



EXETER PUBLIC WORKS DEPARTMENT

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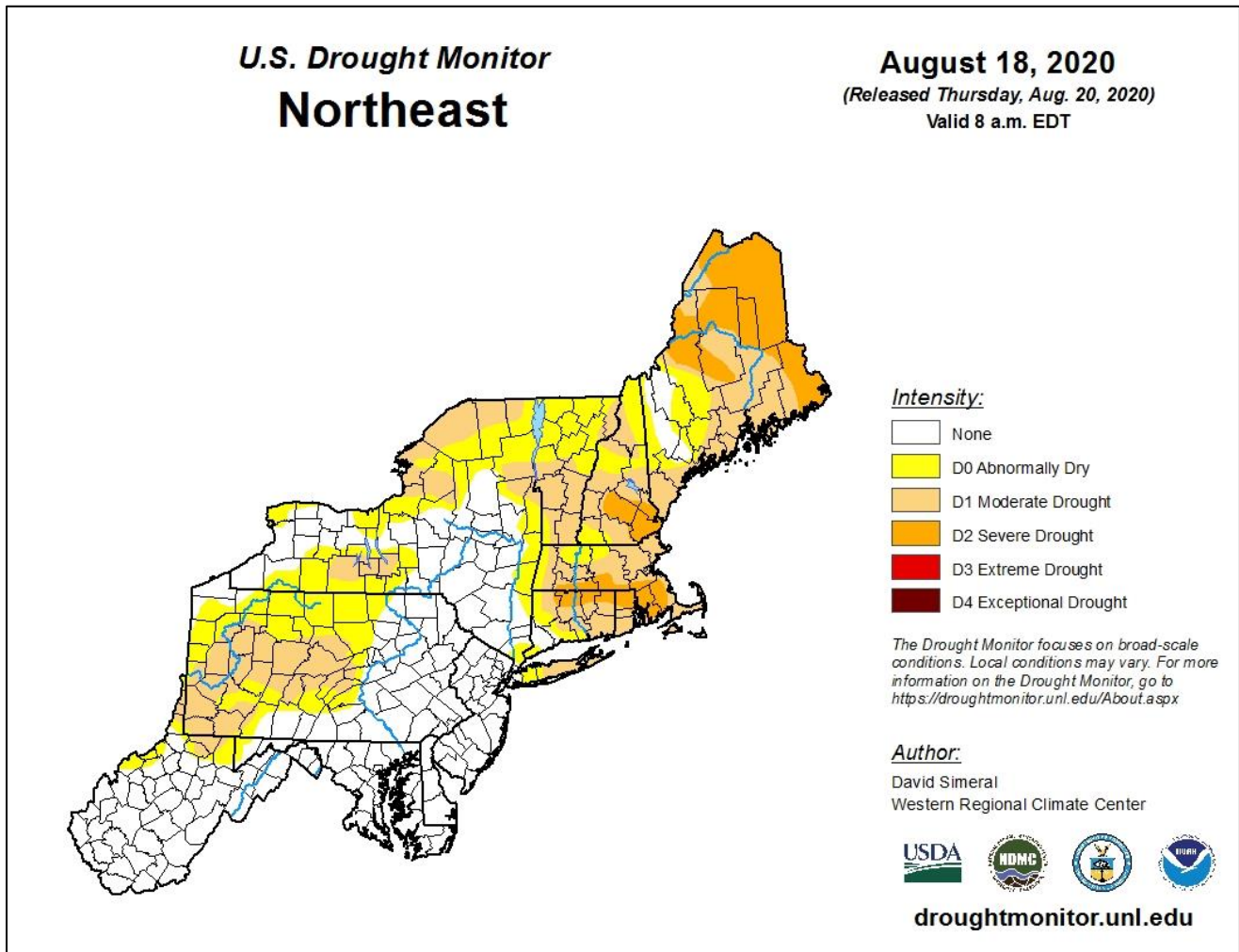
www.exeternh.gov

MEMO

DATE: August 21, 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 August 18, 2020, **elevated conditions to severe drought (D2)** in southeastern New Hampshire. Southeastern New Hampshire was rated abnormally dry (D0) May 26, 2020 and moderate drought (D1) June 23, 2020. The State has implemented the Drought Management Plan, advising public water systems to implement outdoor water use restrictions where needed, and encouraging private well owners to conserve water. Based upon recommendations from the Public Works Department, the Exeter Select Board issued Level 2 water restrictions effective July 7, 2020. We recommend **elevating restrictions to Level 4, which bans outdoor watering**.

