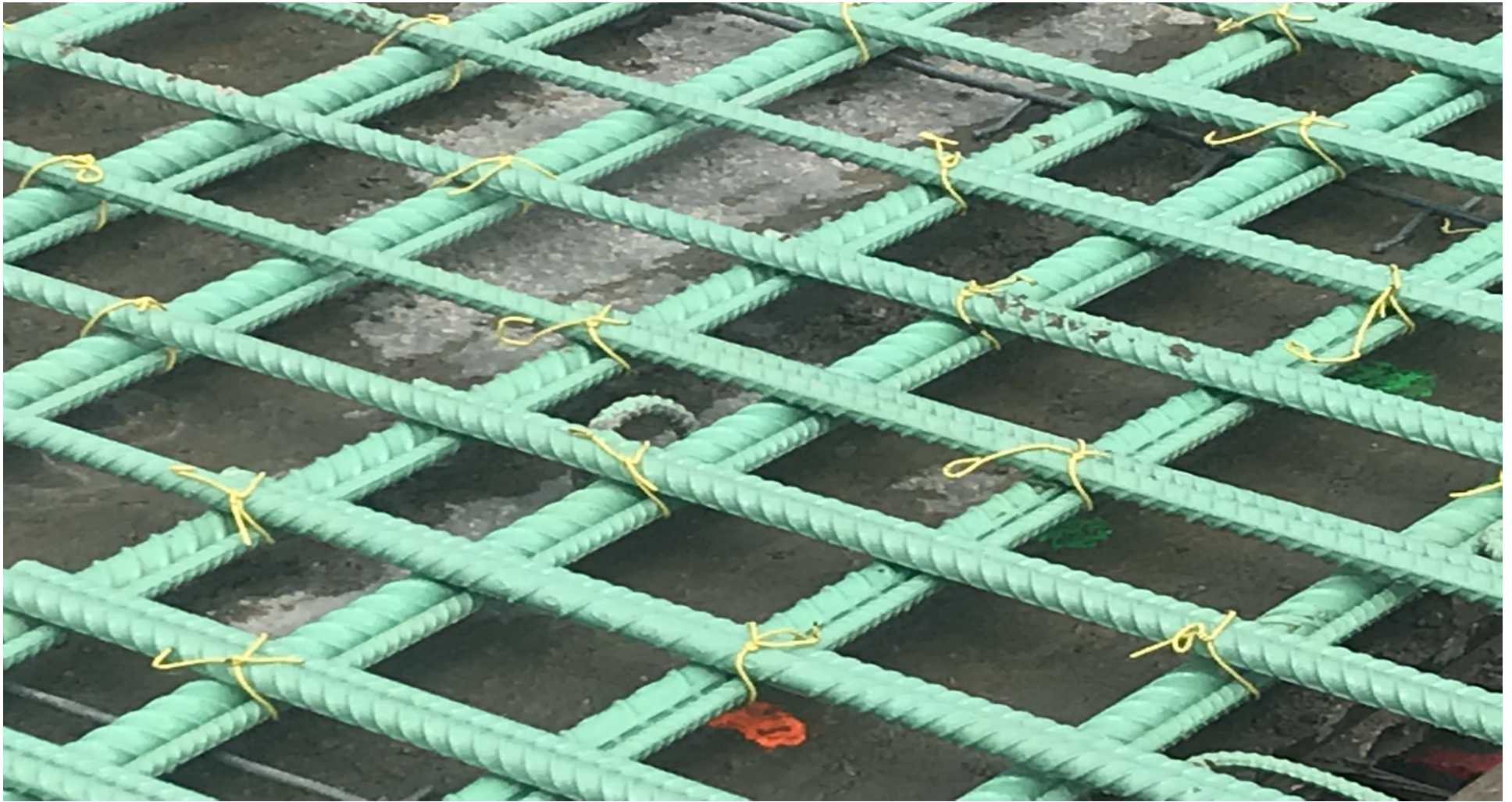


July 2019 Public Works Report

Capital Improvement Projects

Erie Parkway Bridge Replacement

This project continues to be on track for a late fall completion. The project is on schedule and within budget. We are currently anticipating a closure of the north end of Montgomery Drive between July 25th and August 1st. This will allow for the new road connection at that location to be constructed. We will get the message out to the community in advance so that residents can plan their travels accordingly.



Lynn R Morgan Water Treatment Facility (WTF) Expansion

We planned to bring a request to authorize design services with Burns and McDonnell Engineers to create the design for a hydro-turbine electricity generator at the WTF. We are going to delay this request until later this month so we can address the payback or return on investment (ROI) figures we are sorting through with B&M and Finance. This turbine will use incoming pressure to create electricity to offset power consumption. We have received grants for the study for this project and are in the process of applying for additional grants to fund part of the design and construction, which we anticipate could greatly help with the ROI calculation. The picture below is of a hydro turbine at Carter Lake, operated by Northern Colorado Water Conservation District. Our planned project will be similar, but smaller in scale.



Lynn R. Morgan Water Treatment Facility (WTF)

Annual Daily Average Flow:

