Stations/CLAFORCO?params=DISCHRG>

Drought Monitors:

- Larimer County and Colorado https://climate.colostate.edu/drought_info.html
Larimer County and upper South Platte basin are abnormally dry at this time.
- Colorado and the USA <https://droughtmonitor.unl.edu/>
The Colorado River basin remains in a drought.

Climate Outlook: <https://www.cpc.ncep.noaa.gov/>

National Oceanic and Atmospheric Administration (NOAA) climate outlooks for the northern Front Range and northern mountains, over the next three months:

- Leaning below normal precipitation
- Likely above normal temperature.

Other Water Supply Considerations:

- Water treatment managers and WRD have projected our total 2022 water year diversion off the Poudre at 60% of average. This due to potential burn area impacted runoff from summer rains that can make Poudre supplies undesirable for treatment.
- Water treatment began experiencing high turbidity in the Poudre River intake on May 6th, as runoff from snowmelt increased flows in the river. The intake was shut off and continues to be closed until conditions improve. Water treatment staff are monitoring conditions closely.
- The Colorado River basin remains in a significant drought. Utilities staff will continue to monitor conditions throughout the year.

City of Fort Collins Utilities

ASSUMPTIONS

- Values look at remaining demands and supplies through the end of the Water Year (Oct 31st)

DEMANDS

- Projected demand based on GPCD and population estimates
- Low demand is projected demand reduced by 10%
- High demand applies a monthly worse case factor to projected demand

SUPPLIES

Poudre

- Poudre Supply is a fire impacted Poudre that is approximately 60% of the annual average. Monthly percentages of average are Nov-Jan 95%, Feb 0%, Mar 95%, Apr 85%, May-Jun 40%, Jul 30%, Aug 25%, Sep 70%, Oct 80%.

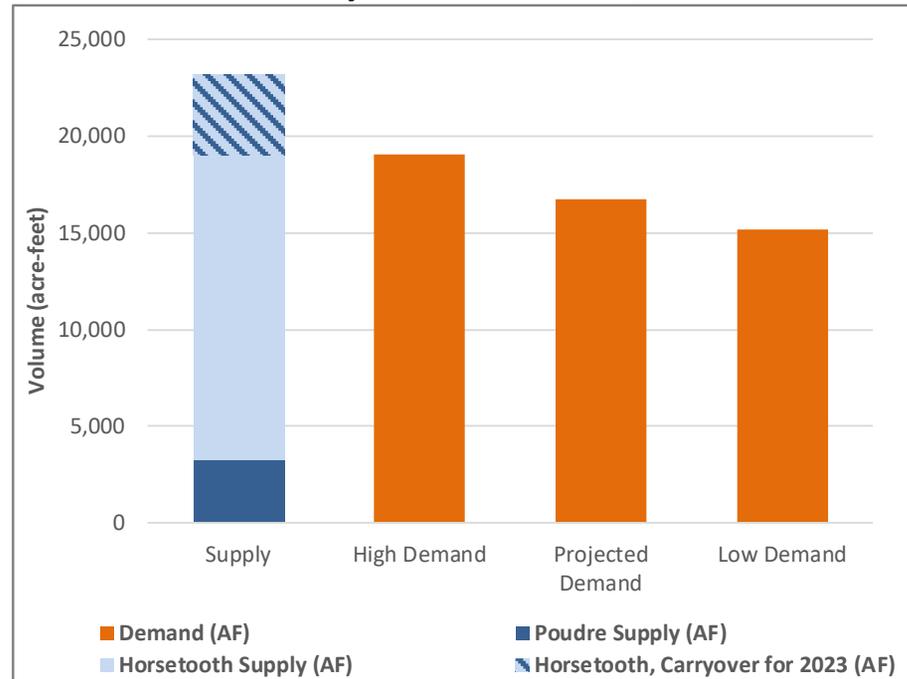
Horsetooth Reservoir

- Horsetooth Supplies include CBT, NPIC MU, Windy Gap
 - CBT supply: 70% quota, 2.25 AF NPIC MU allocation/share
 - A 1,500 AF Joe Wright-CBT exchange with NPIC
 - Windy Gap supply: 1,750 AF expected from PRPA
- All remaining Horsetooth raw water CBT obligations have been deducted.

Horsetooth Carryover Objective

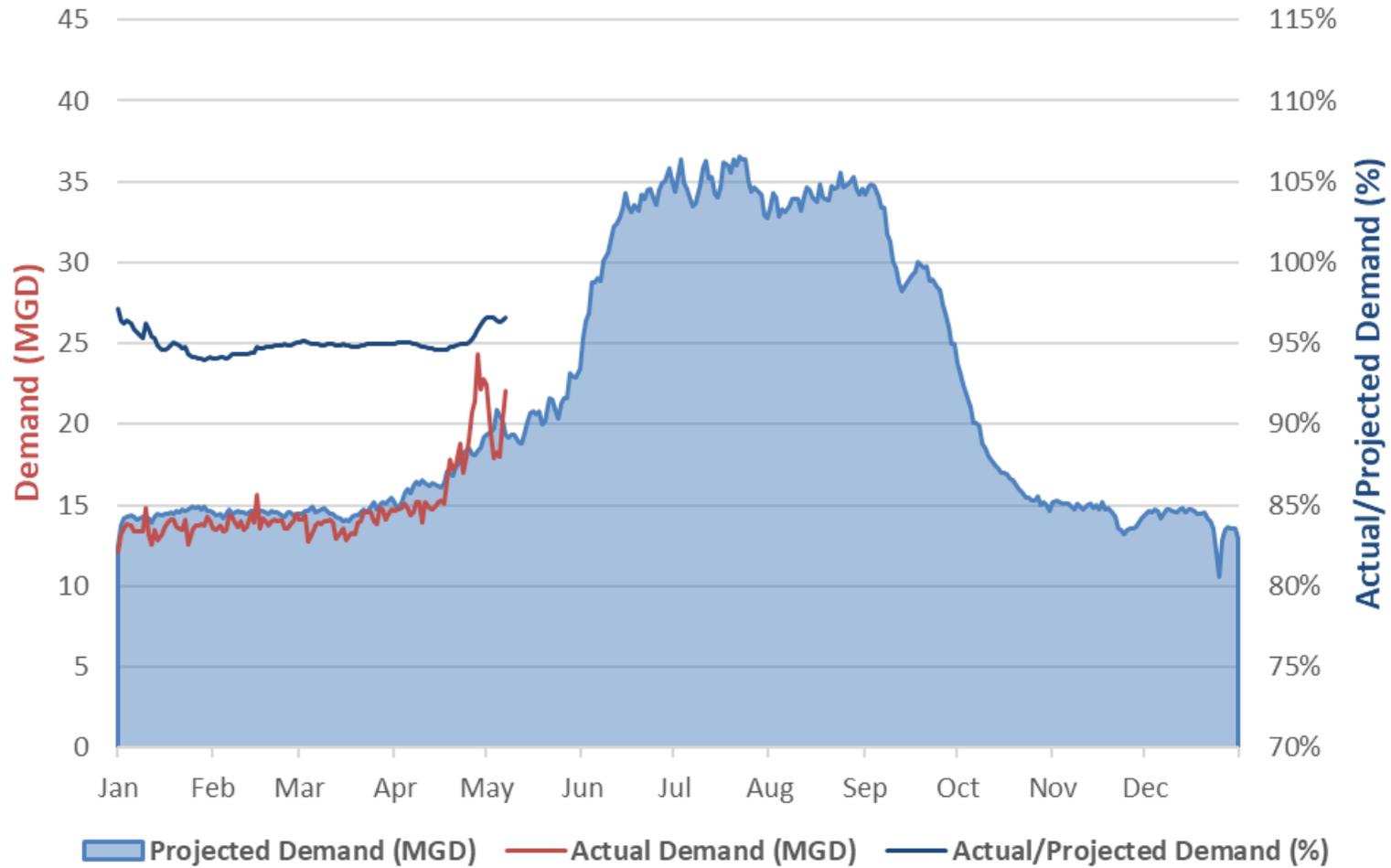
- Max amount allowable is 4,190 AF before 10% shrink

