

TOWN OF ERIE
BOARD OF TRUSTEES AGENDA ITEM
Board Meeting Date: August 8, 2017

SUBJECT: STAFF REPORT

FILE NUMBER: 16- (INFO ONLY DO NOT INCLUDE IN YOUR GRANICAS ITEM)

Water Treatment and Water Reclamation Report

DEPARTMENT: Public Works

PRESENTER/PREPARER: Todd Fessenden, Deputy Public Works Director – Utilities

FISCAL INFORMATION:

Cost as Recommended: N/A

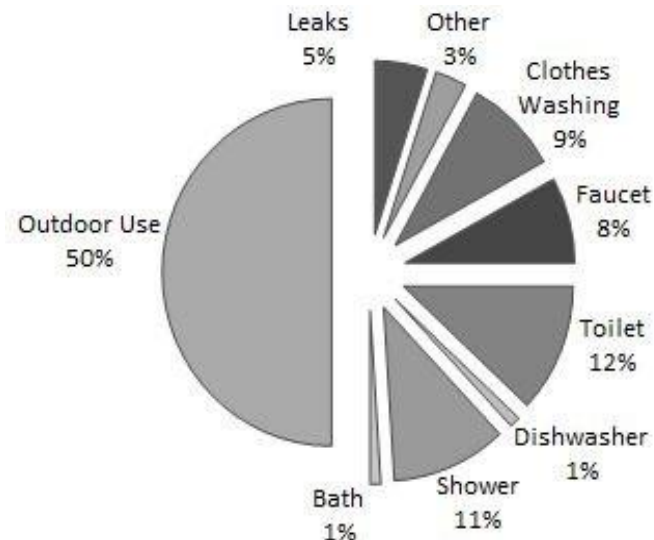
Balance Available: N/A

Budget Line Item Number: N/A

New Appropriation Required: No

STAFF RECOMMENDATION: N/A

SUMMARY AND BACKGROUND OF SUBJECT MATTER: The Water Treatment and Water Reclamation graphs depict the monthly production averages and the average per capita usage based on the population within the system at the Lynn R. Morgan Water Treatment Facility and North Water Reclamation Facility 2014 - 2017. Also included are plant treatment capacities, permit limits, peak demand data as well as pertinent weather information for the same period. The chart below is provided by Colorado State University and represents typical treated water usage in Colorado, as of 2014.



Lynn J. Morgan Water Treatment Facility

Annual Daily Average Flow:

2014 - 2.6 million gallons (MG)