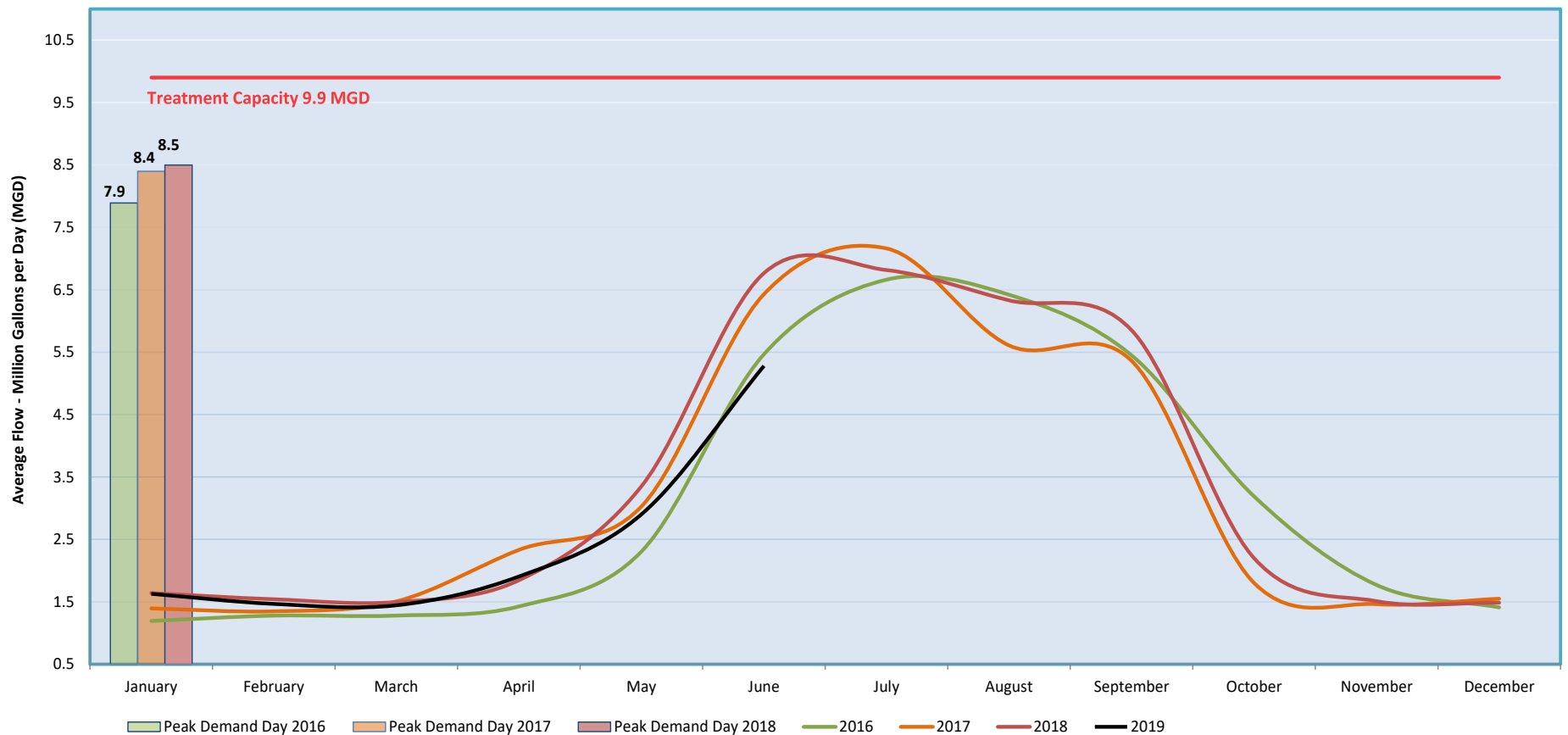
2016 - 3.3 (Million Gallons) MG

2017 – 3.4 MG

2018 – 3.4 MG

July 2017 maintains the record for the highest monthly average flows at 7.16 MG, while January 2016 had the lowest flows at 1.19 MG. Summer demands greatly affect the annual average due to outdoor irrigation. The daily peak demand (customer meter totals) of 8.45 MGD was in July of 2018. Burns and McDonnell is currently working on finalizing the design for the 16.65 MGD expansion and CMAR Contractor Garney Construction is on site. We often get asked where our water comes from, the attached map shows the system operated by Northern Water and the Bureau of Reclamation which brings the majority of our supply from the western slope.

Average Monthly Production



Annual Daily Gallons Per Capita per Day (GPCD):