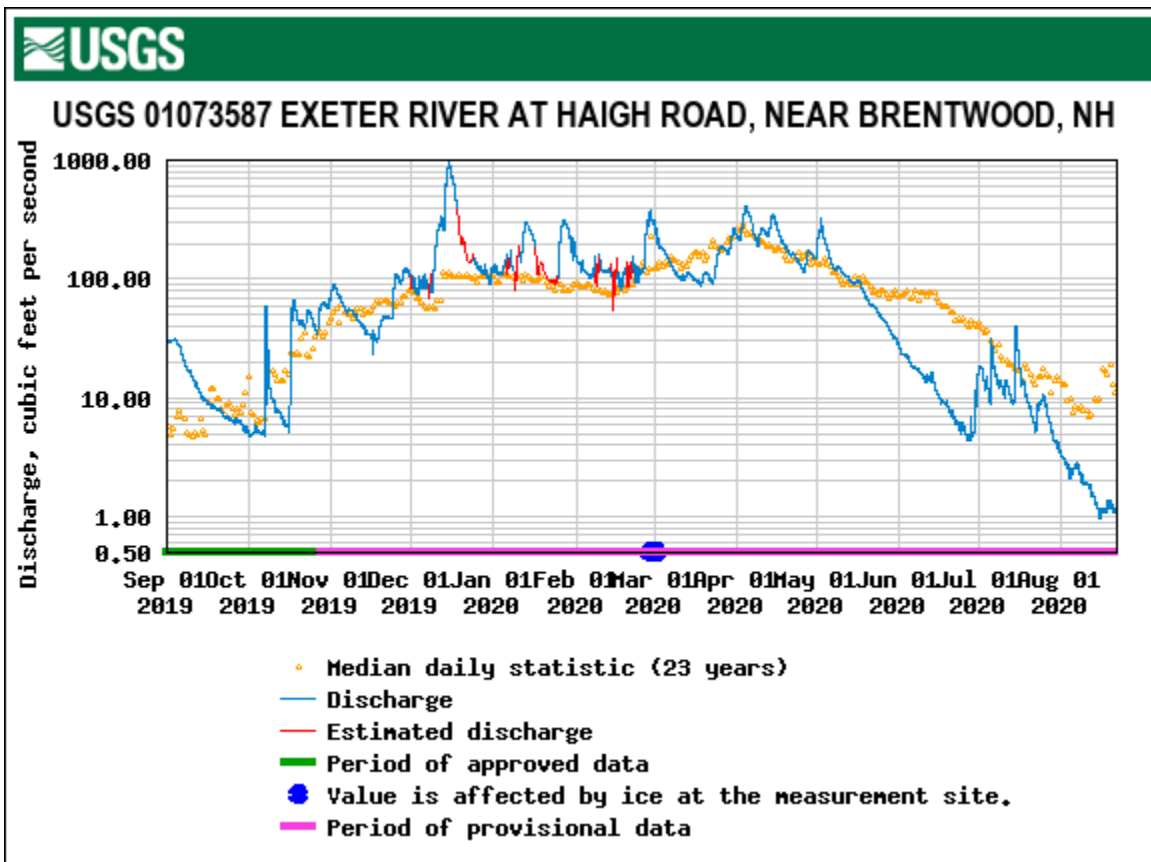


The U.S. Drought Monitor is jointly produced by National Drought Mitigation Center at University of Nebraska-Lincoln, U.S. Department of Agriculture, and National Oceanic and Atmospheric Administration. Map courtesy of NDMC.

River Flow

July and August are typically periods of summer low flow. 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 1.07 cubic feet per second (cfs) (at 9:15 pm on 8/21/2020) which is below the previous minimum on this date in 1996. 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 1.8 cfs (1.2 MGD).

