



Utilities

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MEMORANDUM

DATE: October 13, 2021

TO: Water Commission

FROM: Michael Neale, MSc, Water Resources Engineer
Donnie Dustin, P.E., Water Resources Manager

RE: **September 2021 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 September 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 WY2021

- Water Supply- The supply outlook was fair during September. Water supply intake for September consisted of 70% from Horsetooth and 30% from the Cache la Poudre River. Over the period of Sept. 4th – Sept. 10th, the Water Treatment Facility reduced intake from the Poudre, and experienced two days of no intake, due to poor water quality from storm runoff over the Cameron Peak fire burn area.
- Water Demand- Demands for the month of September were slightly above projected. Please refer to the attached graphs and tables. Water demands within the Water Utility service area for the month:
 - Water demand for September: 103.4% of the projected demand.
 - Water demand for calendar year: 97.3% of the projected demand.

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

The conditions measured at the Fort Collins weather station for September:

- Mean daily high temperature recorded for the month: 83.4°F.
 - Long term average daily high temperature for the month is: 75.6 °F.
- Total recorded monthly precipitation: 0.56 inches.
 - Long term average precipitation for the month: 1.35 inches.

Reservoir Storage: (See attached sheet from Northern Water)

- Colorado-Big Thompson project reservoirs (Granby, Carter, and Horsetooth): 76% full.
- Horsetooth Reservoir: 80% full.
- Joe Wright Reservoir: 80% full (125% of average based on 13 years of data).

Poudre River flow: 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 is no longer in a drought.
- 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.
- Leaning above normal temperature.

Other Water Supply Considerations:

- Utilities staff continues to monitor the impacts to the Poudre River basin from the Cameron Peak fire and impacts to the Upper Colorado River basin from the Troublesome fire. Water quality impacts will likely subside into the winter months.
- The Colorado River basin remains in a drought. Utilities staff will continue to monitor conditions and potential curtailments in the new water year.

City of Fort Collins Utilities

ASSUMPTIONS

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

DEMANDS (treated only)

- Projected Demand is expected demand based on GPCD and population estimates
- High Demand applies a monthly worse case factor to Projected Demand

SUPPLIES

Poudre

- Supply 1 is a fire impacted Poudre that is 62% of the annual average. Monthly percentages of average are Nov-Mar 95%, Apr 85%, May-Jun 5%, Jul 25%, Aug 60%, Sep 70%, Oct 80%.
- Supply 2 does not include any Poudre water

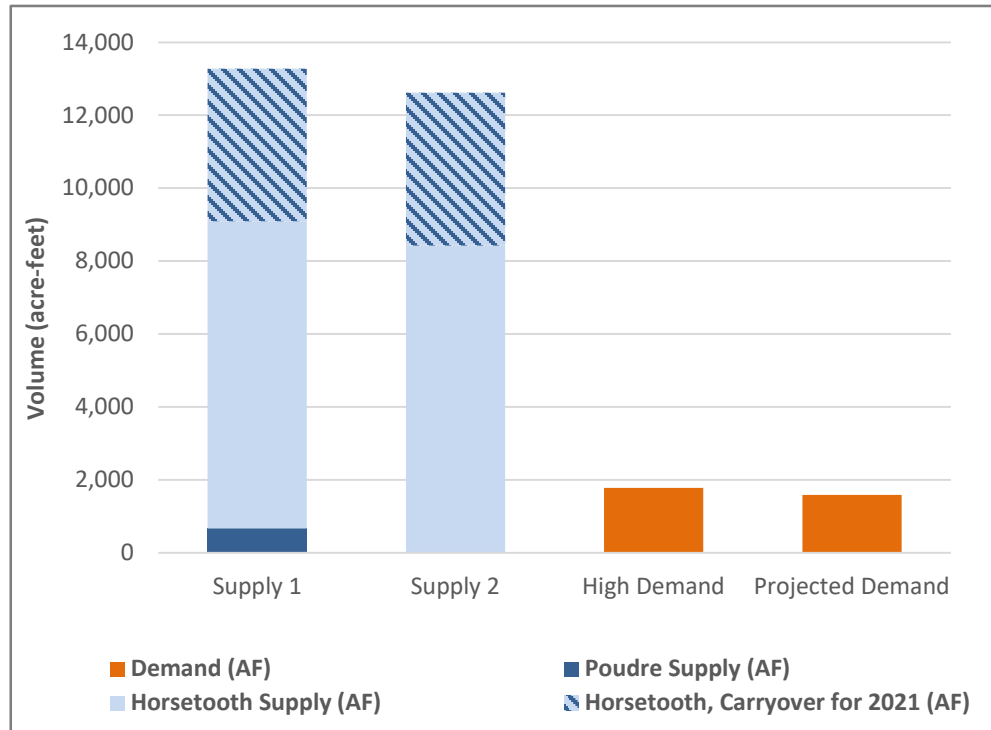
Horsetooth Reservoir

- Horsetooth Supplies include CBT, NPIC MU & Windy Gap
- CBT supply is 70% quota, 2.50 NPIC MU allocation/share
- All remaining Horsetooth raw water obligations have been deducted. A 1,500 AF exchange of Joe Wright water for CBT is included.