Remaining Water Demand and Supply from May 11 - October 31, 2022

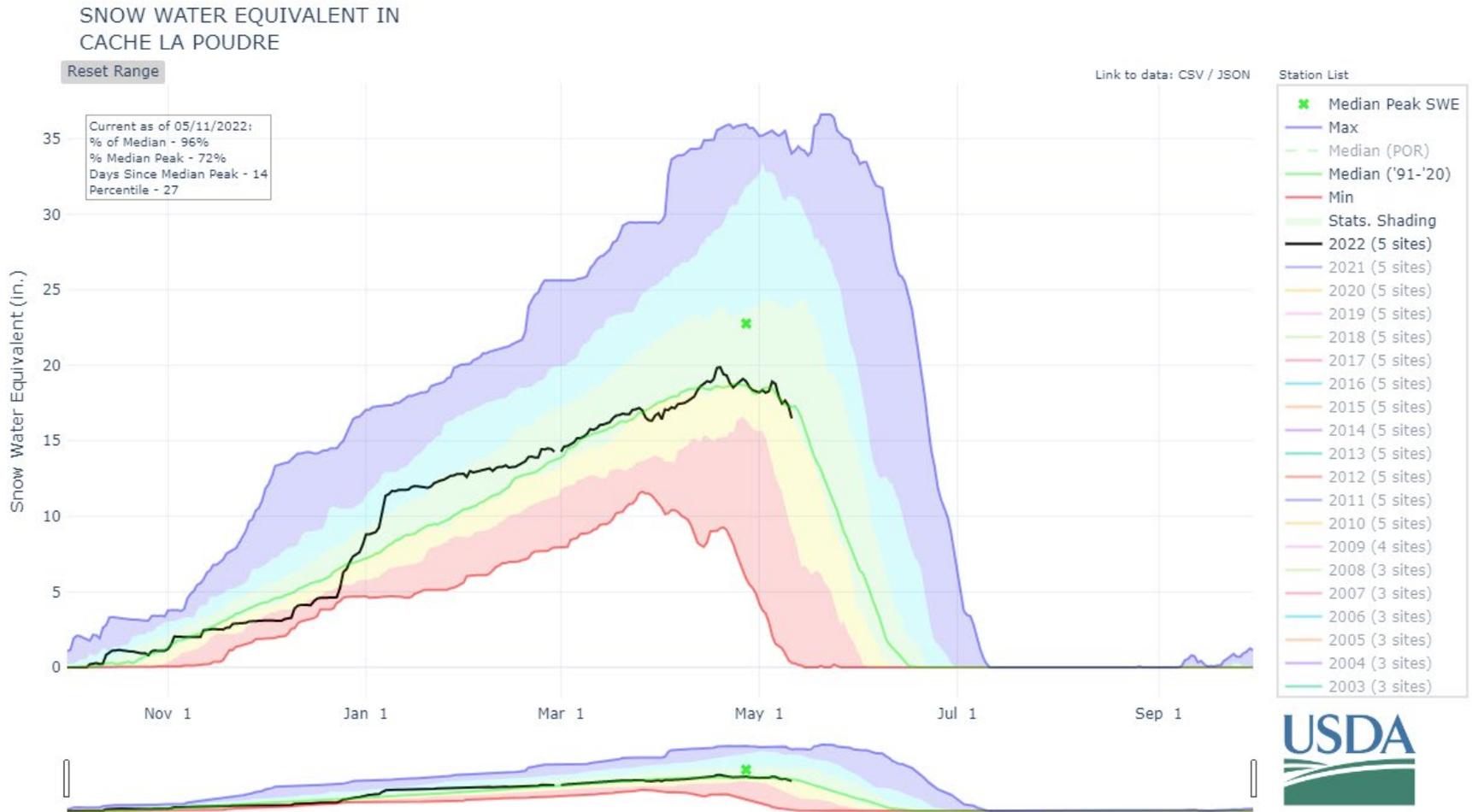


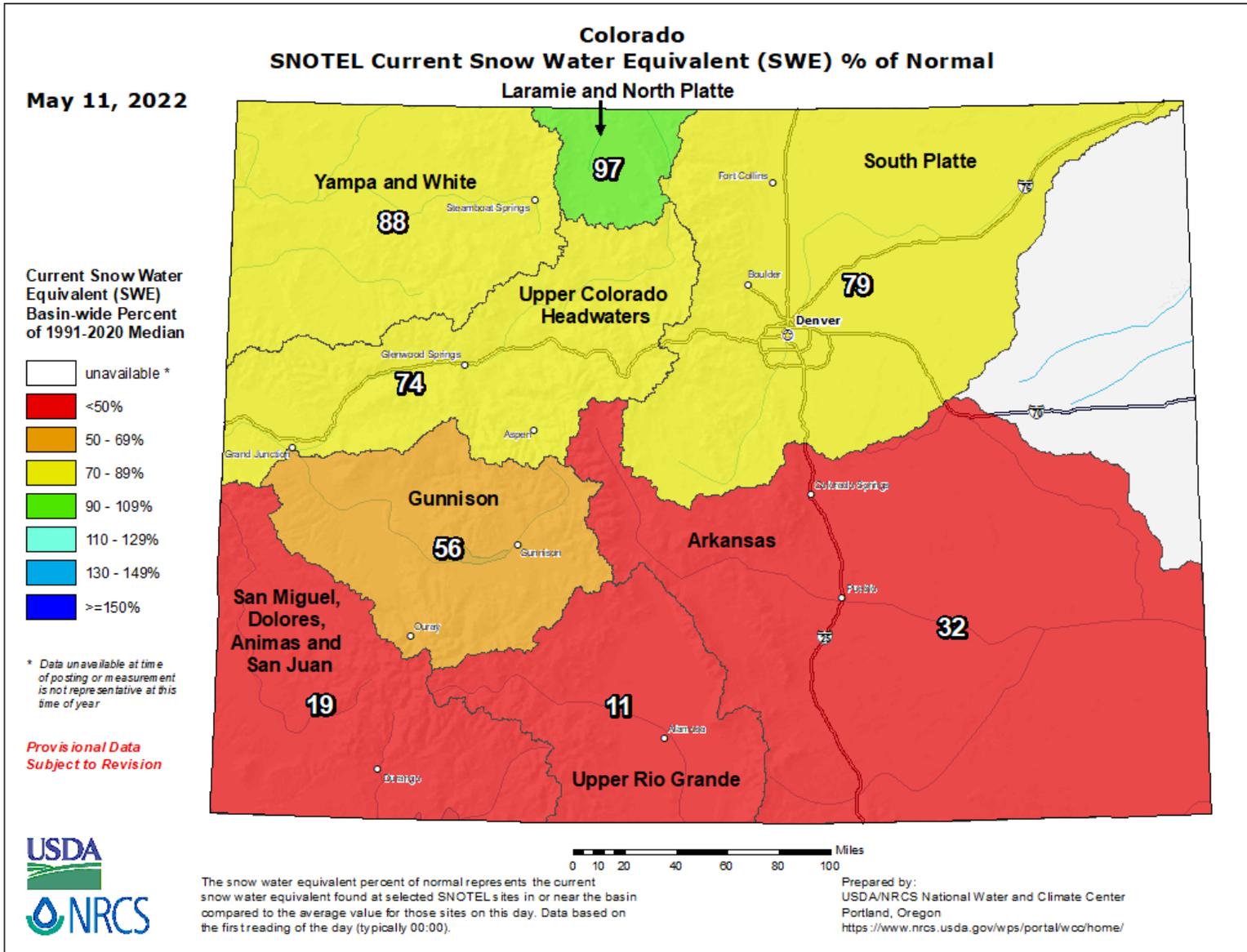
Scenario	Demand (AF)	Poudre Supply (AF)	Horsetooth Supply (AF)	Horsetooth, Carryover for 2023 (AF)
Supply	--	3,297	15,701	4,190
High Demand	19,061	--	--	--
Projected Demand	16,766	--	--	--