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



Groundwater Levels

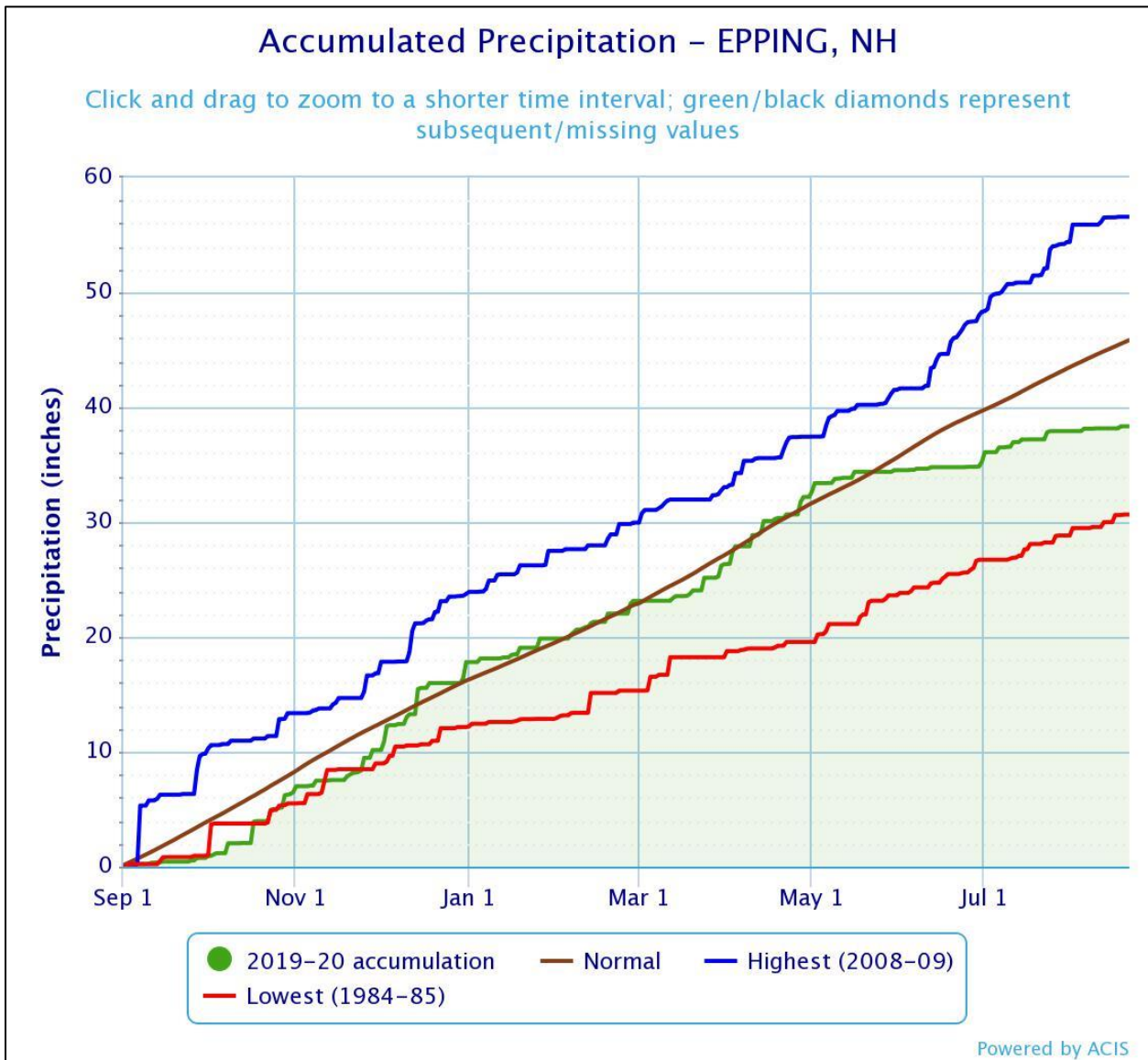
Groundwater levels for long-term monitoring wells in the region vary by location. The USGS wells in Epping, Concord and Nashua range from normal to below normal to low, respectively.

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

Precipitation

Total precipitation received since January 1 through August 20 is 20.52 inches which is 9.29 inches below the mean of 29.81 inches (Source: National Weather Service NOWData for Epping, NH). Total annual precipitation averages 48.11 inches for this site (55 years of record). The last precipitation event occurred on August 18 (0.18 inches).