Horsetooth Carryover Objective

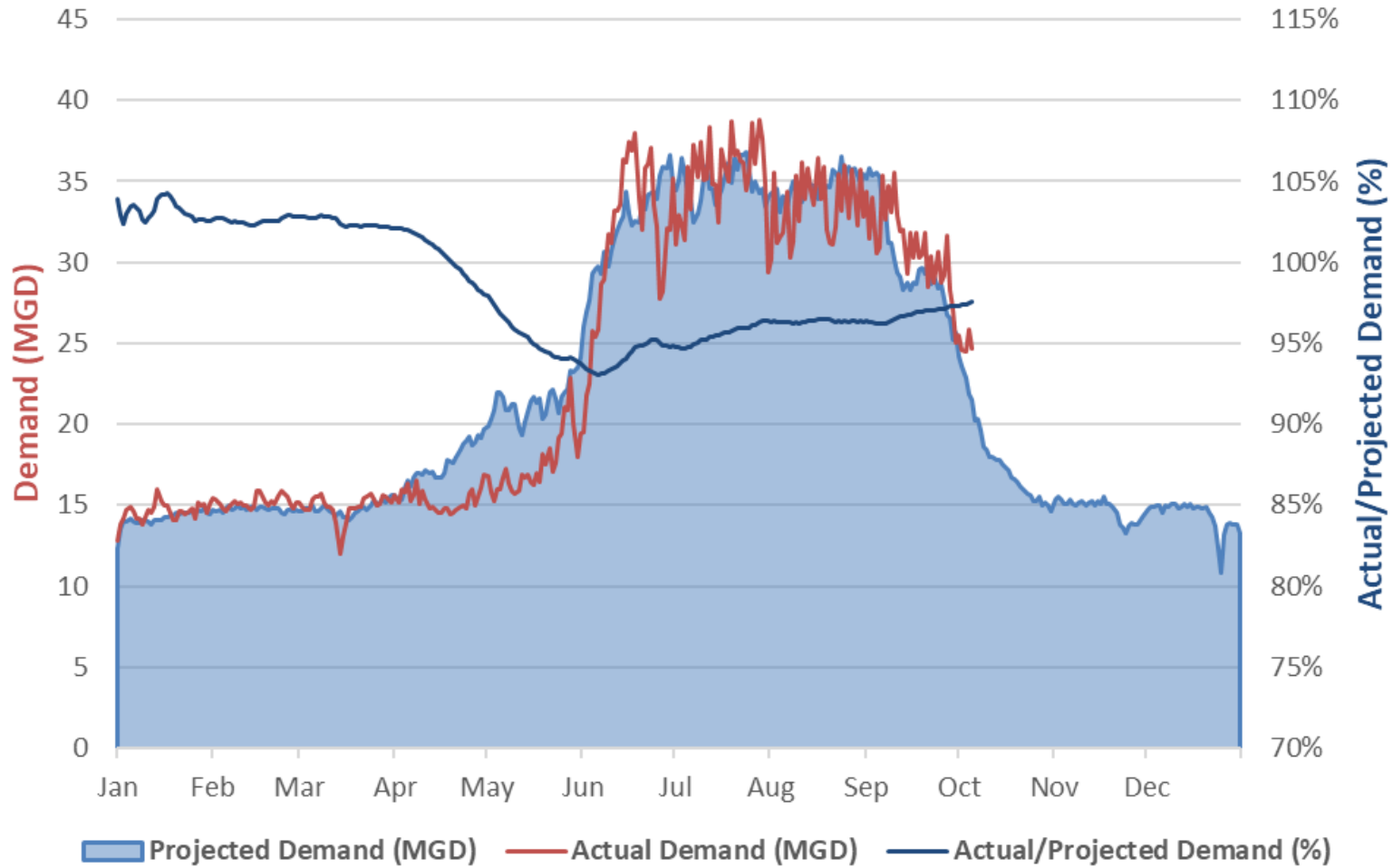
- Amount from this year's Horsetooth supplies to carryover for next year
- Max amount allowable is 4,190 AF before 10% shrink

Remaining Water Demand and Supply from October 06 - October 31, 2021



Scenario	Demand (AF)	Poudre Supply (AF)	Horsetooth Supply (AF)	Horsetooth, Carryover for 2021 (AF)
Supply 1	--	663	8,425	4,190
Supply 2	--	--	8,425	4,190
High Demand	1,776	--	--	--
Projected Demand	1,588	--	--	--