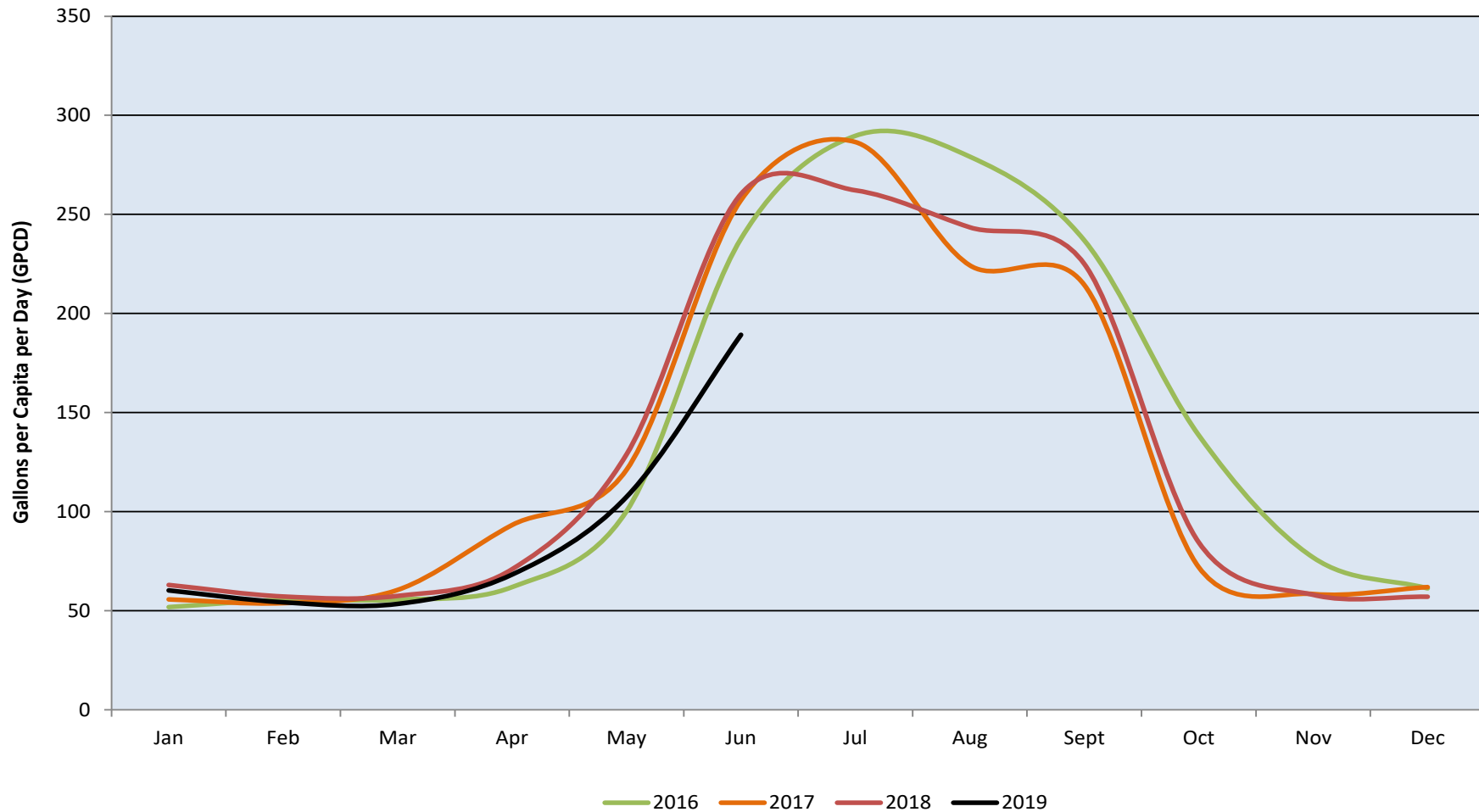
2016 - 131 GPCD

2017 – 130 GPCD

2018 – 131 GPCD

Water demands are off to a slow start this irrigation season due to generally cool and wet conditions. July 2016 had the highest average daily usage at 290 gallons GPCD. January 2016 had the lowest usage at 52 GPCD. Reducing summer irrigation and increasing reuse water availability will reduce reliance on treated water supplies in the future. Attached to this report are recommended practices to reduce outdoor irrigation demands. Also attached is a handout explaining outdoor irrigation audits and water conservation assistance available to our developments, HOA's and homeowners. These services are free of charge to our community.

Average Daily Usage Per Capita



North Water Reclamation Facility

Annual Daily Average Flow:

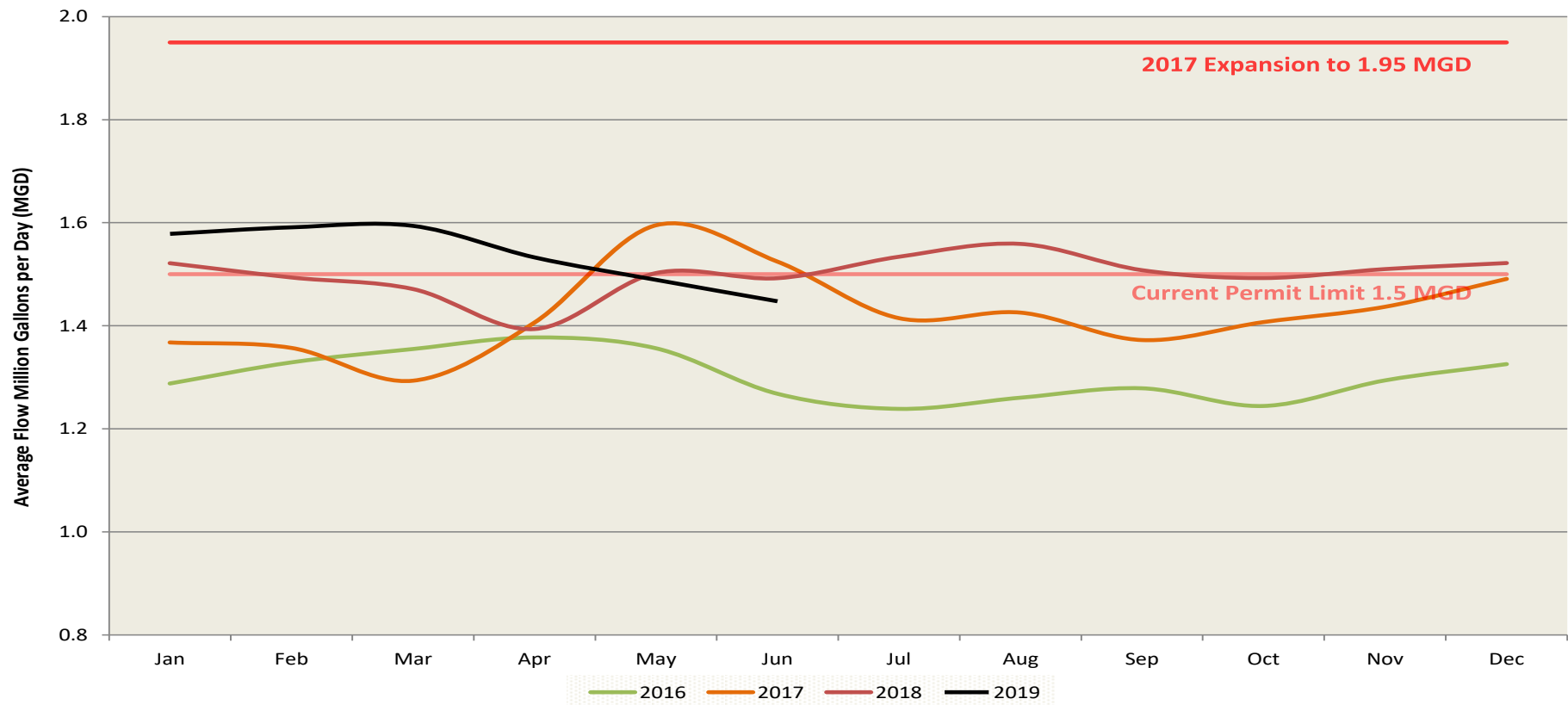
2016 - 1.30 MG

2017 – 1.42 MG

2018 - 1.50 MG

October 2016 had the lowest average flow of 1.24 million gallons per day (MGD). May 2017 set a high average monthly flow of 1.60 MGD, triggered by snowmelt and subsequent inflow into the collection system, likely through low lying manhole lids. Staff worked with consultant Leonard Rice Engineers (LRE) and submitted a request for modifications to the facility permit from the Colorado Department of Public Health and Environment (CDPHE) in April 2018. The end result of this effort will be a permit at 1.95 MGD and more appropriate discharge limits than in the current or proposed permit. We particularly struggle to meet extremely stringent copper limits (which comes from customer's internal plumbing). CDPHE has now indicated that they will not process this request until after 2021; we are again reaching out to CDPHE and asking they revisit this position. Design is continues with HDR Engineering. We anticipate construction in late 2019 or early 2020 and lasting through 2021.