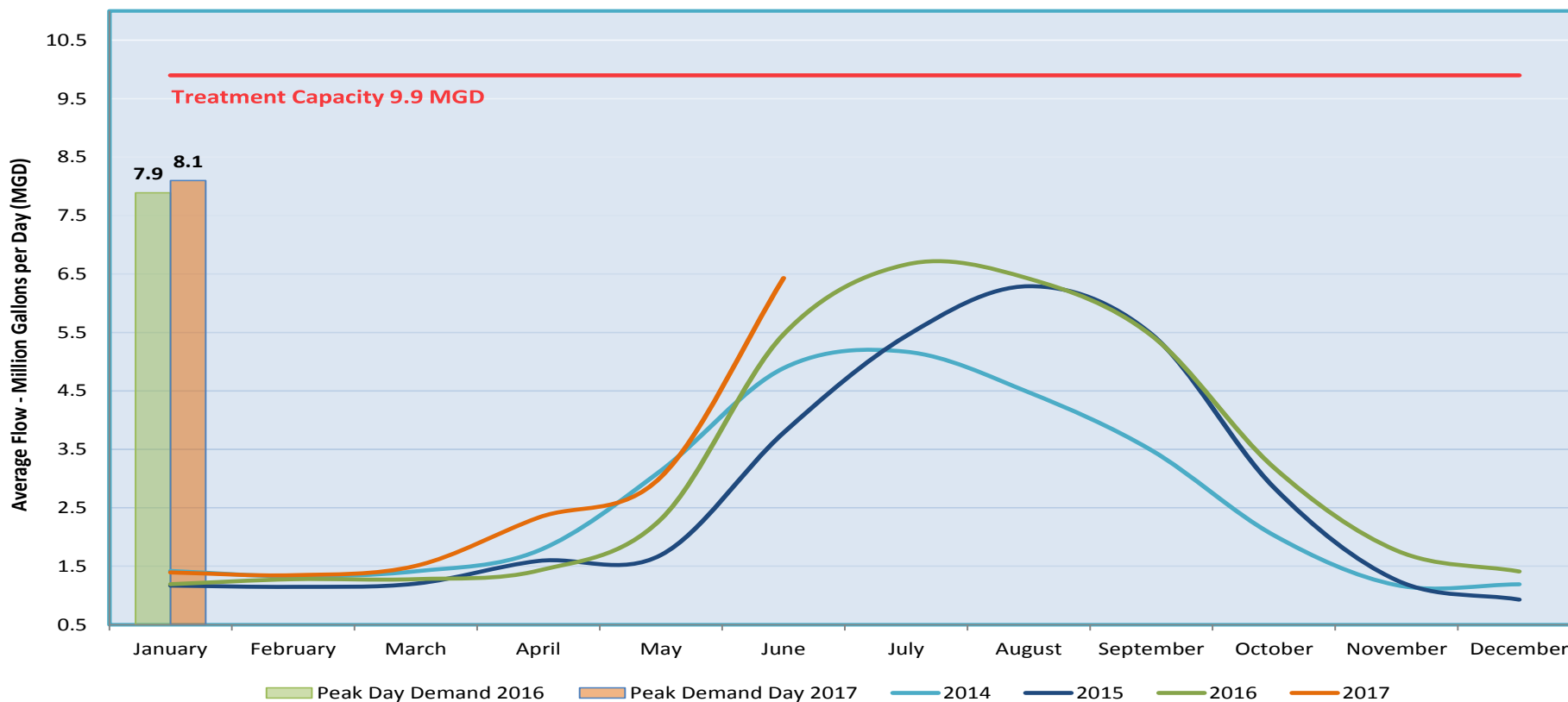
2015 - 2.7 MG

2016 - 3.3 MG

July 2016 had the highest monthly average flows at 6.66 MG, while December 2015 had the lowest flows at 0.93 MG. Summer demands greatly affect the annual average due to outdoor irrigation. Peak hourly demands in the summer can reach double our treatment capacity, however our water storage tanks help attenuate the need for additional production capacity. A notable shift on this chart is in May 2015, where we saw very high precipitation. Water use in 2014 was markedly lower, in conjunction with more consistent precipitation than in the summers of 2015 and 2016.

While precipitation was also high this May, it came primarily in the form of snow. Water demands in the month of June have increased to peak levels due to summer irrigation. The daily peak demand (customer meter totals) in June of this year has already topped the previous record, set in July 2016. This figure looks to be exceeded again this July.