2021 Fort Collins Utilities Treated Water Demands



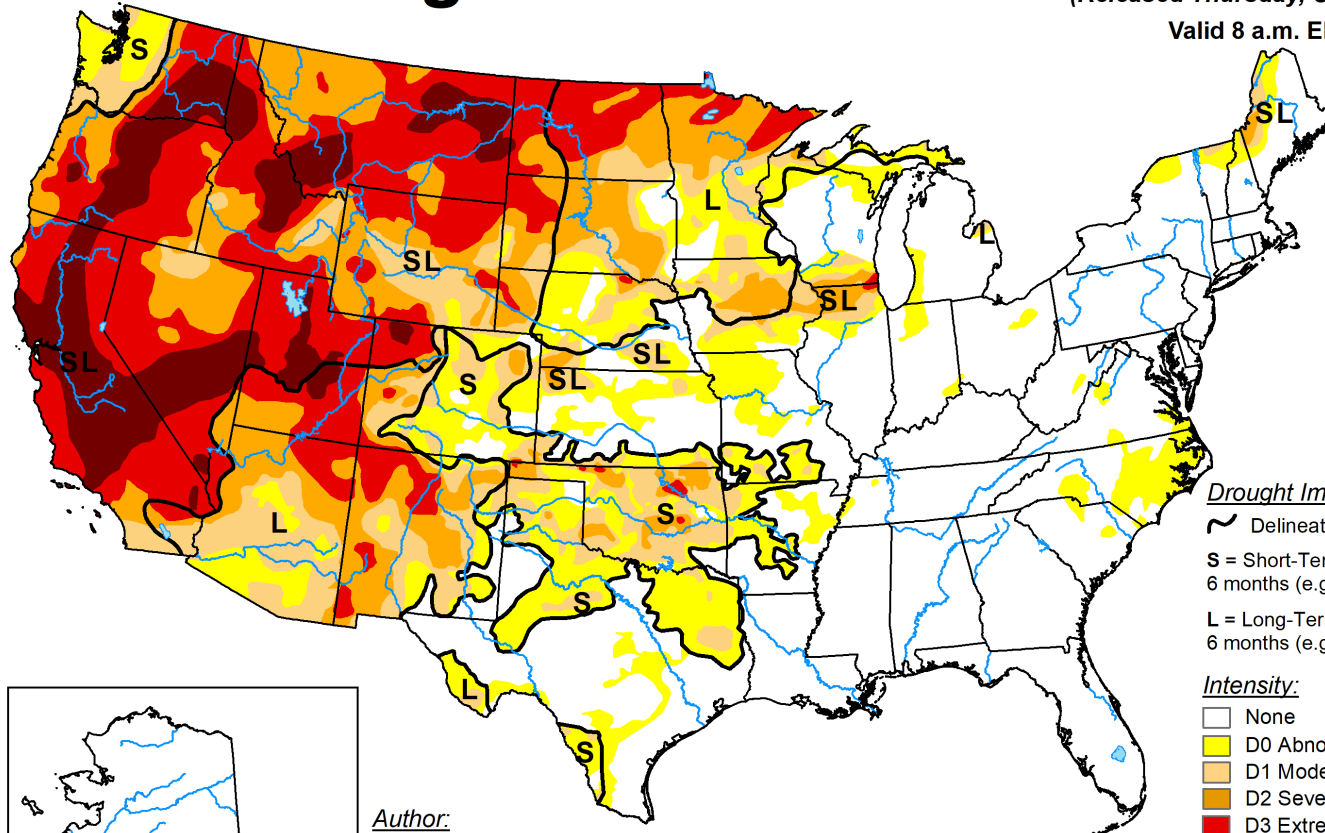


**City of Fort Collins Utilities
Treated Water Monthly Summary
2021**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
WTF Water Supply (MG)													
From Poudre	304.5	290.0	288.6	155.0	275.5	403.0	241.8	169.6	324.3				2,452.3
From Horsetooth	206.3	186.0	218.7	359.0	330.8	681.8	1,019.1	1,036.1	752.1				4,789.9
Total Raw Water	510.8	476.0	507.2	514.0	606.4	1,084.9	1,260.8	1,205.7	1,076.4				7,242.1
Demands (MG)													
WTF Production	489.7	451.6	478.1	492.0	582.7	1,039.1	1,211.4	1,156.6	1,033.1				6,934.5
Change in Storage	9.0	-1.1	-1.1	5.0	-3.9	4.4	-0.9	0.2	0.5				
Demand on WTF	480.7	452.7	479.2	487.1	586.7	1,034.7	1,212.3	1,156.4	1,032.6				6,922.3
From Soldier Canyon	10.7	10.3	23.0	21.8	80.7	264.0	340.7	299.1	257.3				1,307.4
To Soldier Canyon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
To FC-Lov/NWCWD	-39.8	-37.0	-40.4	-49.6	-123.7	-357.2	-457.9	-417.0	-356.7				-1,879.2
For City	451.6	426.0	461.8	459.3	543.7	941.6	1,095.1	1,038.4	933.2				6,350.5
Daily Deliveries to City (MG)													
Max During Month	16.0	15.9	15.7	16.9	22.8	38.0	38.8	36.4	35.5				38.8
Min During Month	12.8	14.7	12.0	14.5	15.2	19.5	29.4	30.2	25.0				12.0
Avg During Month	14.6	15.2	14.9	15.3	17.5	31.4	35.3	33.5	31.1				23.2
Monthly Deliveries (Ac-Ft)													
Projected	1,351	1,268	1,407	1,605	2,038	2,962	3,317	3,311	2,770	1,700	1,357	1,367	24,453
Actual	1,386	1,307	1,417	1,409	1,668	2,890	3,361	3,187	2,864				19,489
Ratio	103%	103%	101%	88%	82%	98%	101%	96%	103%				80%
Year to Date Deliveries (Ac-Ft)													
Projected	1,351	2,619	4,025	5,631	7,668	10,630	13,947	17,258	20,028	21,728	23,086	24,453	24,453
Actual	1,386	2,693	4,110	5,520	7,188	10,078	13,438	16,625	19,489				19,489
Ratio	103%	103%	102%	98%	94%	95%	96%	96%	97%				80%