Average Monthly Flows



Annual Daily Gallons Per Capita per Day (GPCD):

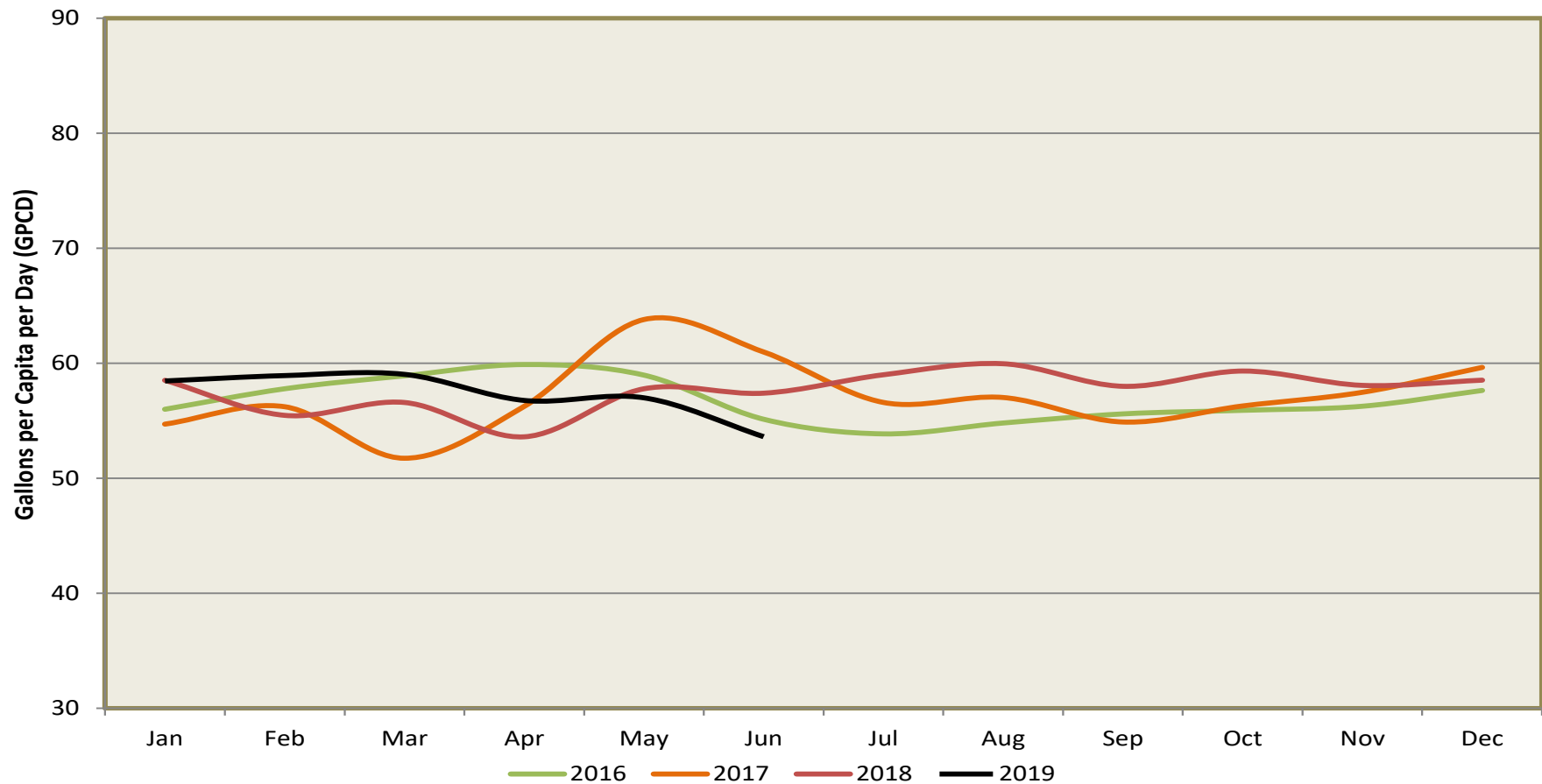
2016 - 57 GPCD

2017 - 57 GPCD

2018 - 58 GPCD

This graph depicts customer indoor water usage. May 2017 had the highest usage at 64 GPCD, primarily due to snow melt seeping into manholes after a particularly wet snow and subsequent warm weather. Since we had fewer heavy snowfall events this May our numbers are dropping. March 2017 had the lowest usage at 52 GPCD. Overall flows into the wastewater treatment plant are trending upward over this period, however per capita demands remain relatively flat on an annual basis. Fall, with relatively little precipitation and dropping groundwater levels, is a good indicator of true daily flows.