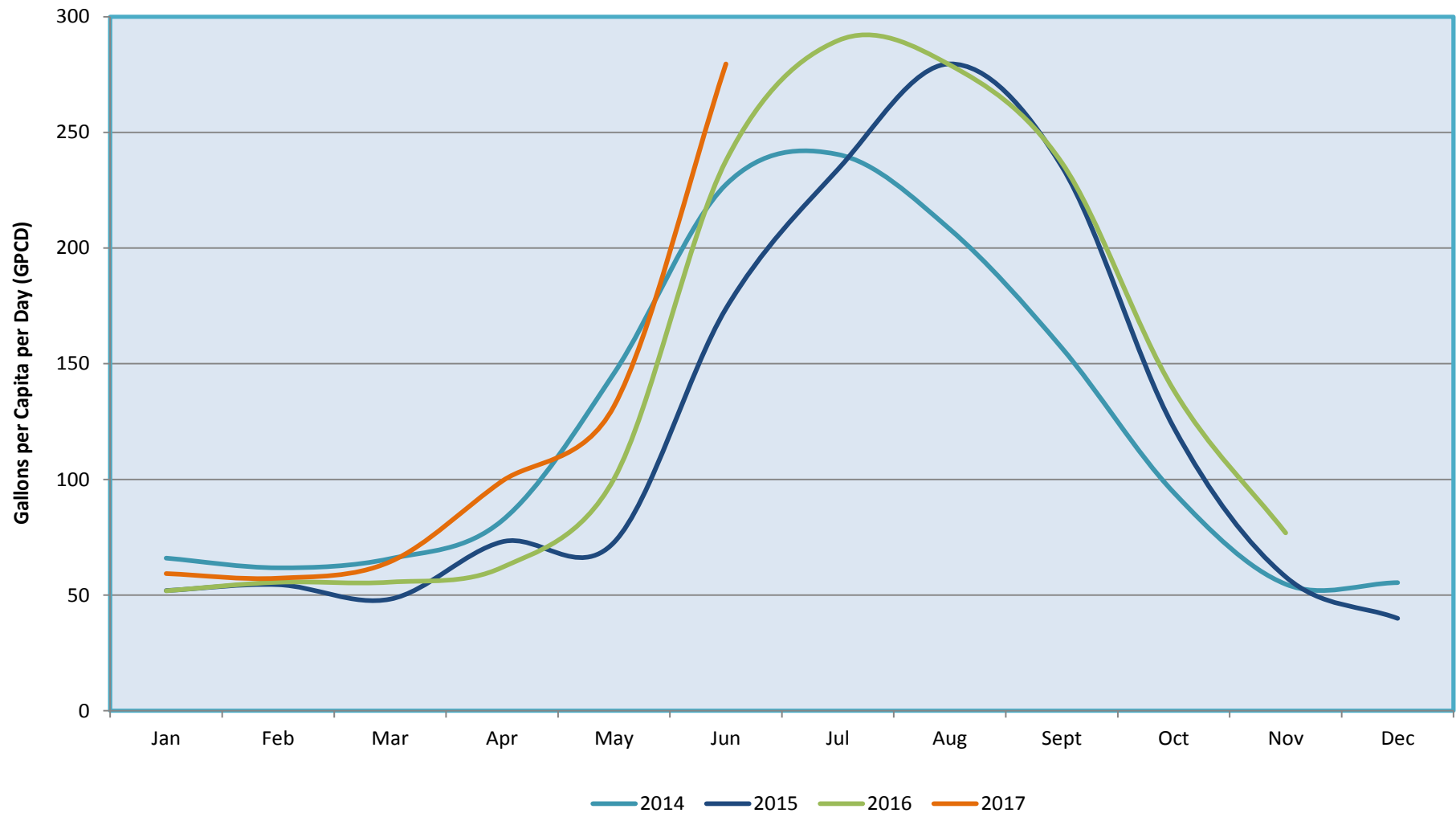
Average Monthly Production



Annual Daily Gallons Per Capita per Day (GPCD): **2014** – 122 GPCD **2015** - 120 GPCD **2016** - 144 GPCD.

July 2016 had the highest usage at 290 gallons per capita per day (GPCD), while December 2015 had the lowest usage at 40 GPCD. Reducing summer irrigation and increasing reuse water availability will reduce reliance on treated water supplies in the future. So far, this year's irrigation season is looking to exceed prior years.