U.S. Drought Monitor

October 5, 2021
 (Released Thursday, Oct. 7, 2021)
 Valid 8 a.m. EDT

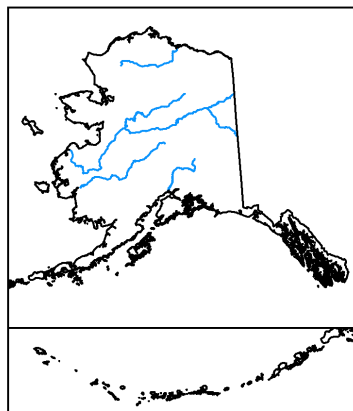


Drought Impact Types:

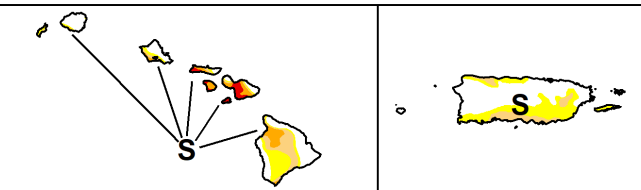
- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

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



Author:
 Brian Fuchs
 National Drought Mitigation 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>



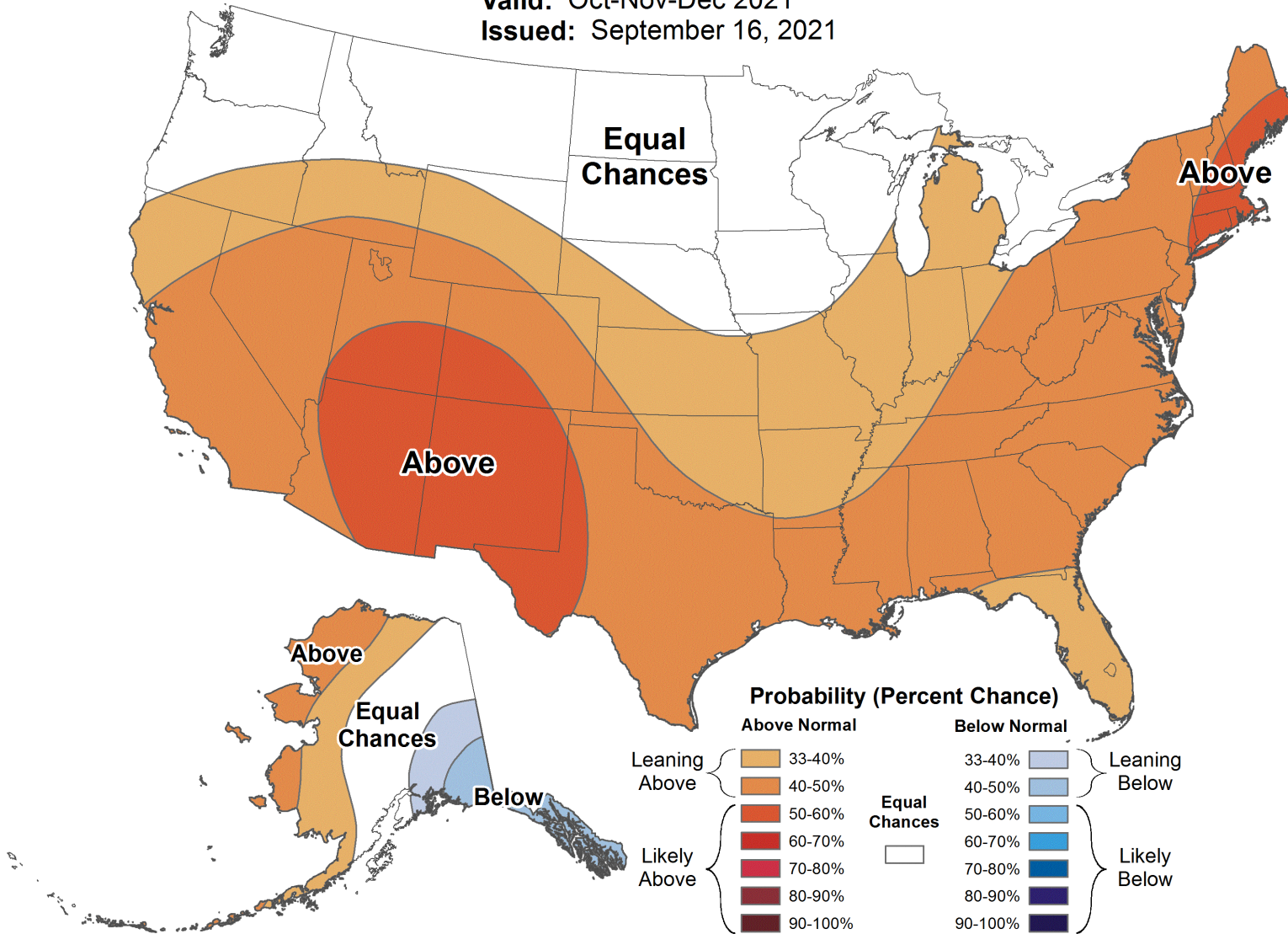
droughtmonitor.unl.edu



Seasonal Temperature Outlook



Valid: Oct-Nov-Dec 2021
 Issued: September 16, 2021

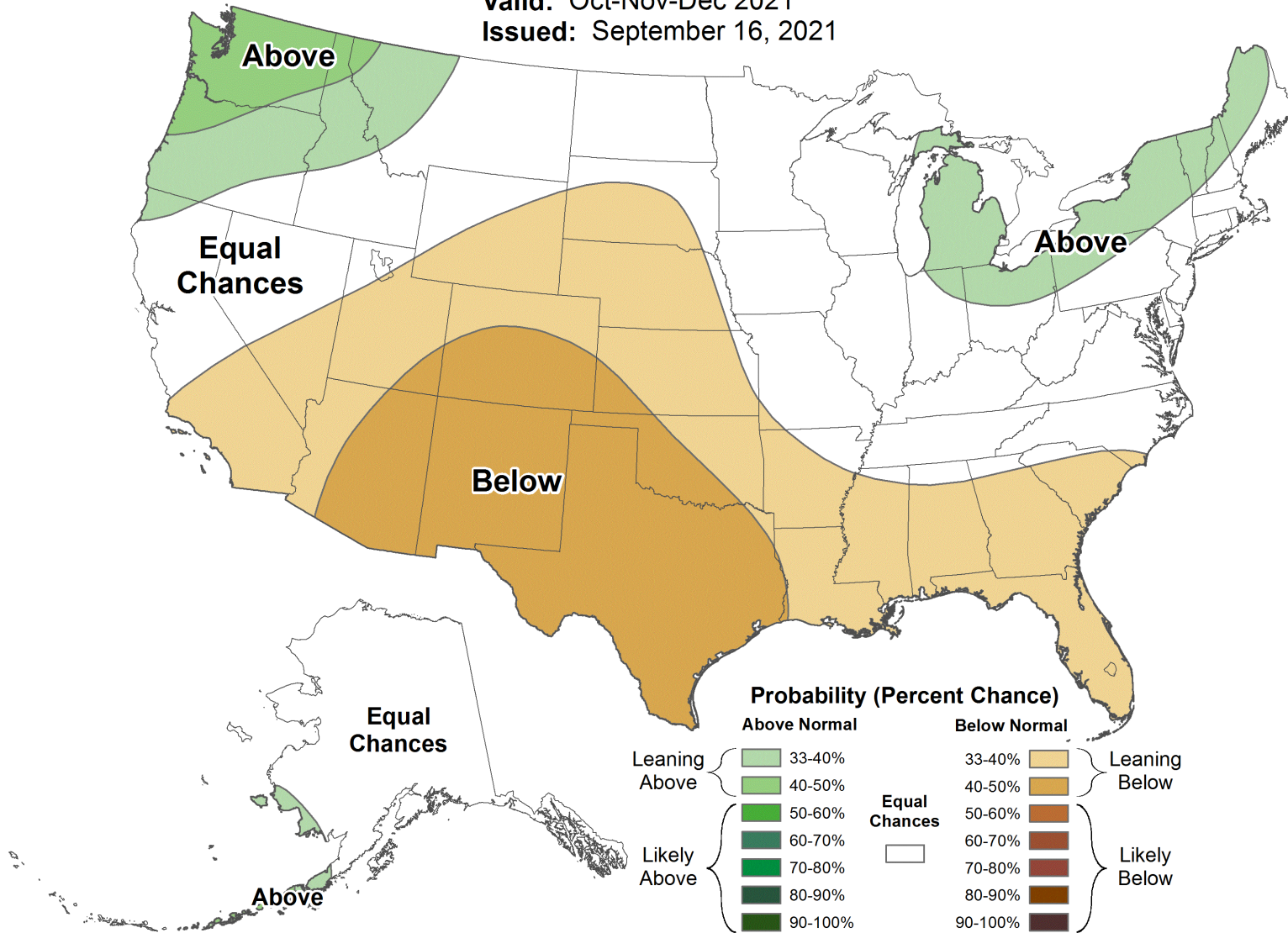




Seasonal Precipitation Outlook

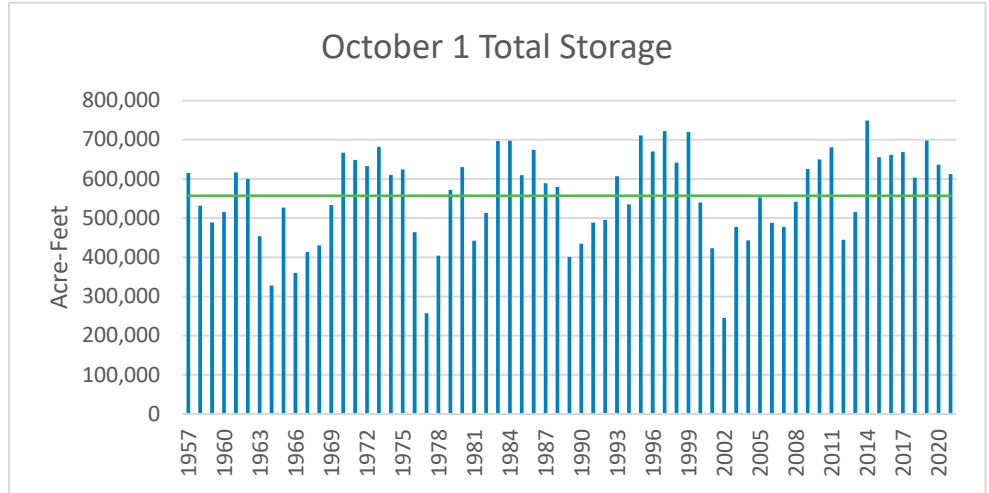
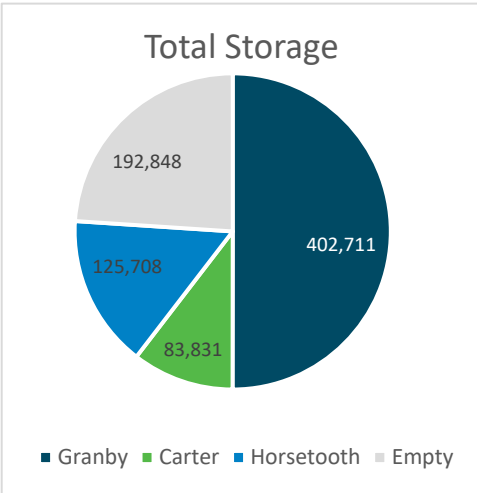