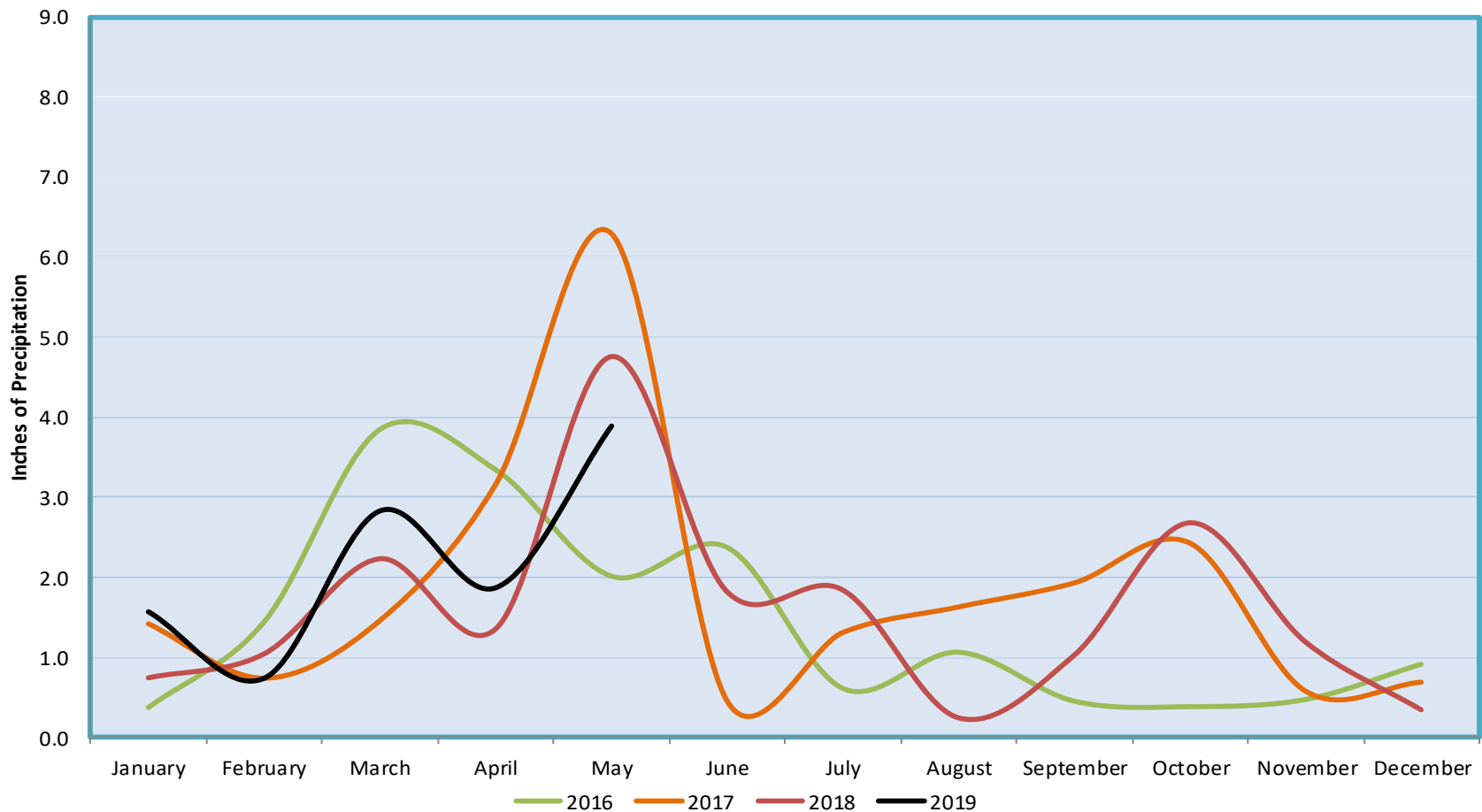
Average Daily Usage Per Capita



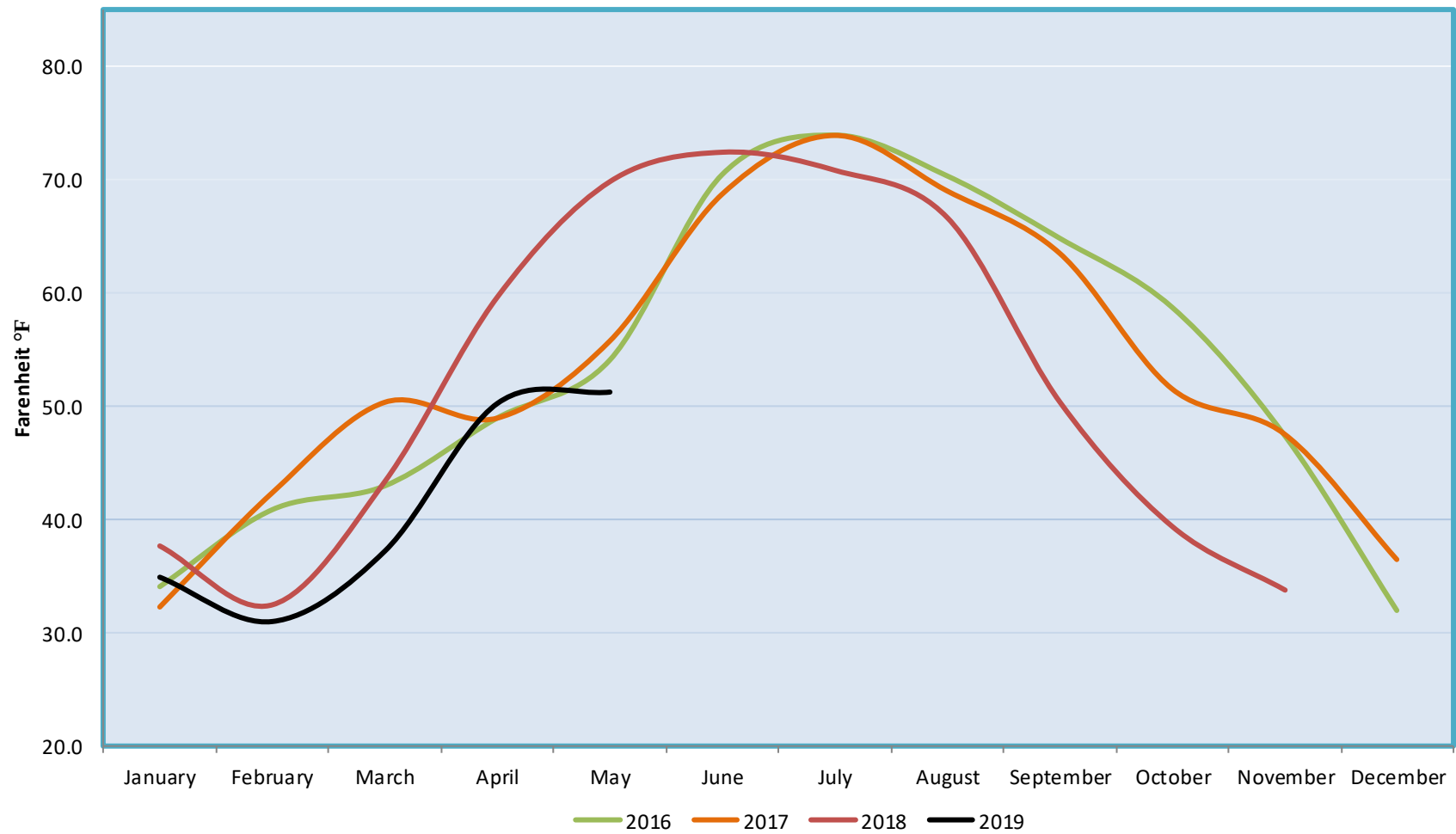
Monthly Data for Boulder – National Oceanic and Atmospheric Administration (NOAA) & Natural Resource Conservation Service (NRCS)