Average Daily Usage Per Capita

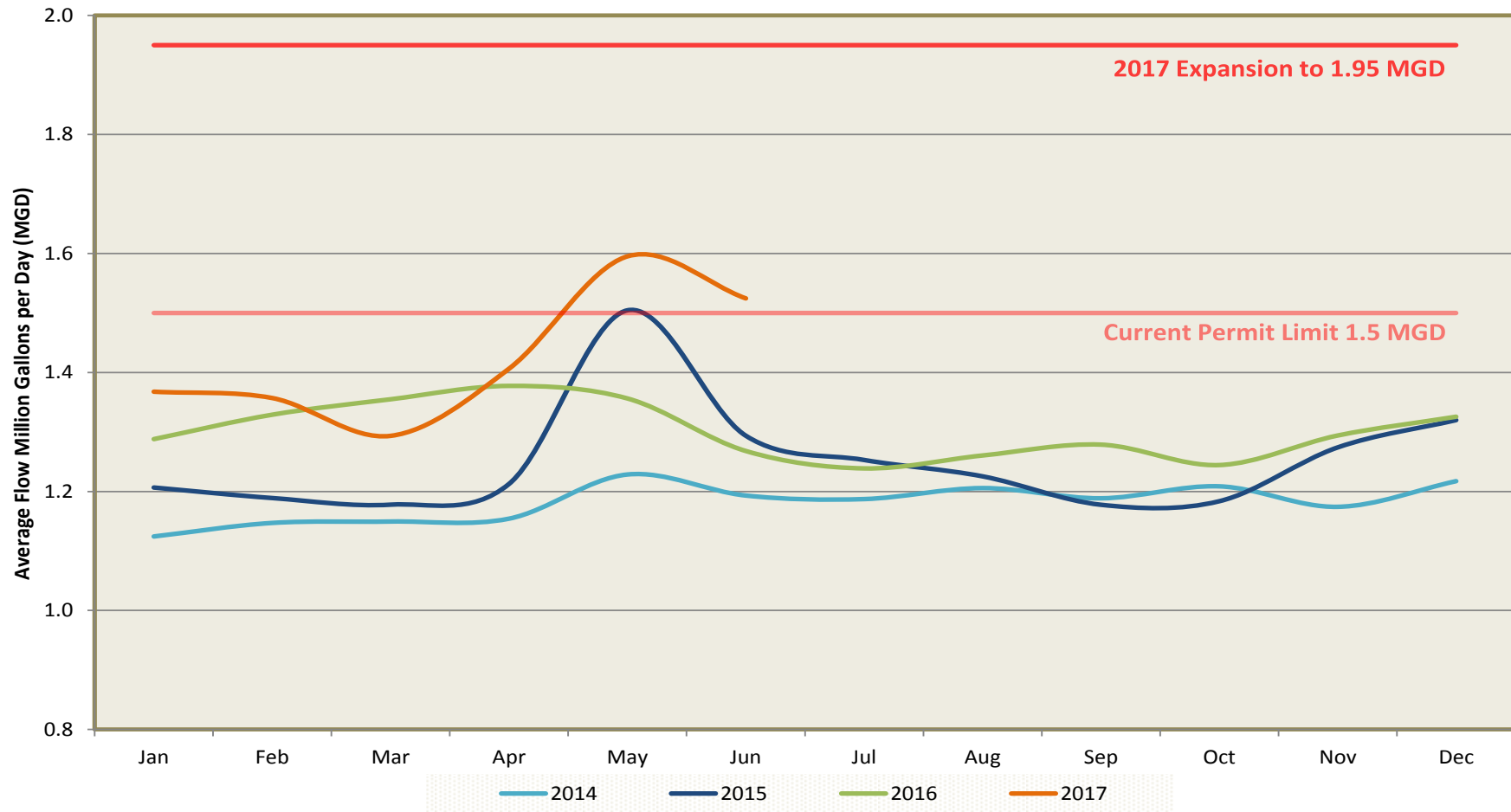


North Water Reclamation Facility

Annual Daily average flow: **2014** - 1.3 million gallons **2015** - 1.3 million gallons **2016** - 1.5 million gallons

January 2014 had the lowest average of 1.12 million gallons. For the second time in 2017 a new high average monthly flow was set, with May coming in at 1.60 million gallons per day. Both events triggered by snowmelt and subsequent inflow into the collection system. While inflow exceeded the current permit limit, this issue will be rectified as part of the current plant expansion due to complete at the end of July. At which time a new permit will be issued with a flow limit of 1.95 MGD. As precipitation wanes, average daily inflows are dropping as well.

