



EXETER PUBLIC WORKS DEPARTMENT

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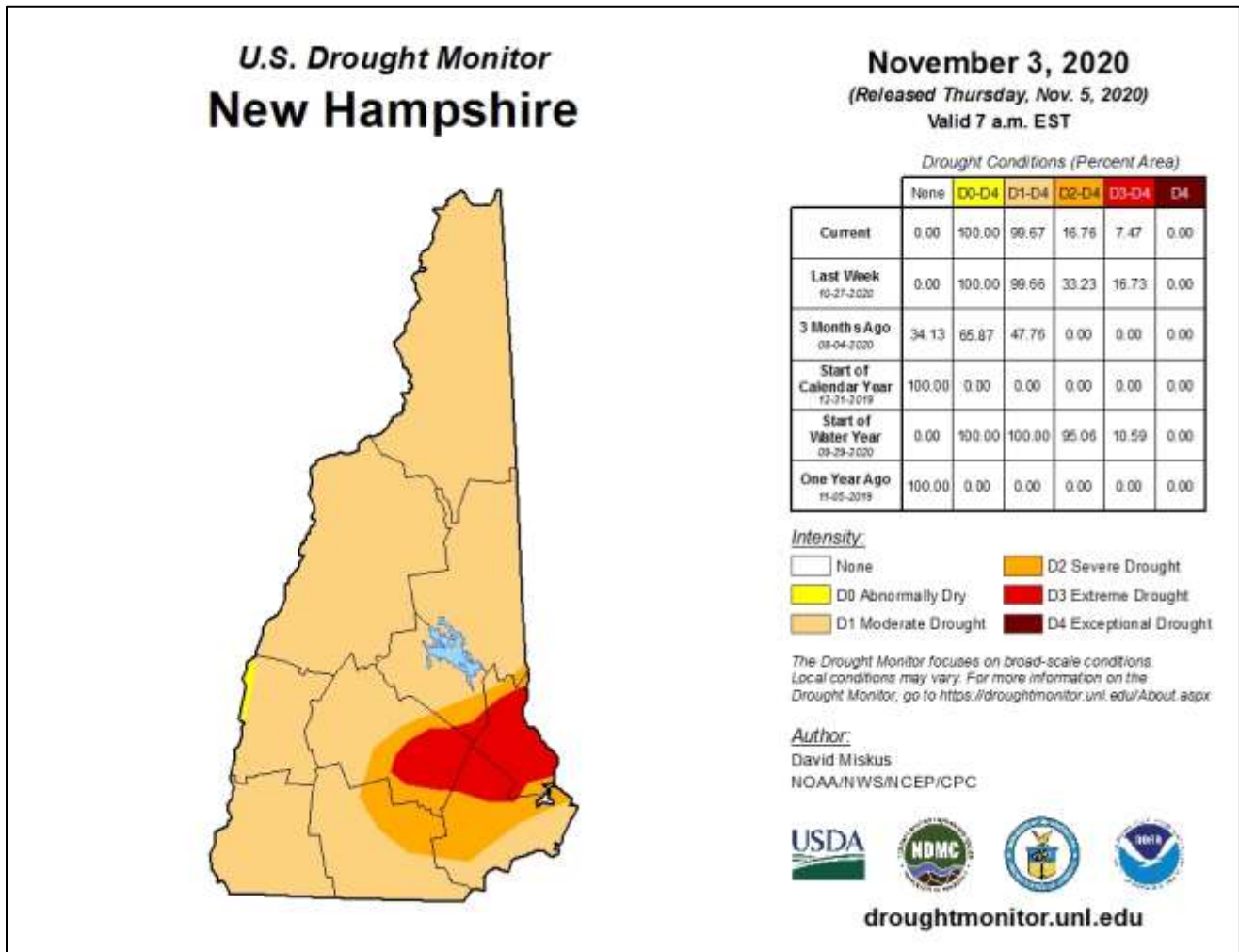
www.exeternh.gov

MEMO

DATE: November 5, 2020
 TO: Russell Dean, Town Manager
 FROM: Jennifer R. Perry, P.E., Public Works Director
 RE: Water Resources Status Update & Recommended Water Use Restrictions

New Hampshire Drought Conditions

The U.S. Drought Monitor dated November 3, 2020, indicates there has been some drought improvement; the extent of extreme drought and severe drought areas in Rockingham County has been reduced. Roughly the northern half of Exeter is in severe drought, and the southern half is in moderate drought. The Exeter Select Board issued Level 4 outdoor watering ban on August 24. We recommend **continuing restrictions at Level 4, which bans outdoor watering**. Forecasts are not indicating significant precipitation this fall; it is unlikely that surface waters will be replenished or groundwater recharged before freezing conditions.