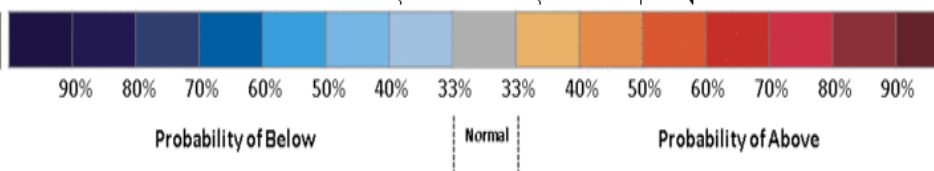
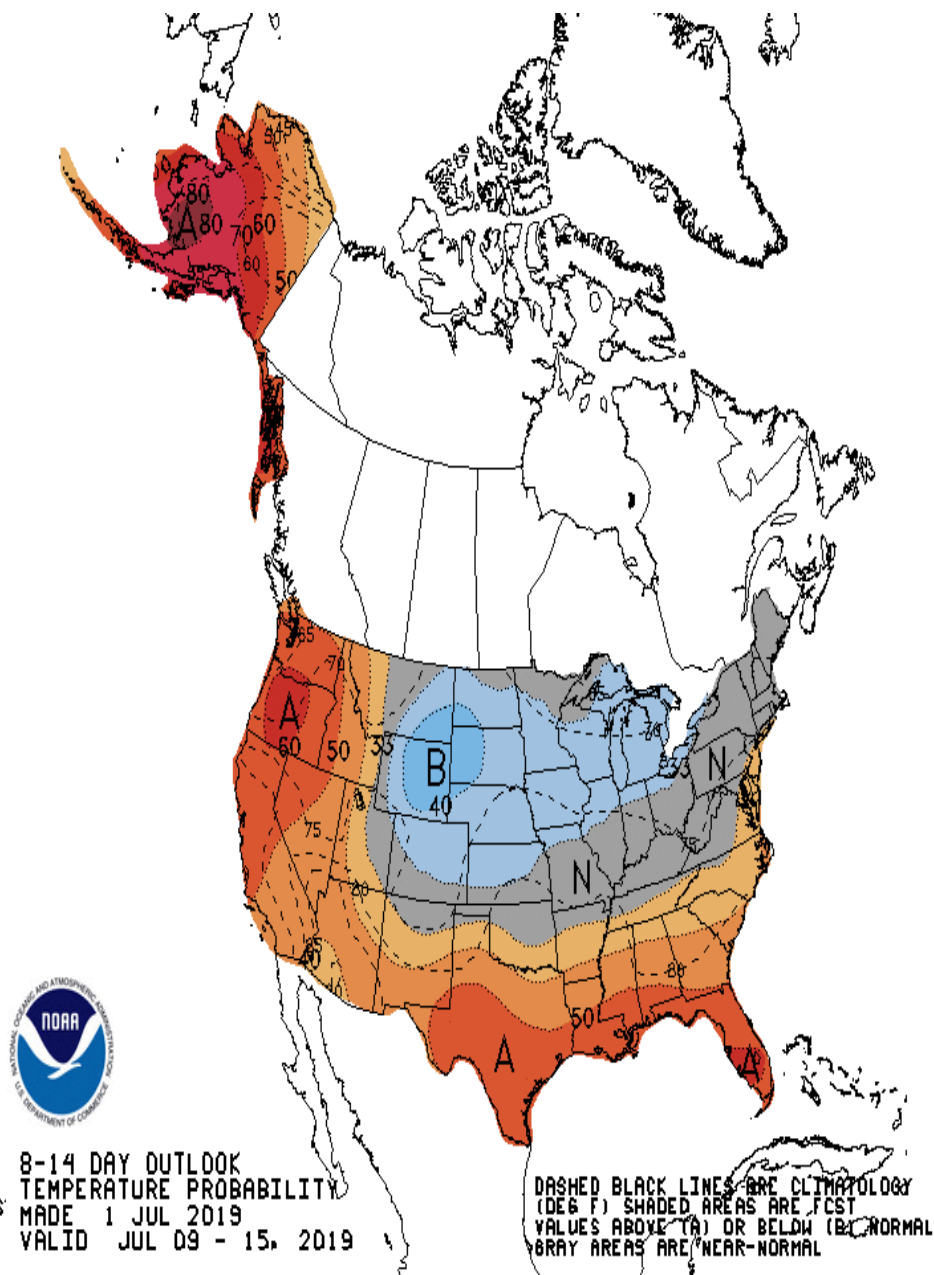
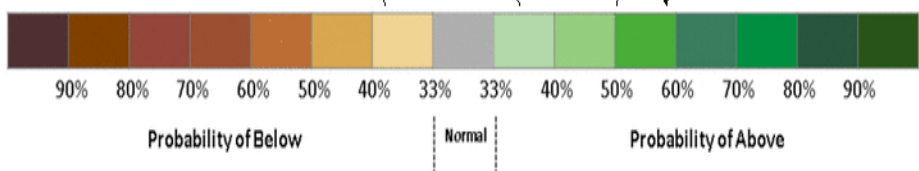
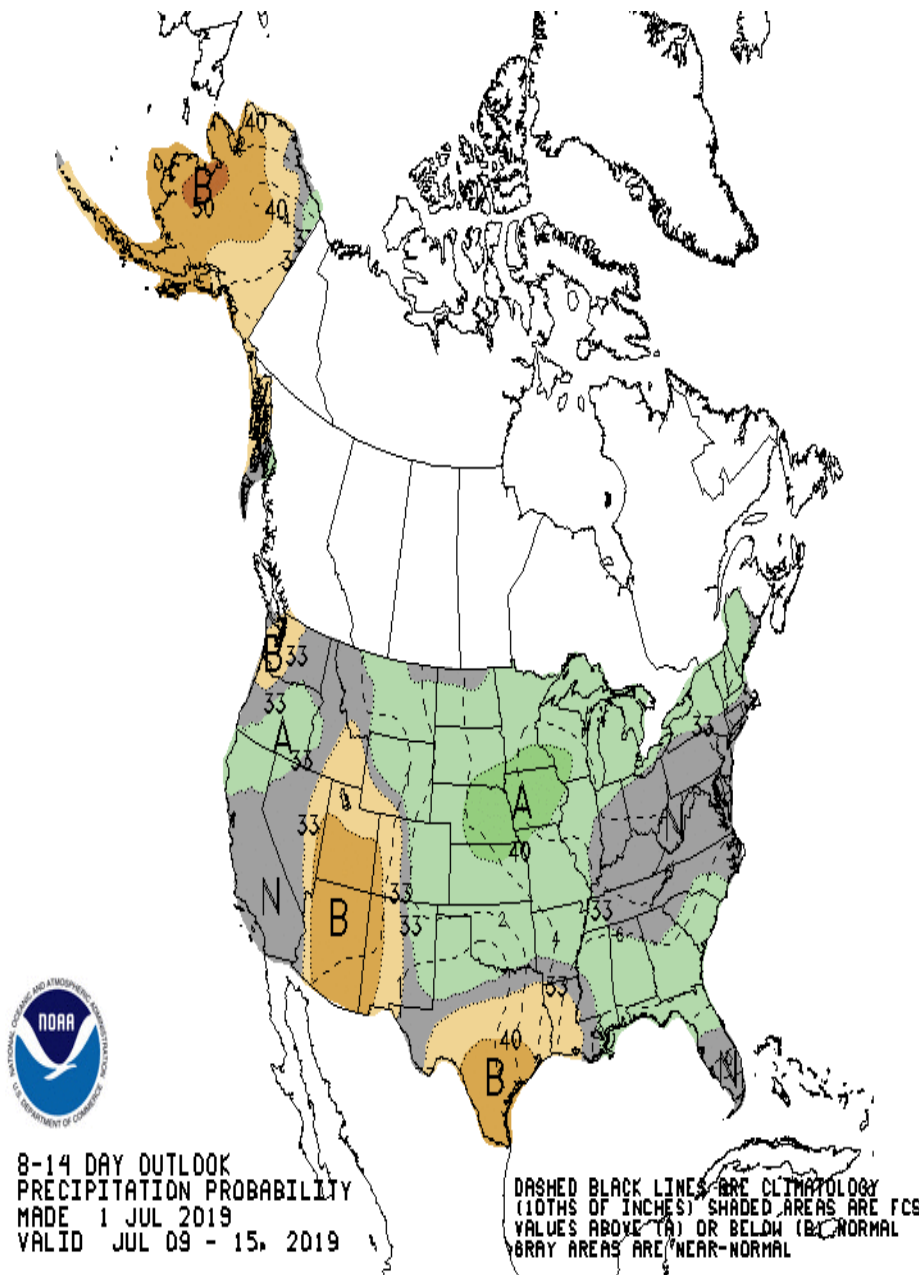
NOAA had not posted precipitation and Temperature data for June as of the drafting of this report. NOAA is predicting 33% chance of above normal precipitation and 33% chance of below normal temperatures, through mid-month. This is an ongoing pattern over the last several months. Due to high snowfall and late run off the snow pack we continue to see runoff conditions, however the peak has passed. Two attached maps show the difference in drought conditions last year at this time and current.