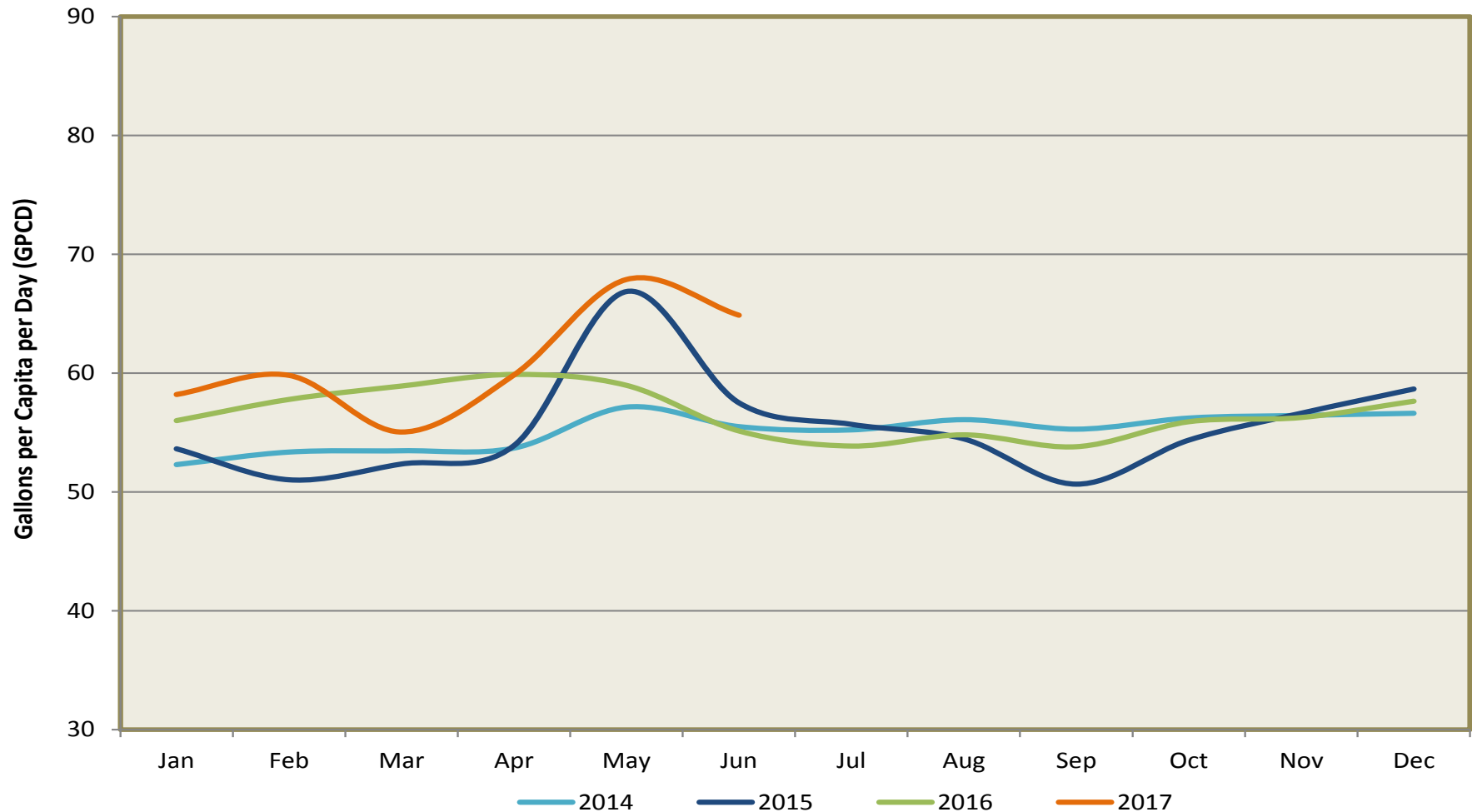
Average Monthly Flows



Annual Daily Gallons Per Capita per Day (GPCD): **2014** - 62 GPCD **2015** - 56 GPCD **2016** - 64 GPCD