Valid: Oct-Nov-Dec 2021
 Issued: September 16, 2021

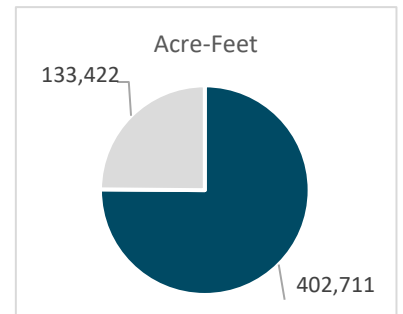
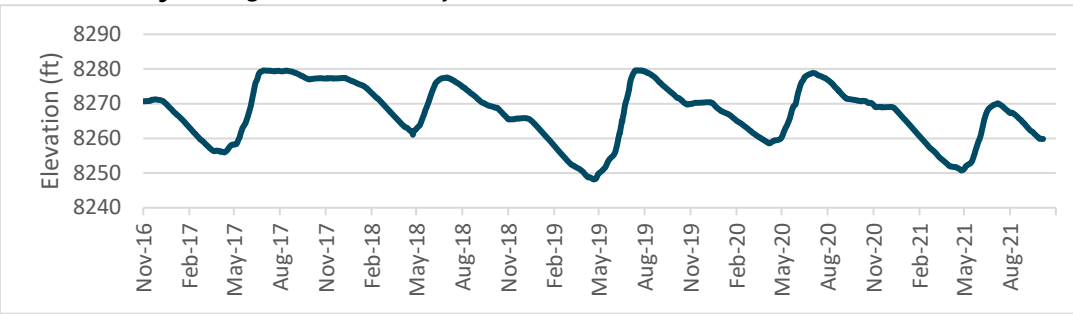


C-BT Project Storage

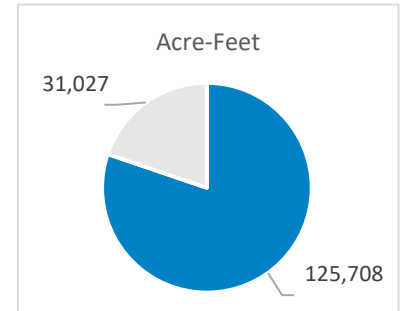
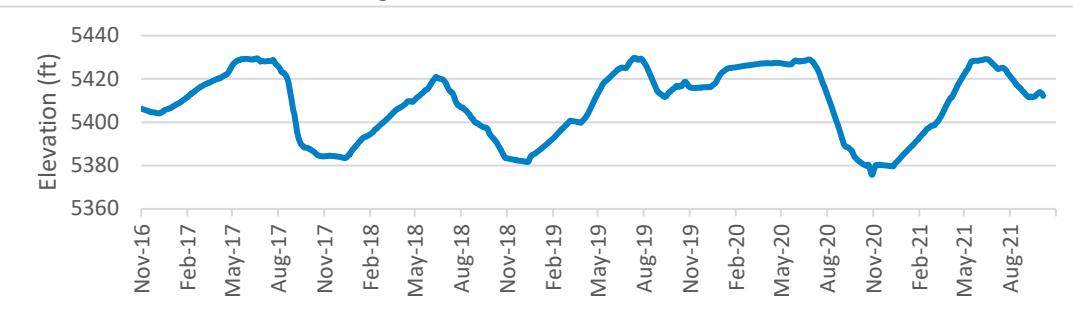
October 1, 2021



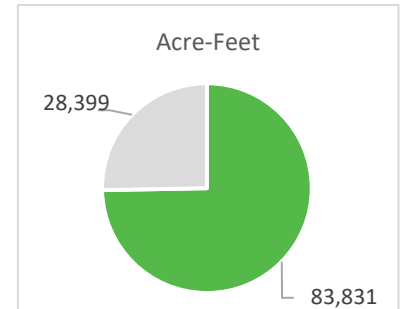
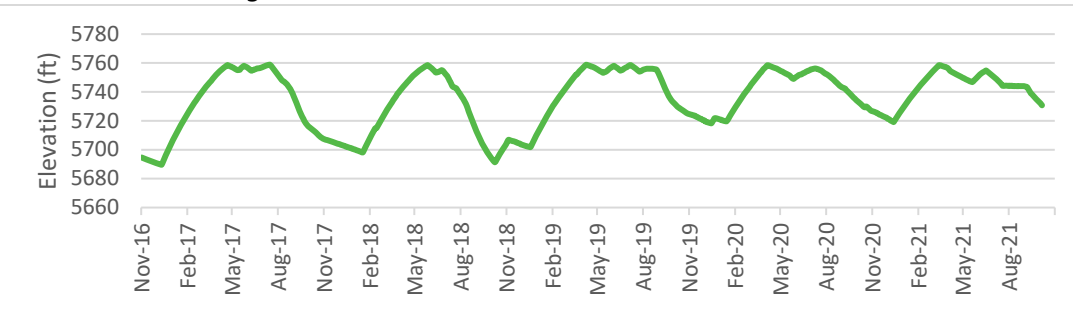
Lake Granby Storage in Lake Granby decreased 26,121 acre-feet last month