Precipitation



Mean Temperature



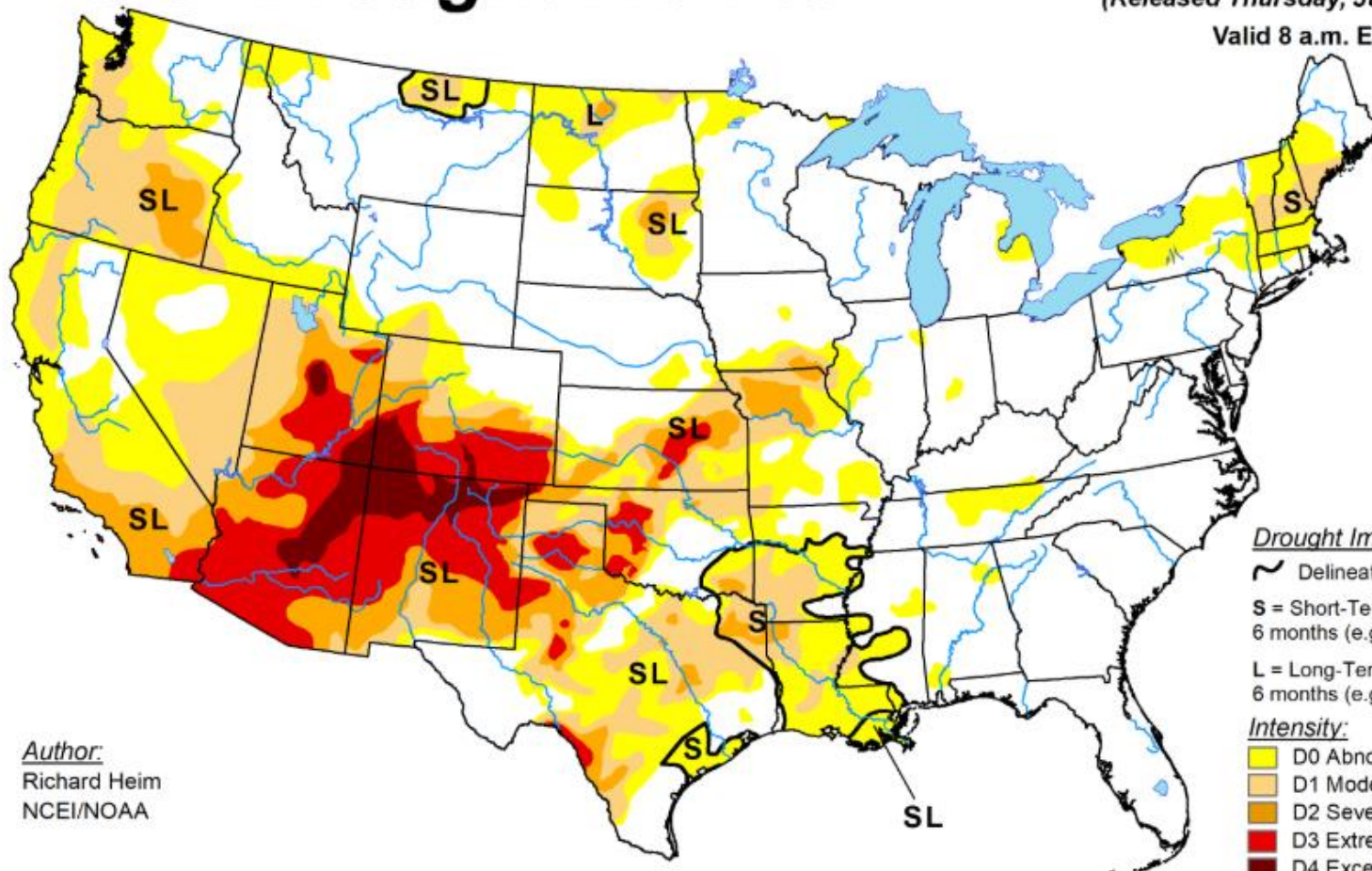


U.S. Drought Monitor

June 26, 2018

(Released Thursday, Jun. 28, 2018)