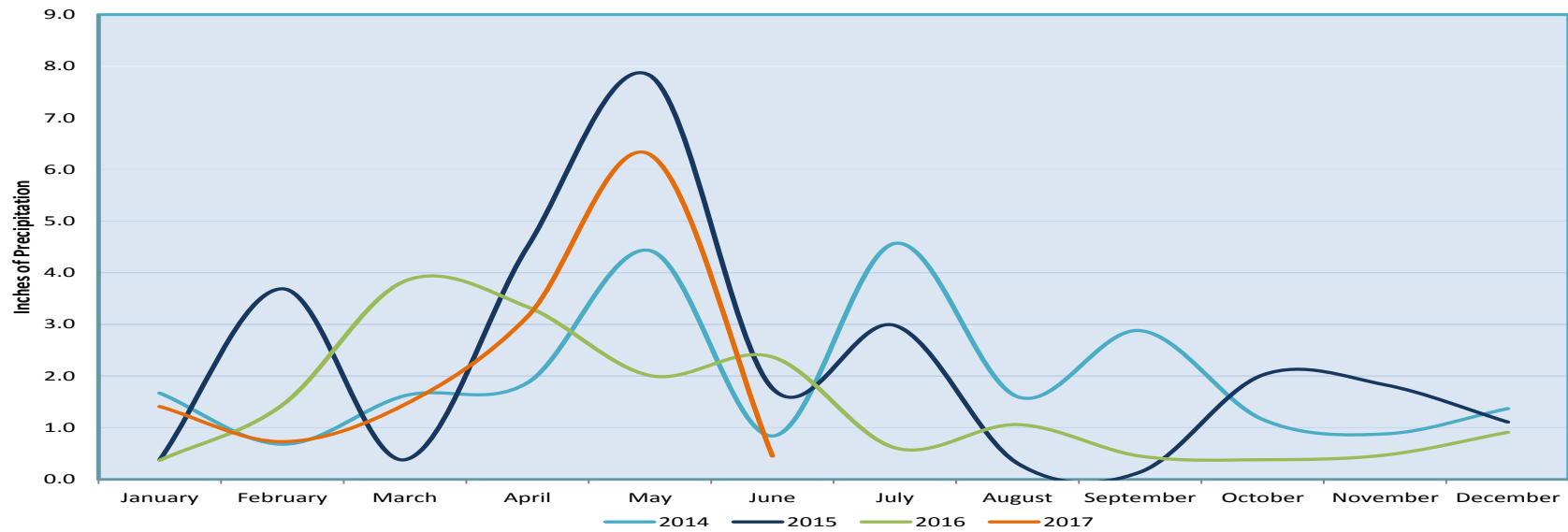
This graph depicts customer indoor water usage. May 2017 had the highest usage at 68 gallons, while February and September 2015 had the lowest usage at 51 gallons. Overall flows into the wastewater treatment plant are trending slightly upward over this period. Increased population appears to be offset by more efficient water use indoors, and possibly new homes with water saving appliances and fixtures. Worth noting again is the effect of precipitation in May of 2015 and 2016. Late summer, with relatively little precipitation, is a good indicator of true daily usage.