Low Demand	15,159	--	--	--

2022 Fort Collins Utilities Treated Water Demands



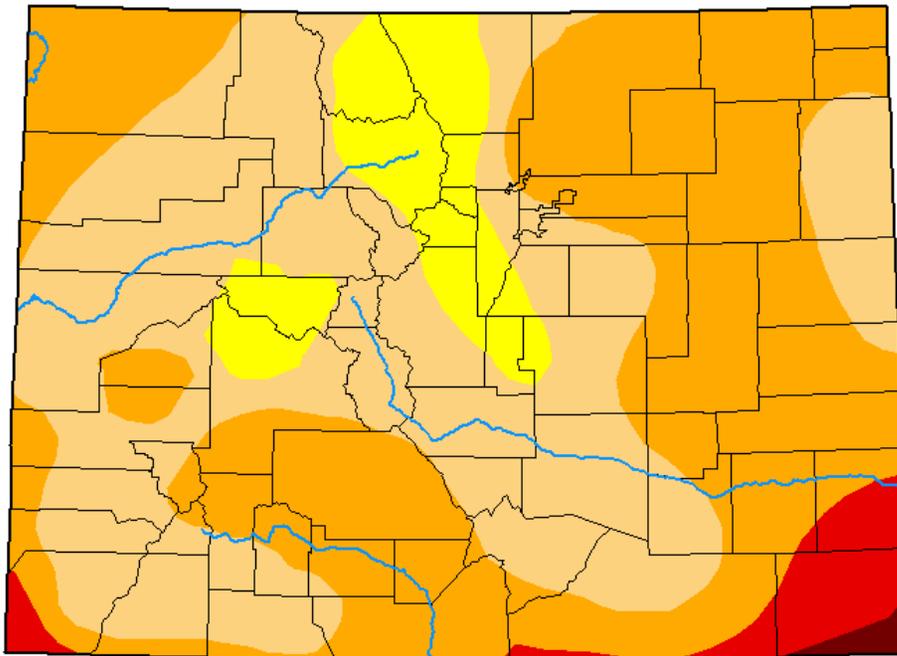
Upper Cache la Poudre Basin SNOTEL - Daily time series for water year 2022





U.S. Drought Monitor Colorado

May 3, 2022
(Released Thursday, May 5, 2022)
Valid 8 a.m. EDT



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:

David Simeral
Western Regional Climate Center



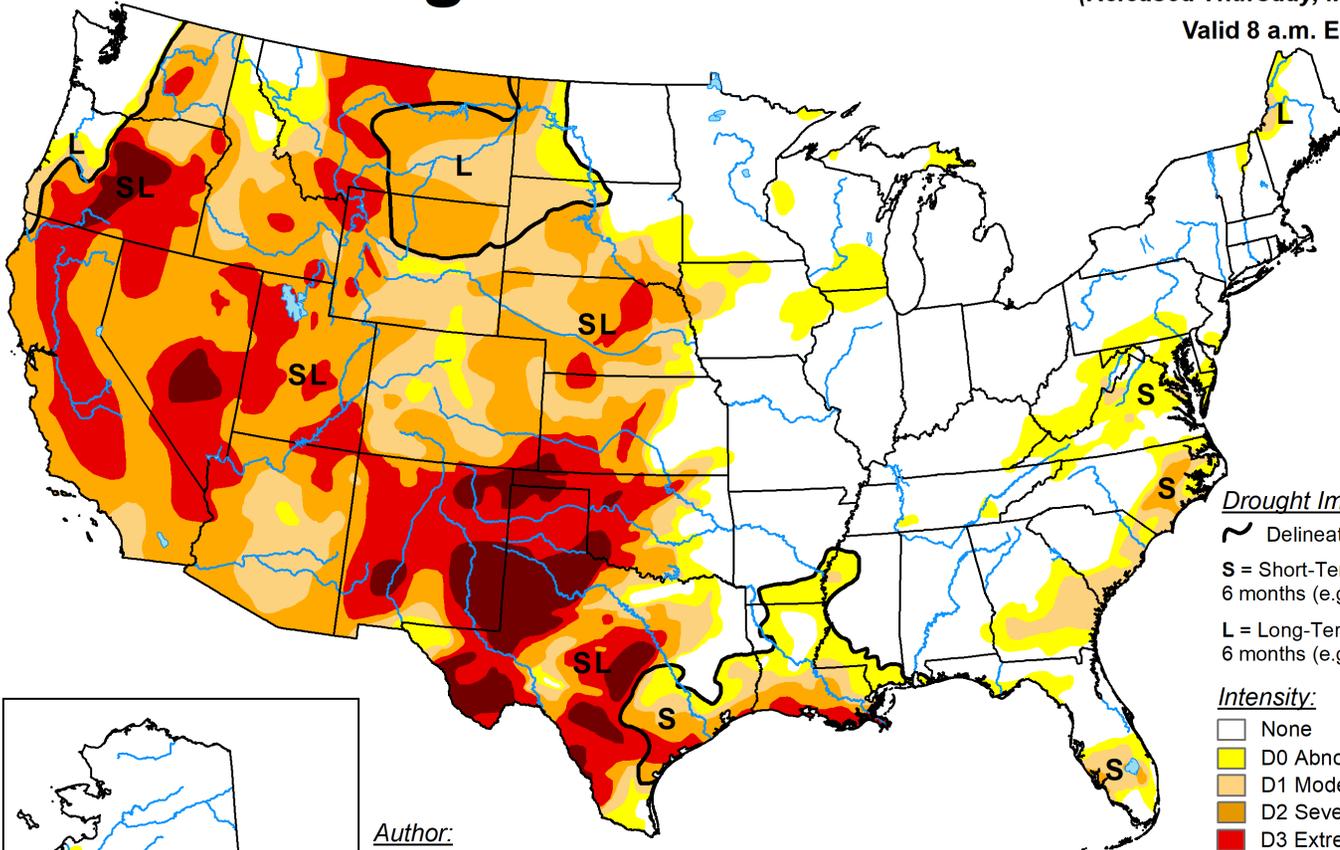
droughtmonitor.unl.edu

U.S. Drought Monitor

May 3, 2022

(Released Thursday, May 5, 2022)

Valid 8 a.m. EDT

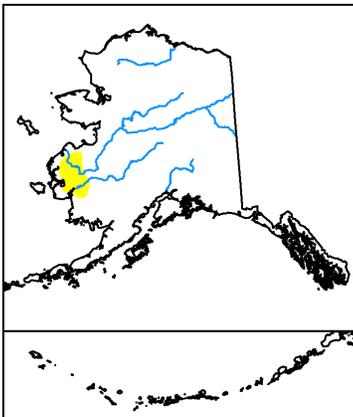


Drought Impact Types:

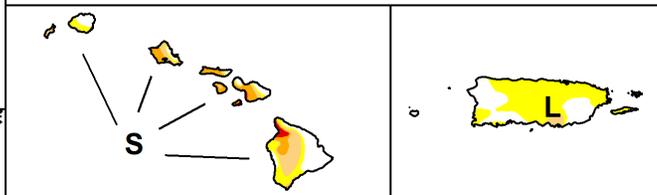
- Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