Valid 8 a.m. EDT



Author:
Richard Heim
NCEI/NOAA

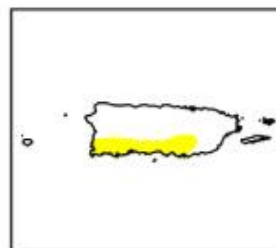
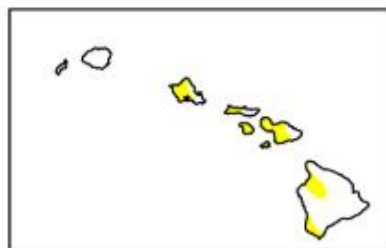
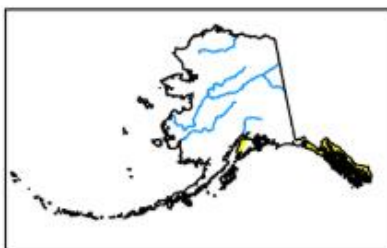
Drought Impact Types:

- ~ 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:

- 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. See accompanying text summary for forecast statements.

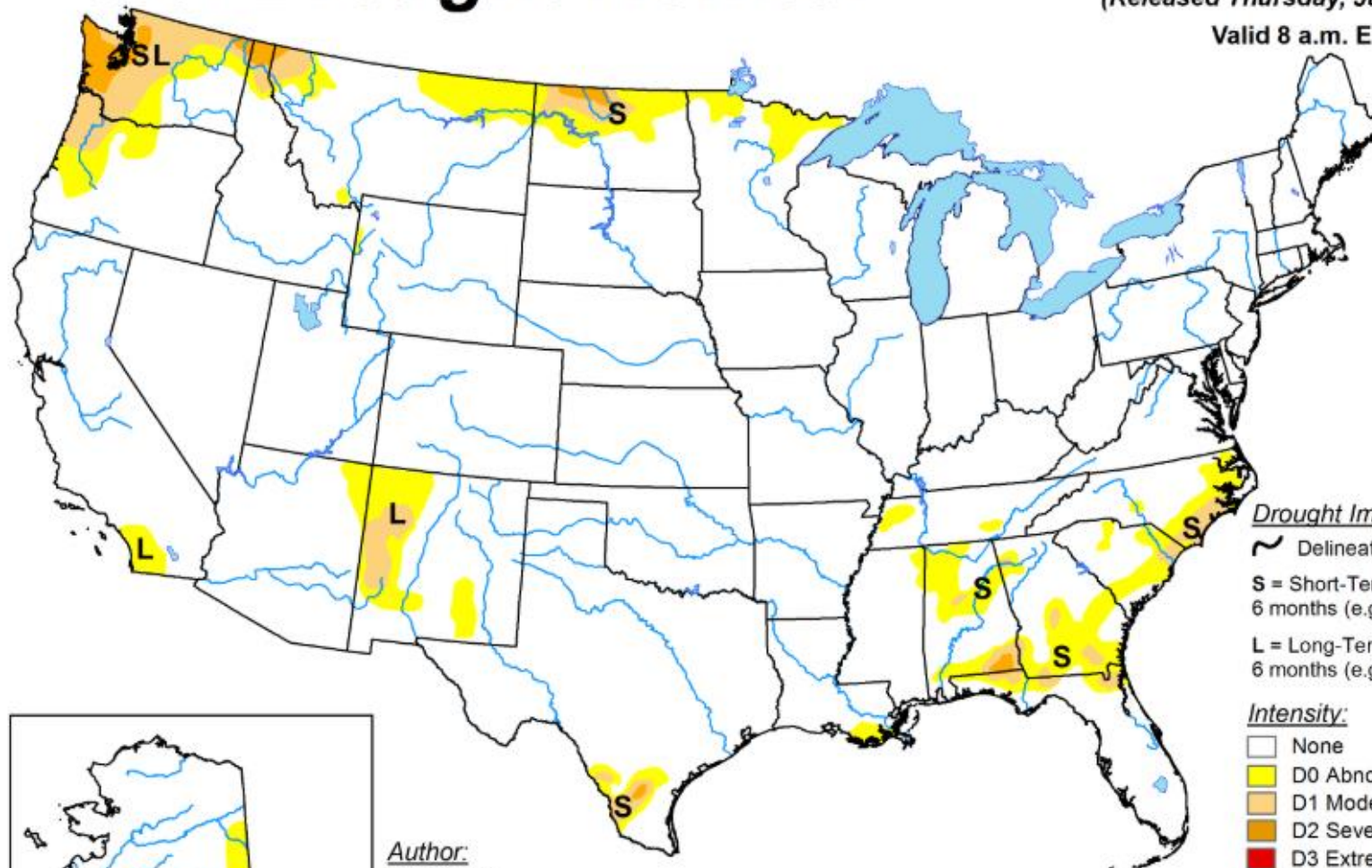


<http://droughtmonitor.unl.edu/>

U.S. Drought Monitor

June 25, 2019
(Released Thursday, Jun. 27, 2019)

Valid 8 a.m. EDT

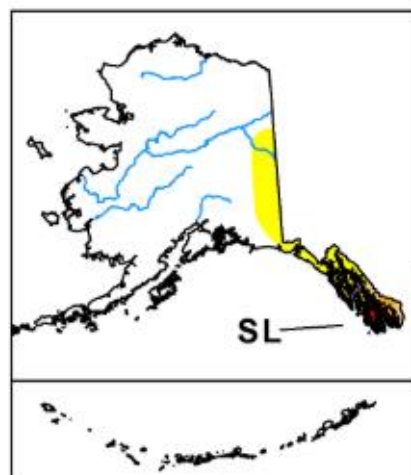


Drought Impact Types:

- ~ 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:
Brad Pugh
CPC/NOAA



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



droughtmonitor.unl.edu