Average Daily Usage Per Capita

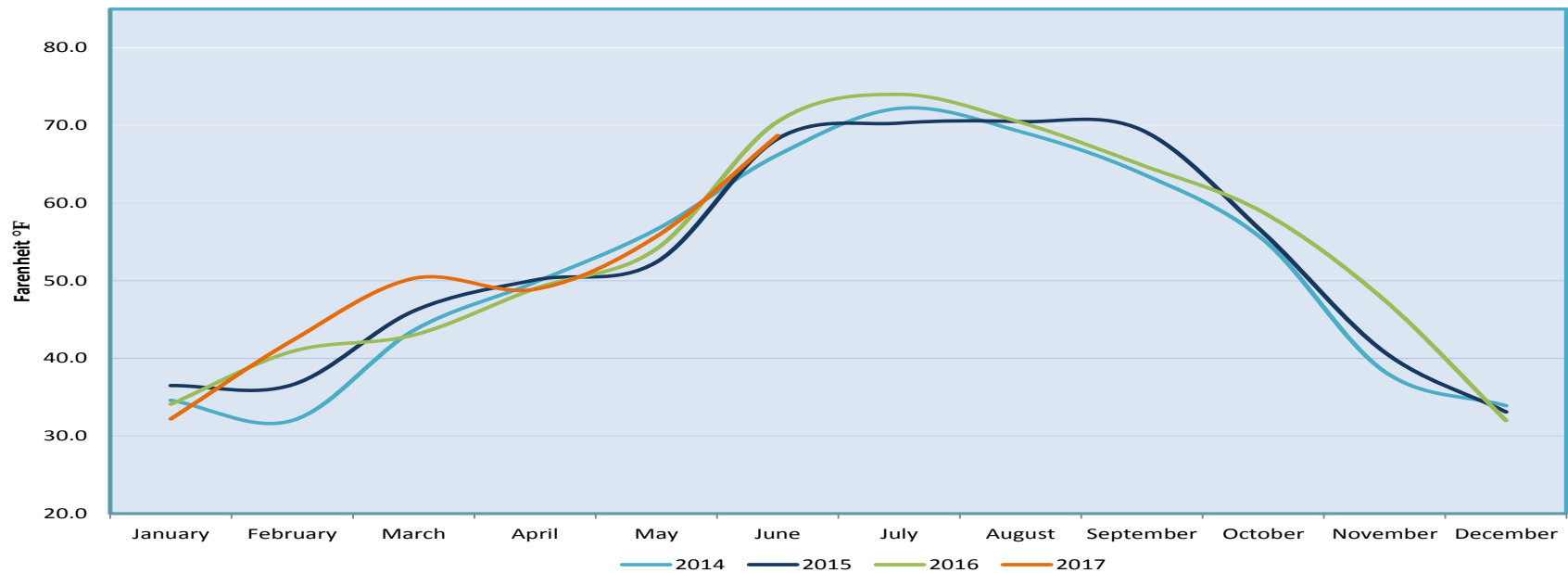


Monthly Data for Boulder – National Oceanic and Atmospheric Administration (NOAA)