Horsetooth Reservoir Storage in Horsetooth Reservoir increased 1,299 acre-feet last month



Carter Lake Storage in Carter Lake decreased 11,625 acre-feet last month

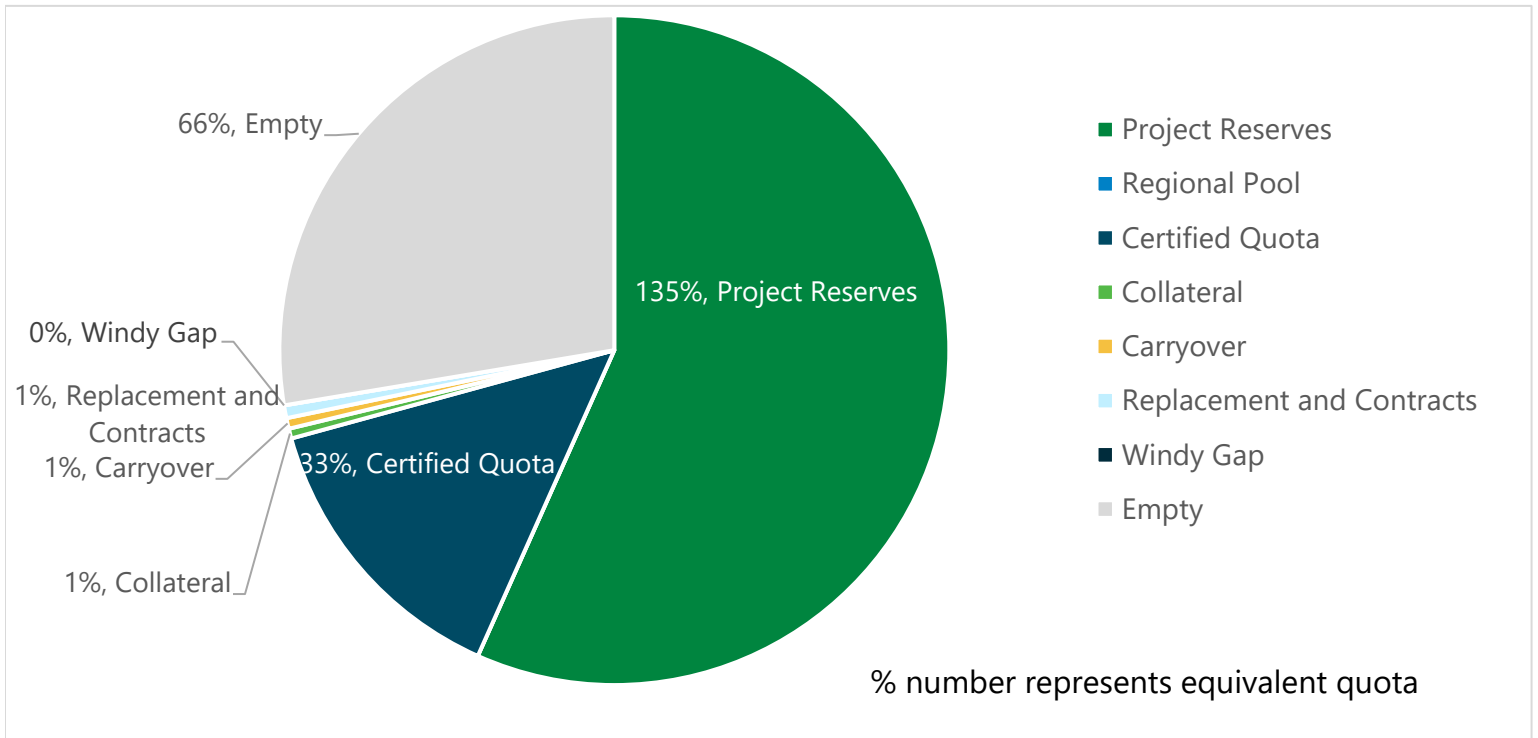


C-BT Project Allocated Water

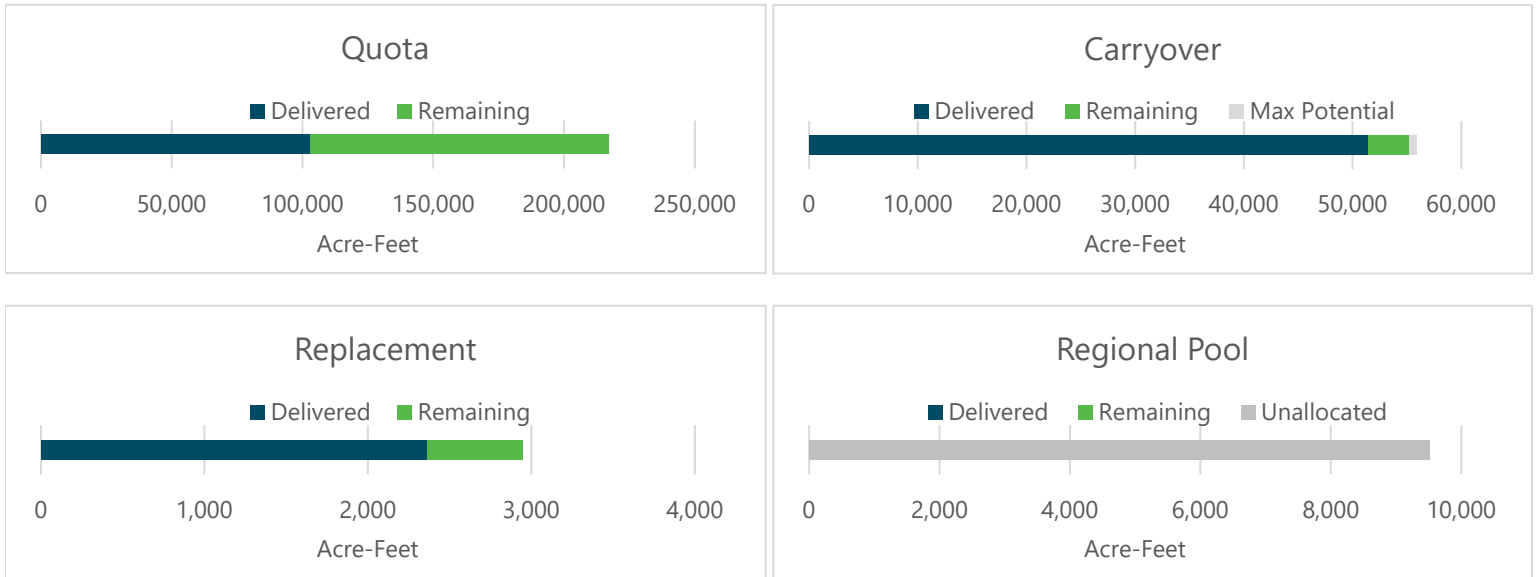
October 1, 2021



C-BT Active Storage



C-BT Delivery Obligations

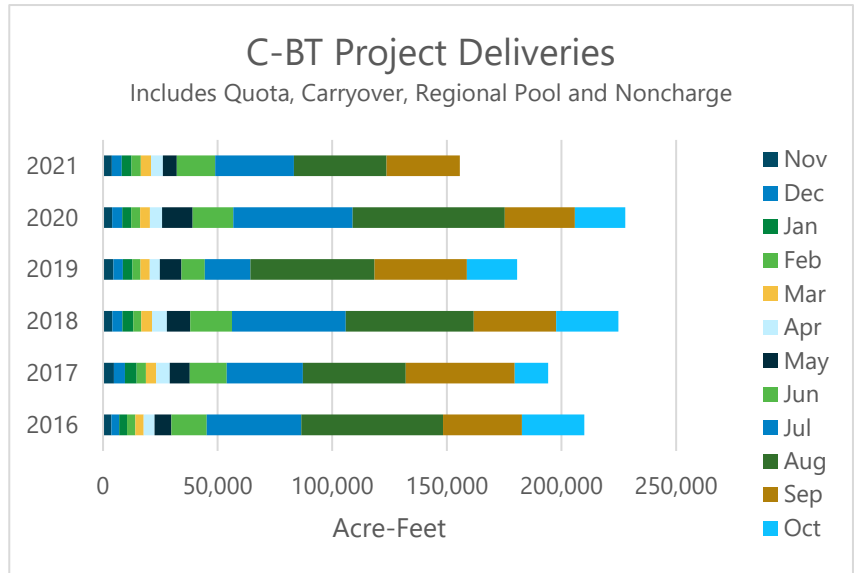