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



Author:
David Simeral
Western Regional Climate Center



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

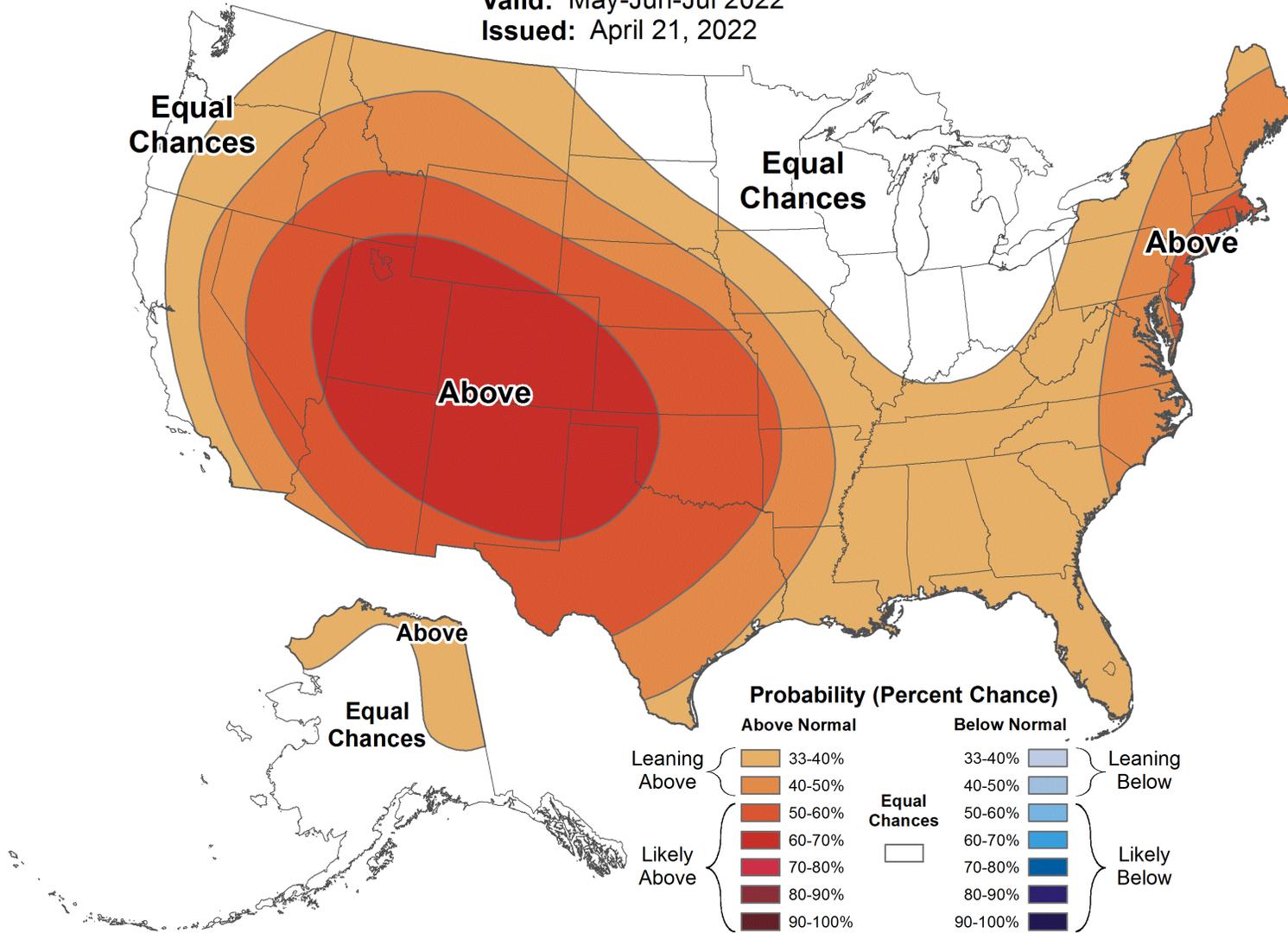


Seasonal Temperature Outlook



Valid: May-Jun-Jul 2022

Issued: April 21, 2022

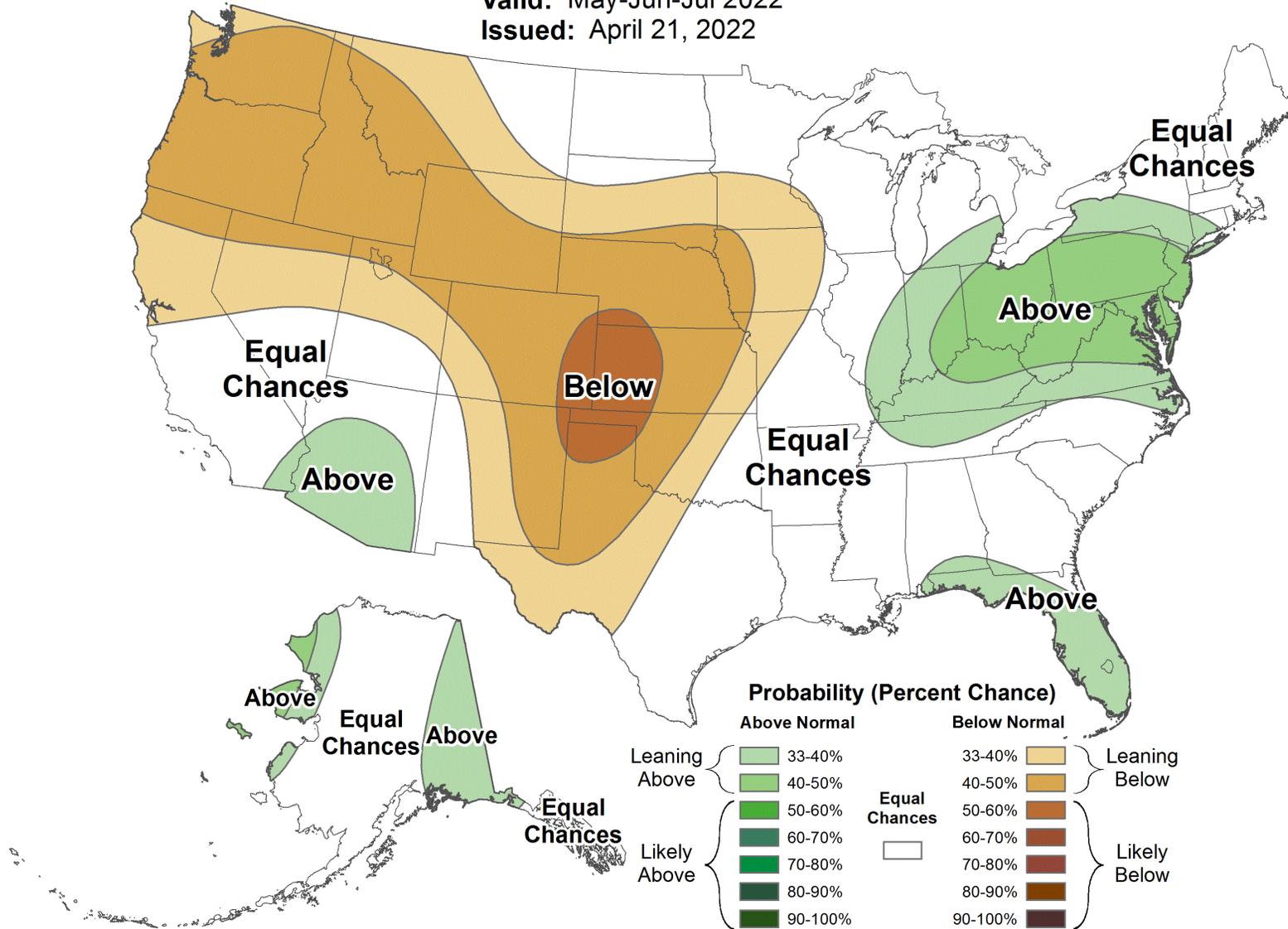




Seasonal Precipitation Outlook



Valid: May-Jun-Jul 2022
 Issued: April 21, 2022



Snowpack and Streamflow Comparisons May 1, 2022



Snow Water Content

% of Average

Colorado's Statewide Snowpack	79%
Upper Colorado River ⁽¹⁾	85%
South Platte Tributaries ⁽²⁾	91%