Precipitation

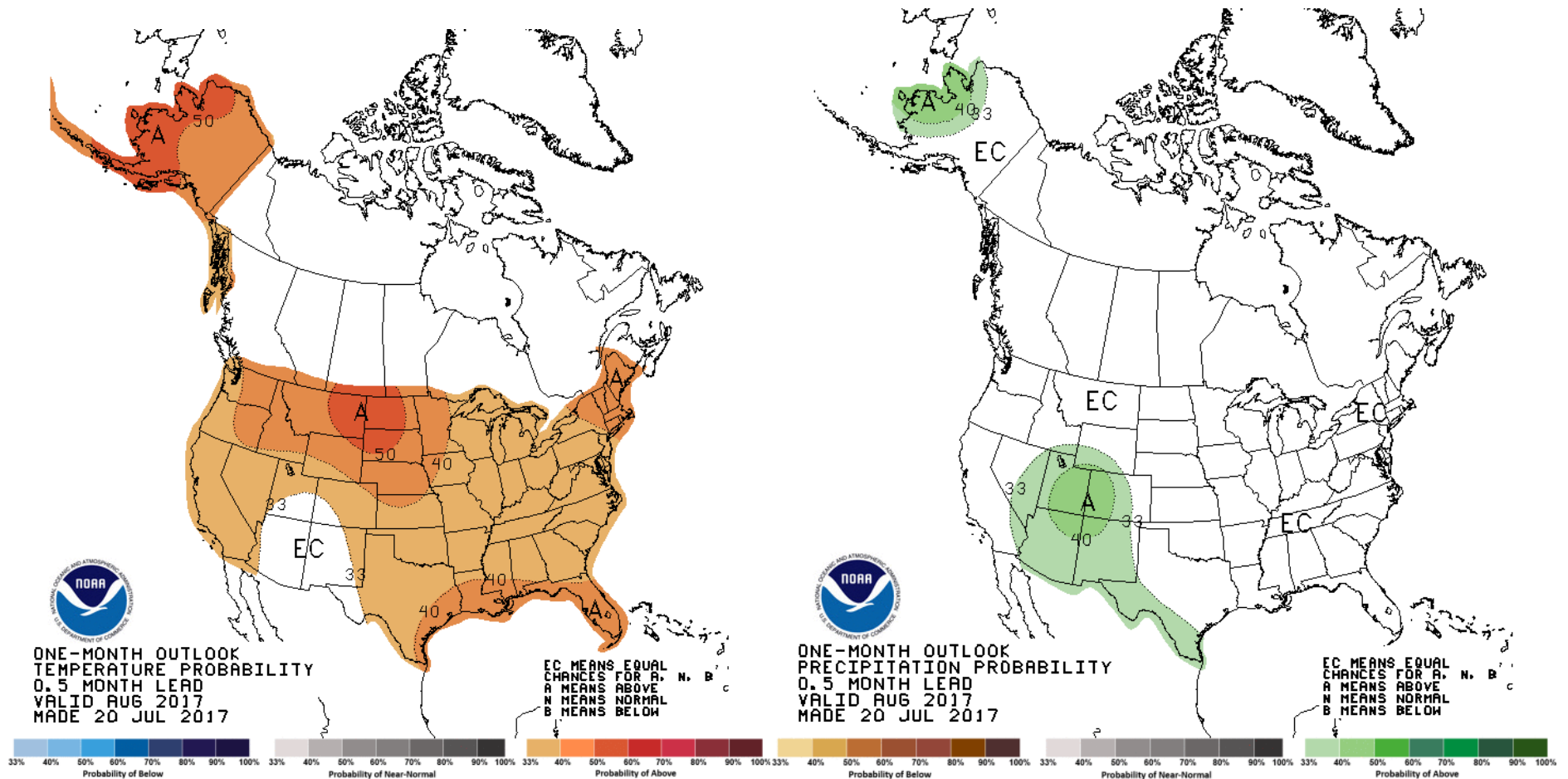


Mean Temperature



1 Month Weather Forecasts – NOAA

NOAA is predicting a 40% chance of above normal temperatures for Colorado in August and 33-40% chance of above normal precipitation. The drought monitor, as of July 25, shows dry conditions increasing in the state.



U.S. Drought Monitor Colorado

July 25, 2017

(Released Thursday, Jul. 27, 2017)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	60.05	39.95	0.00	0.00	0.00	0.00
Last Week 07-18-2017	64.47	35.53	0.00	0.00	0.00	0.00
3 Months Ago 04-25-2017	64.25	35.75	8.73	0.00	0.00	0.00
Start of Calendar Year 01-03-2017	31.88	68.12	37.21	2.88	0.00	0.00
Start of Water Year 09-27-2016	70.49	29.51	2.45	0.00	0.00	0.00
One Year Ago 07-26-2016	80.95	19.05	0.38	0.00	0.00	0.00

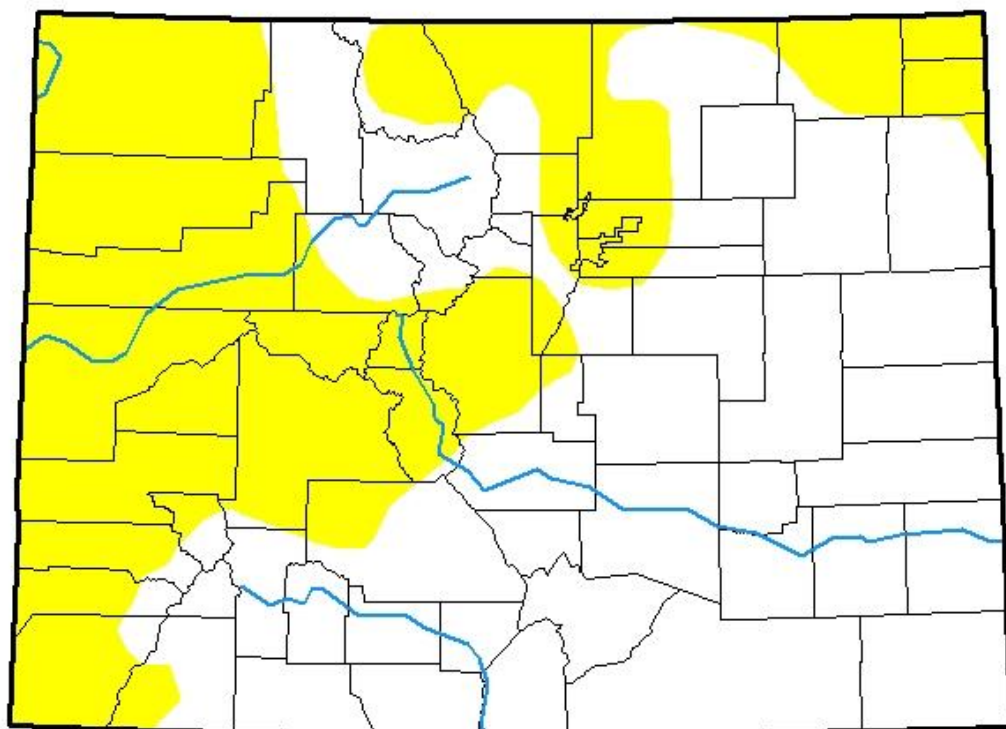
Intensity:

 D0 Abnormally Dry	 D3 Extreme Drought
 D1 Moderate Drought	 D4 Exceptional Drought
 D2 Severe Drought	

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

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NCEI/NOAA



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