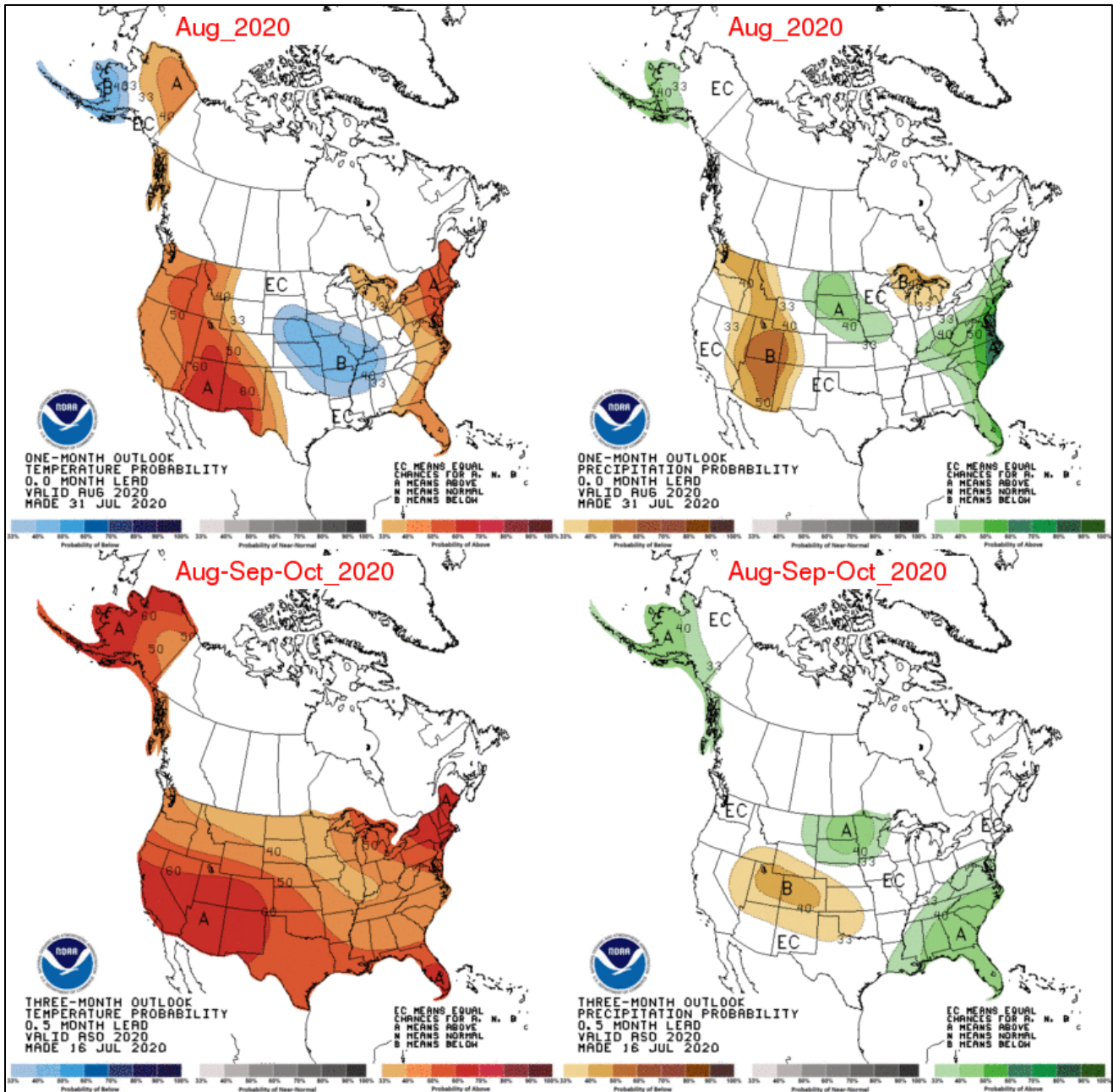
There is a **9.29 inch precipitation deficit** for the year; precipitation is **much below normal** for the year and month.