Snow-Water Content Comparisons (inches)

Watershed	May 1, 2022 Snow-Water Content			May 1 Comparative Snow-Water Content			
	2022	Average	% Avg	2021	2020*	2019	2002
Blue River	12.4	14.1	88%	81%	110%	137%	32%
Upper Colorado River	12.6	15.3	82%	81%	114%	98%	35%
Willow Creek	9.4	10.3	91%	77%	97%	114%	44%
Fraser River	11.9	15.4	78%	94%	114%	106%	36%
Poudre River	12.5	14.1	89%	96%	102%	89%	46%
Big Thompson River	14.5	15.2	96%	106%	112%	97%	37%
St. Vrain River	10.5	11.0	95%	121%	120%	94%	11%
Boulder Creek	9.3	10.8	86%	121%	130%	90%	14%

*Please note that most snow surveys in 2020 were cancelled due to COVID-19, so the 2020 SWE is calculated using only automated SNOTEL stations and is not directly comparable with the other years.

Apr-Jul Maximum, Minimum and Most Probable Streamflow Forecasts (1000 af)

Watershed	Forecast Minimum	Most Probable	Forecast Maximum	Apr-Jul Avg ⁽³⁾	Most Prob % Avg
Blue River	163	224	285	283	79%
Upper Colorado River	149	185	230	226	82%
Willow Creek	30	47	64	50	94%
Fraser River	65	92	119	118	78%
Poudre River	133	206	279	230	90%
Big Thompson River	54	84	114	91	92%
St. Vrain River	50	78	106	90	87%
Boulder Creek	35	47	59	54	87%
South Platte Tributaries	--	415	--	465	89%

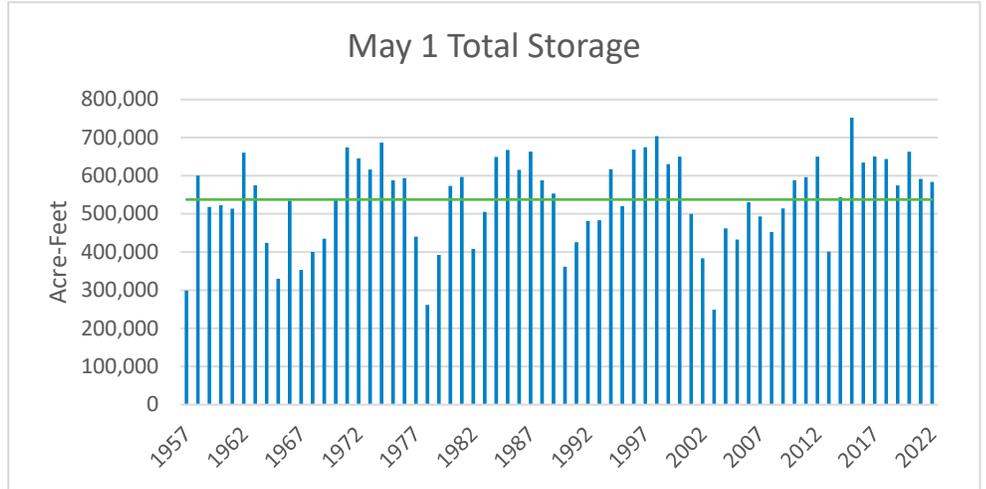
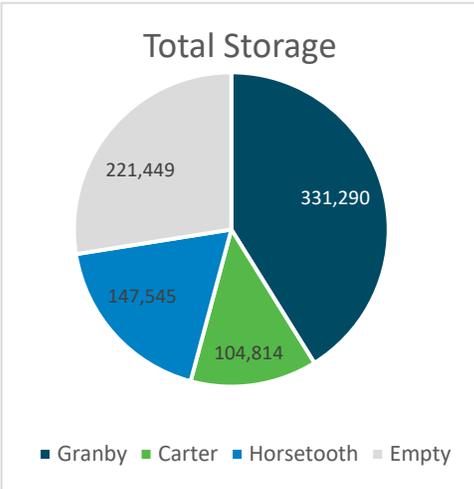
Precipitation within District Boundaries ⁽⁴⁾

	Totals	Average	% Average
April	0.24	1.73	14%
Nov - Apr	3.05	4.65	66%

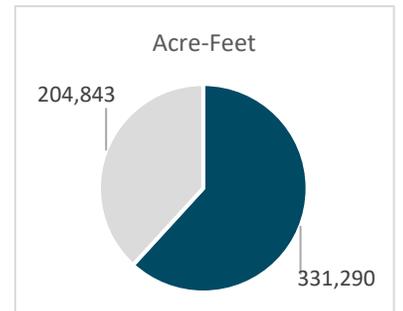
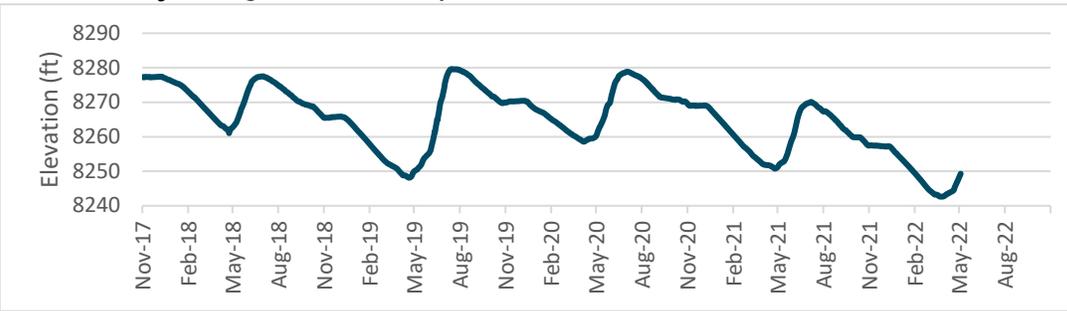
- (1) Includes the Colorado, Willow Creek, Fraser and Blue River Watersheds
 (2) Includes the Poudre, Big Thompson, Saint Vrain and Boulder Creek Watersheds
 (3) Average for the period 1991-2020
 (4) Computed using CoCoRaHS and Northern Water Stations