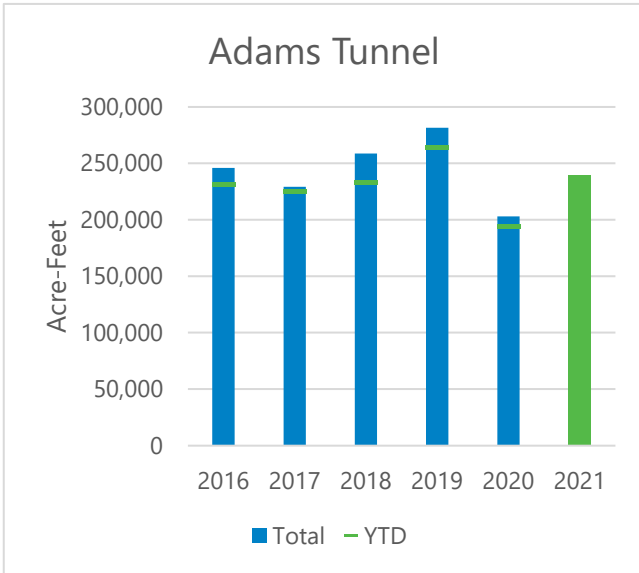


Notes:

- 1) Quota set at 70%
- 2) Carryover - Entites certified 55,240.5 Acre-Feet of Carryover for WY2021.
- 3) Regional Pool - Additional water acrued to the Regional Pool on April 30, 2021. There is 9,510.3 Acre-Feet in the Regional Pool for WY 2021.

C-BT Project Deliveries

October 1, 2021



Deliveries by Area

Deliveries by Use