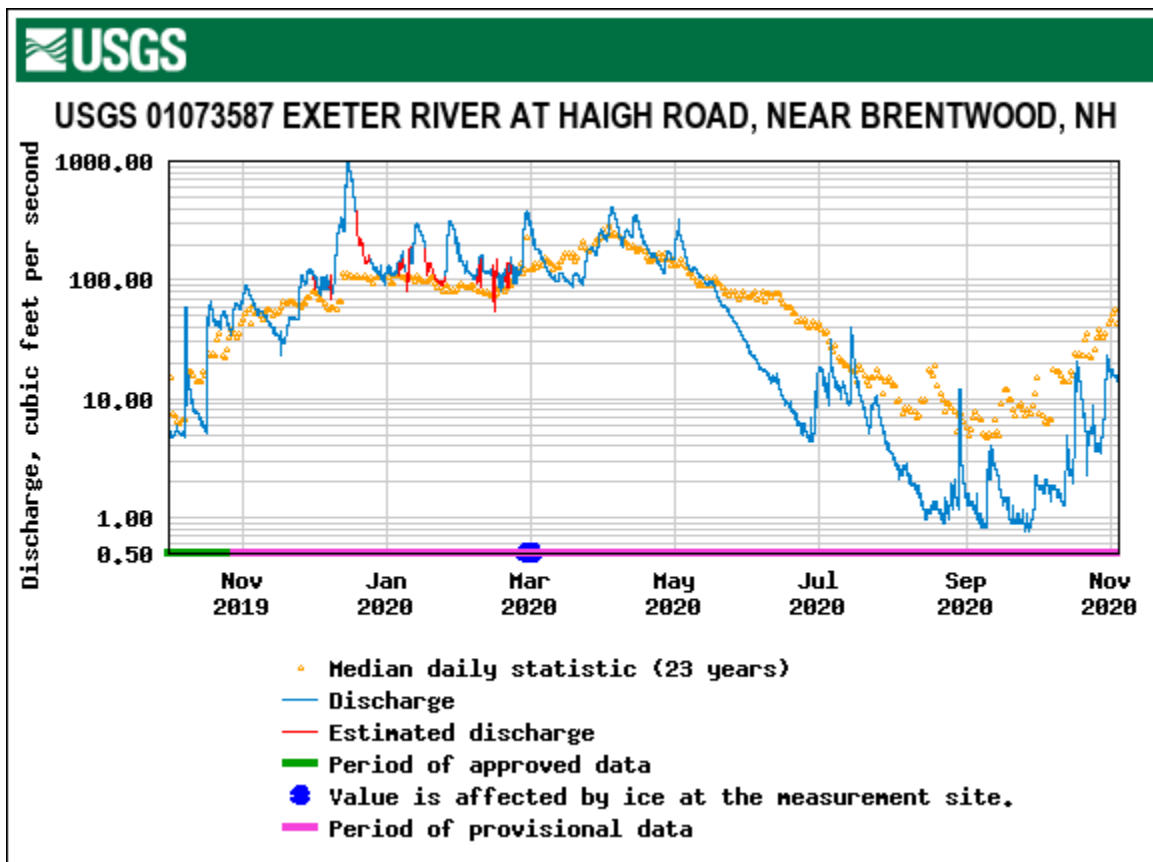


The U.S. Drought Monitor is jointly produced by National Drought Mitigation Center at University of Nebraska-Lincoln, U.S. Department of Agriculture, and National Oceanic and Atmospheric Administration. Map courtesy of NDMC.

River Flow

October witnessed small but frequent rain events and increasing flows in the Exeter River. The USGS stream flow gauge on the Exeter River at Haigh Road in Brentwood (drainage area 63.5 square miles) indicates current instantaneous discharge is 14.3 cubic feet per second (cfs) (at 10:15 pm on 11/4/2020) which is just below the 25th percentile. The minimum flow on this date was 3.48 cfs in 2002 and the maximum was 730 in 2019. The water supply intake for the Town of Exeter is located several miles downstream, with a contributing watershed of 107 square miles. The flow rates at the intake location are estimated to be 1.69 times higher than at Haigh Road, or approximately 24.2 cfs (15.6 MGD).

Exeter River flow rates are **below normal** for this time of year.