C-BT Project Storage

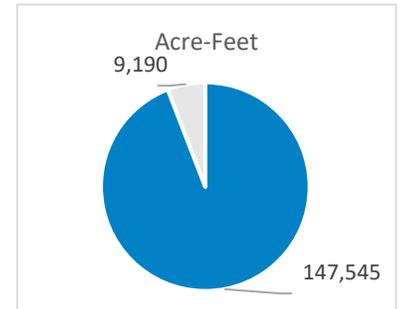
May 1, 2022



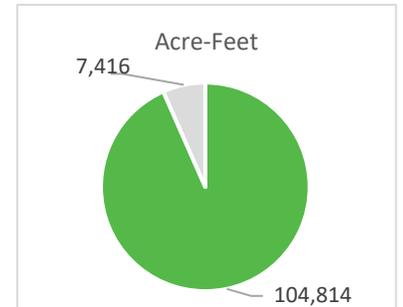
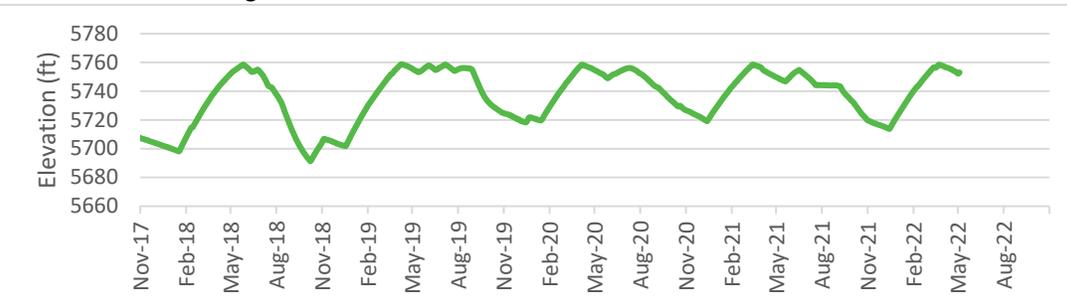
Lake Granby Storage in Lake Granby increased 29,436 acre-feet last month



Horsetooth Reservoir Storage in Horsetooth Reservoir decreased 2,737 acre-feet last month