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

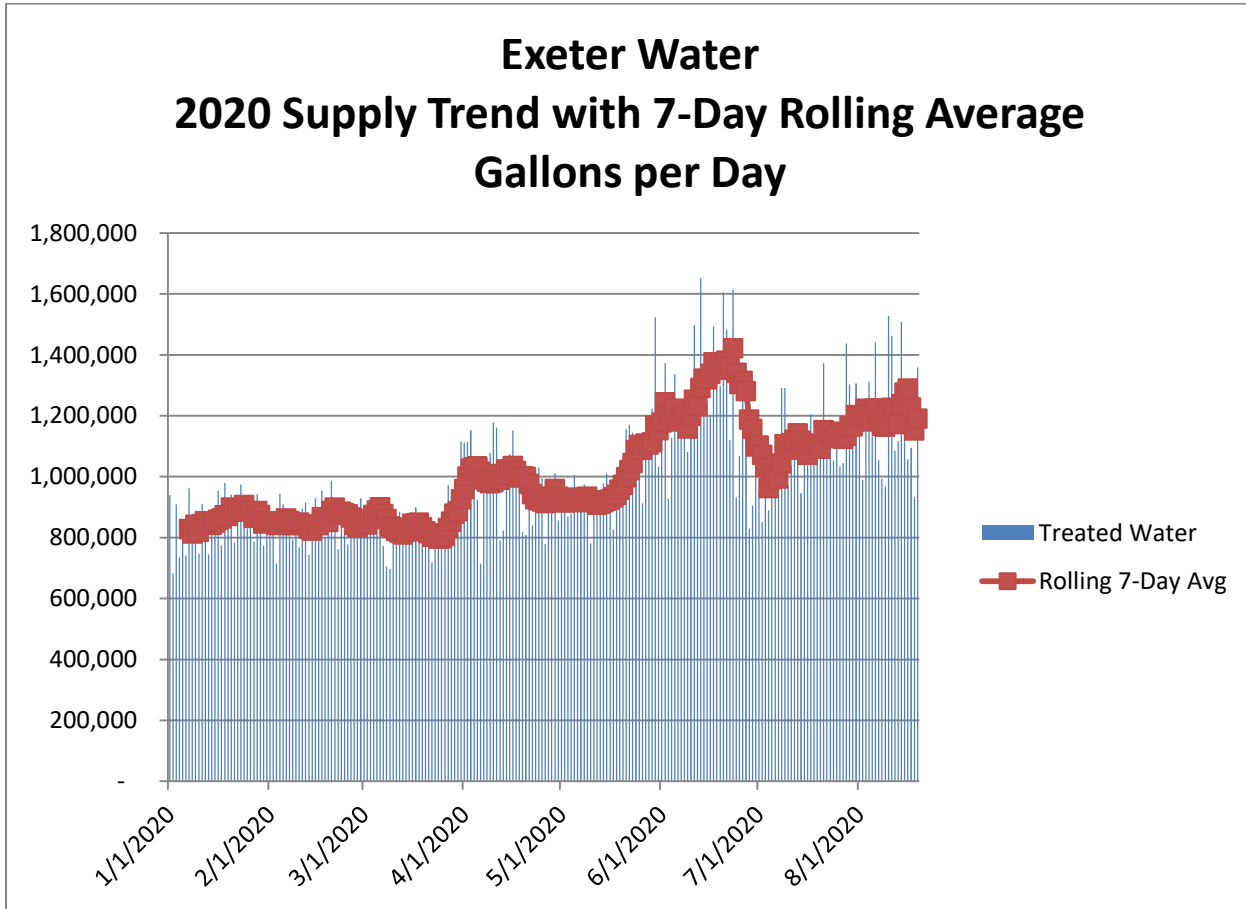
Temperature and Precipitation Forecast

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



Exeter Water Supply

Overall, water usage or demand in the Exeter public water system has continued to increase since implementation of the Level 2 (odd-even) water restriction effective July 7. **Usage is up 28% since May 1, primarily due to outdoor water use.** The seven day average in early May was 0.93 million gallons per day (MGD); on August 19 it was 1.19 MGD. To date in 2020 the surface water treatment plant (SWTP) produced 161.1 MG, supplying 69% of demand. The groundwater treatment plant (GWTP) produced 72.3 MG, supplying 31% of demand.



Summary

Temperatures have been above average since May and are predicted to continue to be above average through October. Precipitation is well below normal. Surface waters and groundwater levels are declining and much below normal. Southeastern New Hampshire is now in a declared severe drought (D2). Water usage is up 29%, primarily due to outdoor water use, despite the Town of Exeter Level 2 outdoor water restrictions effective July 7, 2020.

Recommendation

In accordance with Exeter Town Ordinance 1610, Water Use Restrictions, the Public Works **Department recommends Level 4 water restrictions be implemented to conserve and maintain adequate reserves of the public water supply. Level 4 restrictions prohibit landscape watering.** Water users are encouraged to practice effective water conservation. For helpful tips on water use and conservation go to <https://www.epa.gov/watersense>.