Groundwater Levels

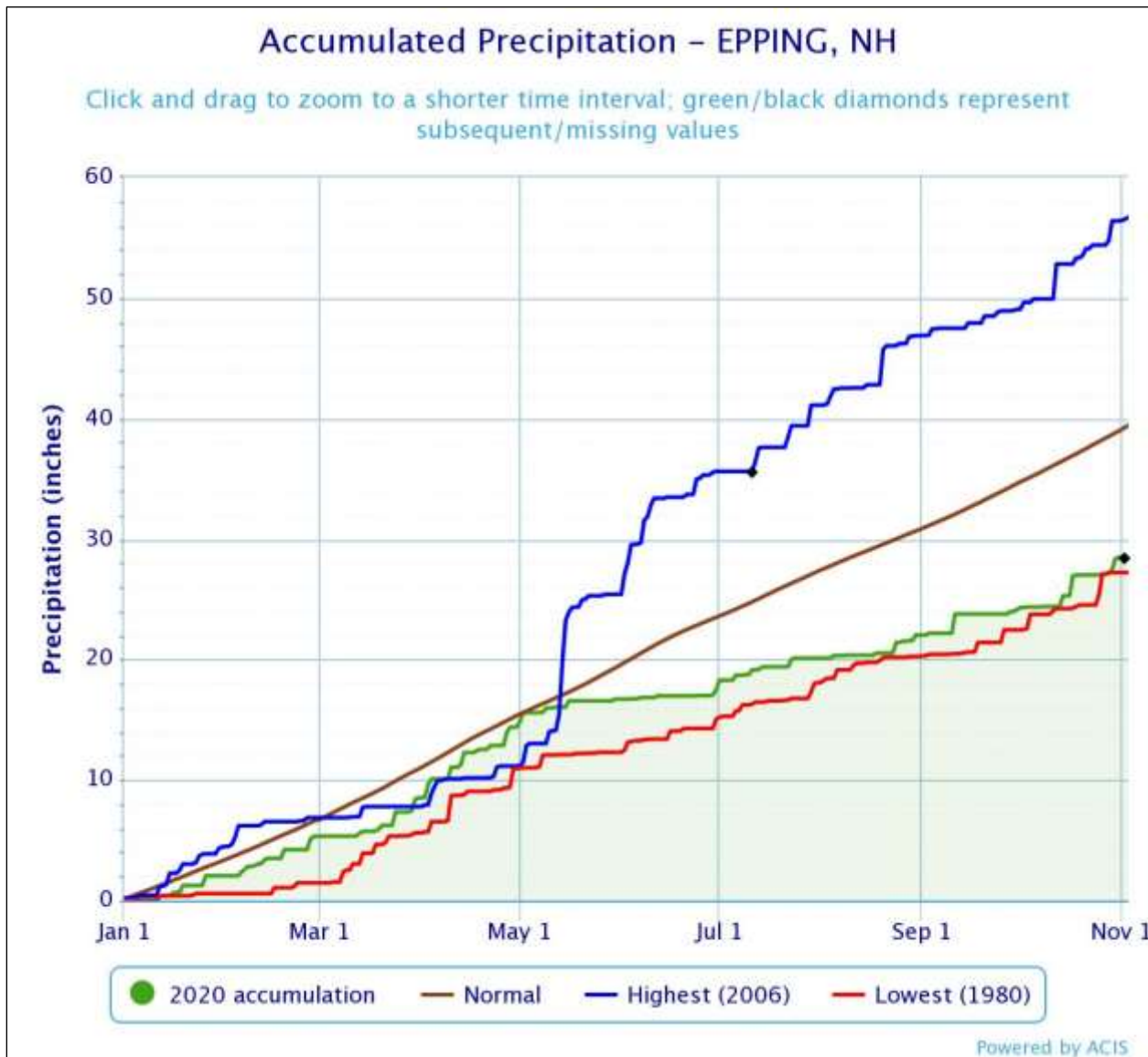
Groundwater levels for long-term monitoring wells in the region vary by location. The USGS wells in Epping, Concord and Nashua range from below normal to low.

Current groundwater levels are considered **below normal to low** for this time of year.

Precipitation

Small, infrequent rain events occurred in September and October, but did little to address the rainfall deficit. Total precipitation received since January 1 through November 3 is 28.51 inches which is 10.92 inches below the mean of 39.43 inches (Source: National Weather Service NOWData for Epping, NH). Total annual precipitation averages 48.11 inches for this site (55 years of record).