Carter Lake Storage in Carter Lake decreased 5,818 acre-feet last month

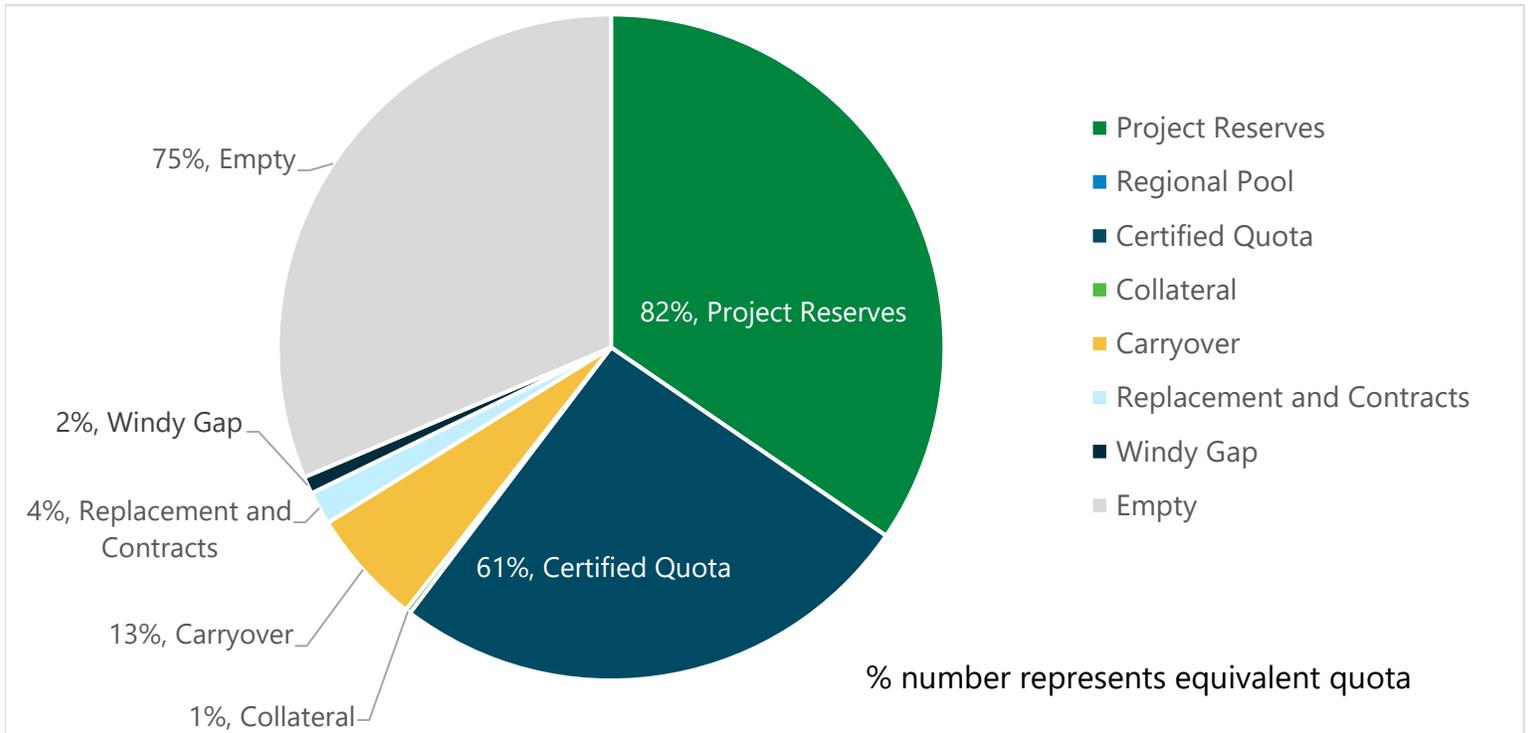


C-BT Project Allocated Water

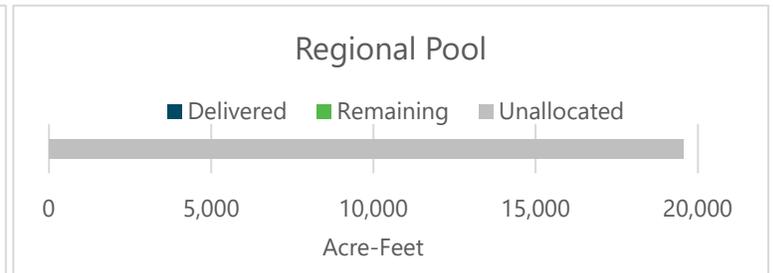
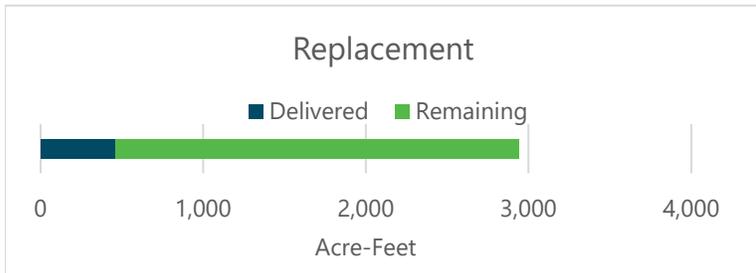
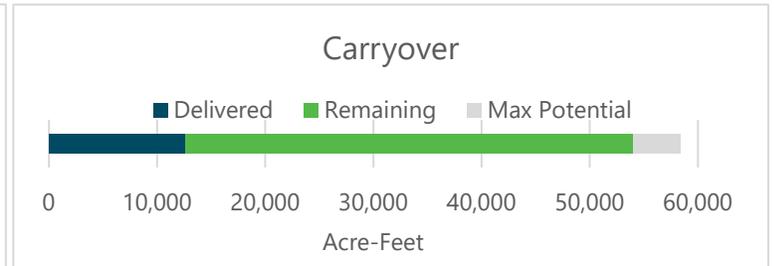
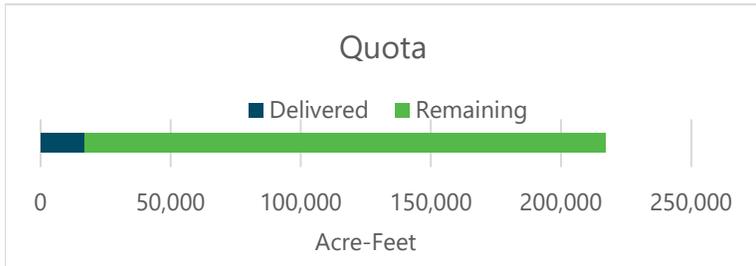
May 1, 2022



C-BT Active Storage



C-BT Delivery Obligations

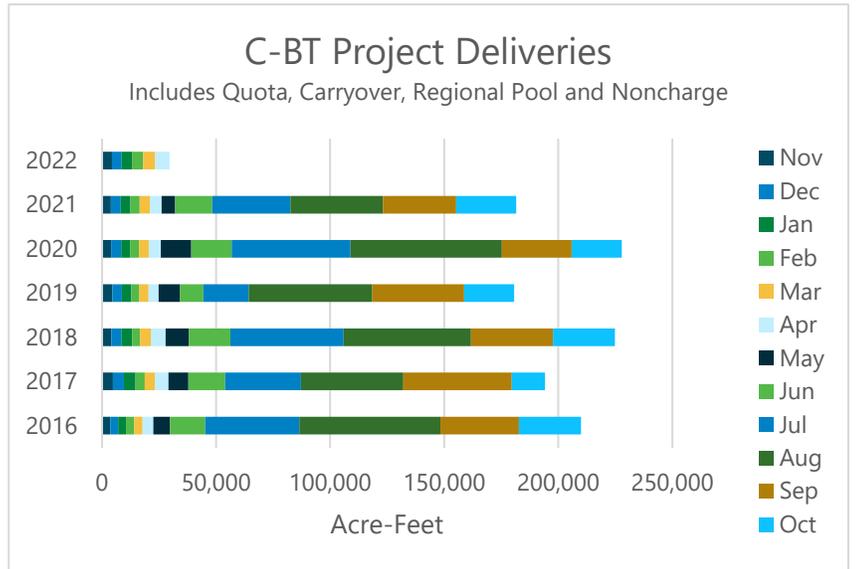
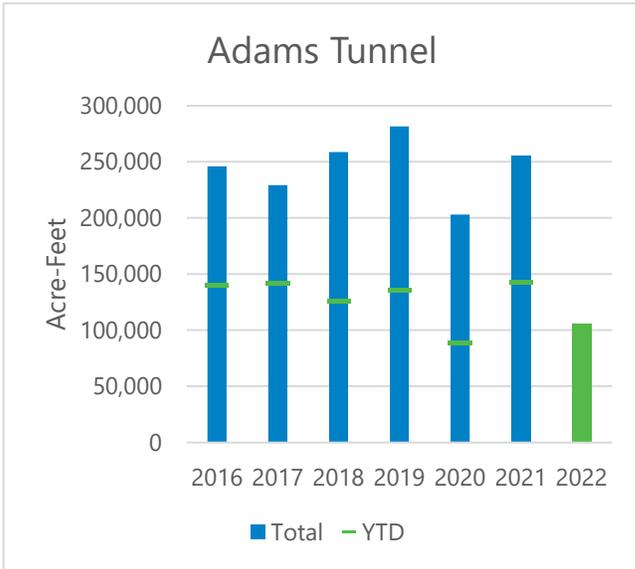


Notes:

- 1) Quota set at 70%
- 2) Carryover - Entities certified 54,014 Acre-Feet of Carryover for WY2022.
- 3) Regional Pool - Additional water accrued to the Regional Pool on April 30, 2022. There is 19,547 Acre-Feet in the Regional Pool for WY 2022.

C-BT Project Deliveries

May 1, 2022



Deliveries by Area

Deliveries by Use