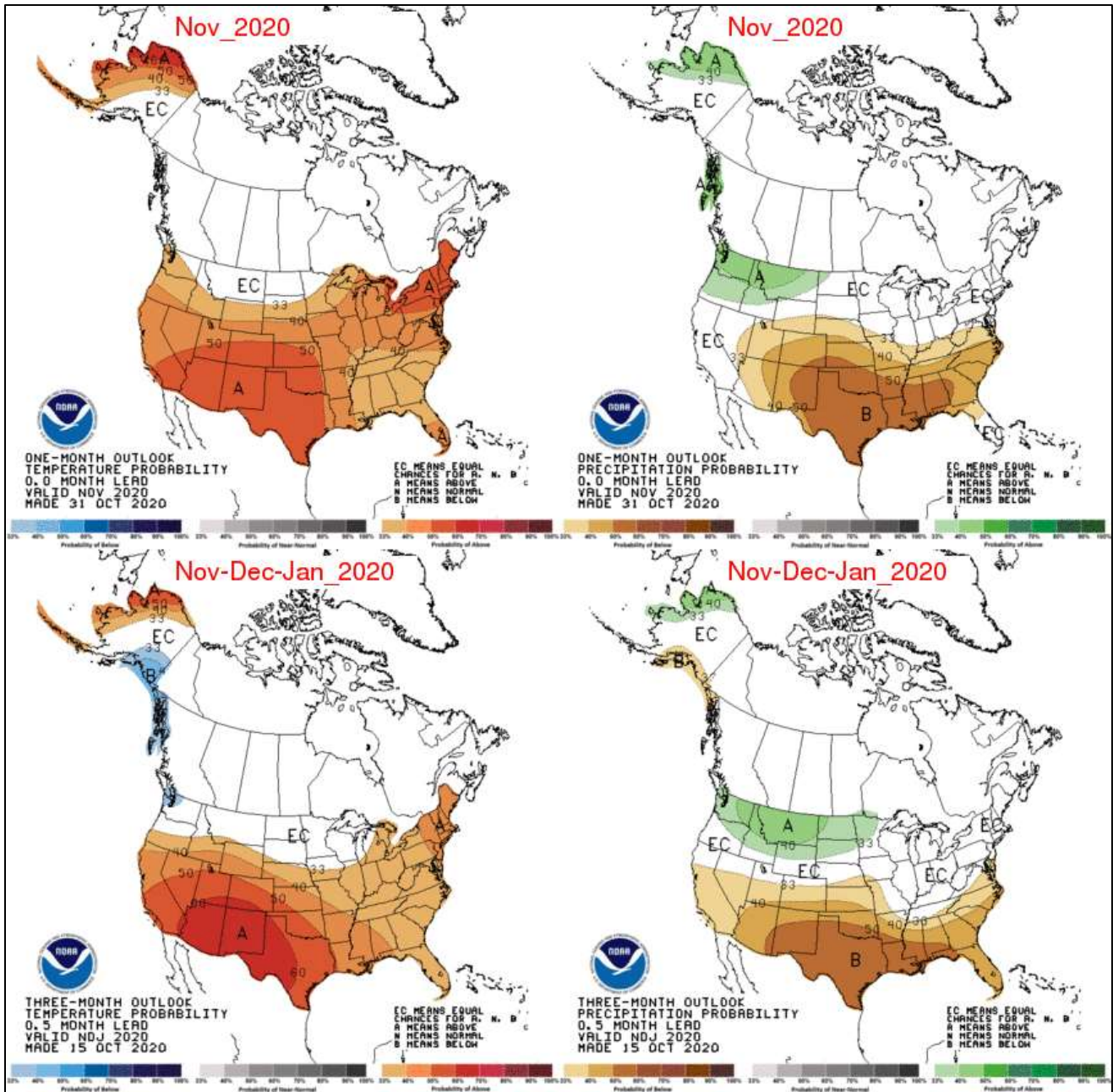
There is a **10.92 inch precipitation deficit** for the year; precipitation is **much below normal** for the year and month.



NOAA/National Weather Service, Gray/Portland Office. NOWData for Epping, NH.

Temperature and Precipitation Forecast

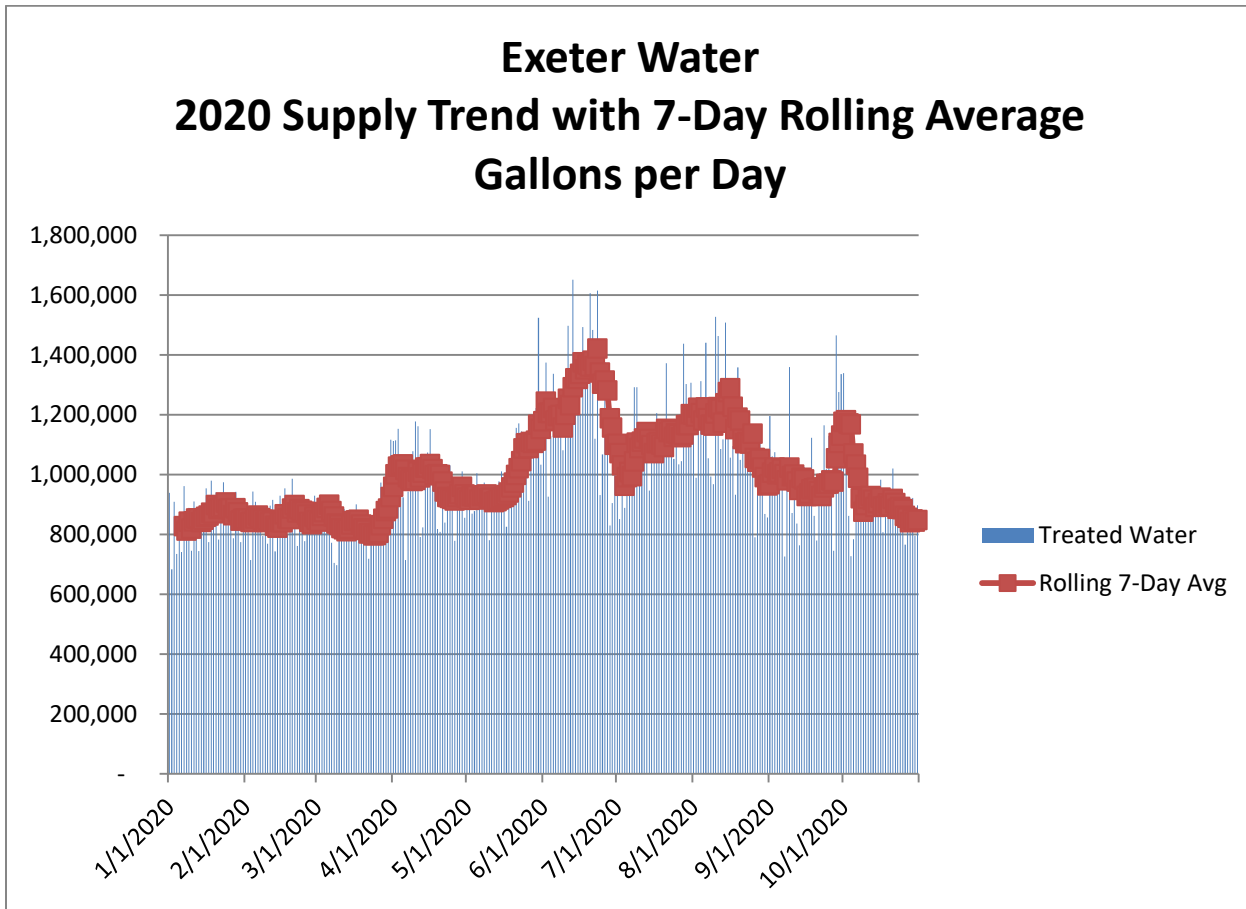
November and the 3 month outlook (November, December, January) **temperatures** are predicted to continue to be **above normal**. The three month outlook from NOAA indicates equal chances for above, normal or below normal precipitation for November and the 3 month outlook (November, December, January) for the New England region.



http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/churchill.php

Exeter Water Supply

Overall, water usage or demand in the Exeter public water system has decreased and returned to pre-summer non-irrigated flows since outdoor water ban was implemented on August 24. The seven day average in early May was 0.93 million gallons per day (MGD); on October 31 it was 0.85 MGD. To date in 2020 the surface water treatment plant (SWTP) produced 205 MG, supplying 67% of demand. The groundwater treatment plant (GWTP) produced 99 MG, supplying 33% of demand.



Summary

The northern half of Exeter is in severe drought (D2) and southern half is in moderate drought (D1). Temperatures have been above average since May and are predicted to continue to be above average through January. Precipitation is well below normal with a 10.92 inch rainfall deficit so far this year. Surface waters and groundwater levels are slowly increasing but still below normal. Water usage has decreased to 0.85 MGD due to the Level 4 outdoor water bans implemented August 24, 2020.

Recommendations

We recommend continuing restrictions at Level 4, which bans outdoor watering. Forecasts are not indicating significant precipitation this fall; it is unlikely that surface waters will be replenished or groundwater recharged before freezing conditions commence. It is highly likely water restrictions will remain in effect until the spring. Water users are encouraged to practice effective water conservation. For helpful tips on water use and conservation go to <https://www.epa.gov/watersense>.