

TOWN OF ERIE
BOARD OF TRUSTEES AGENDA ITEM
Board Meeting Date: April 25, 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: Gary Behlen, Public Works Director
Todd Fessenden, Deputy Public Works Director – Utilities

FISCAL INFORMATION:

Cost as Recommended: N/A

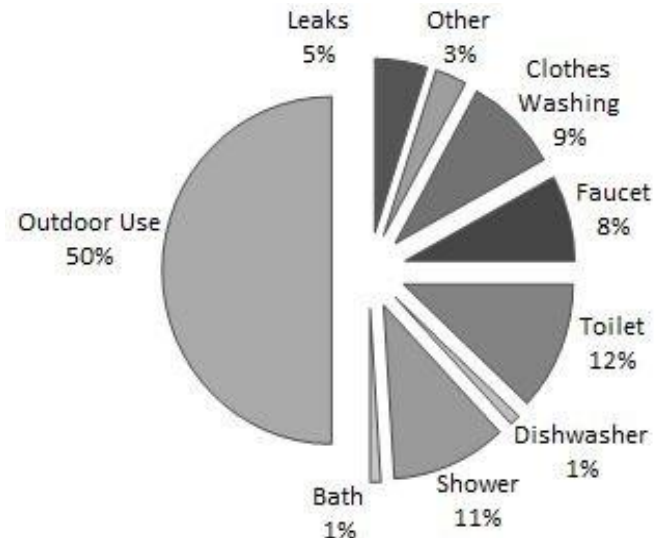
Balance Available: N/A

Budget Line Item Number: N/A

New Appropriation Required: No

STAFF RECOMMENDATION: N/A

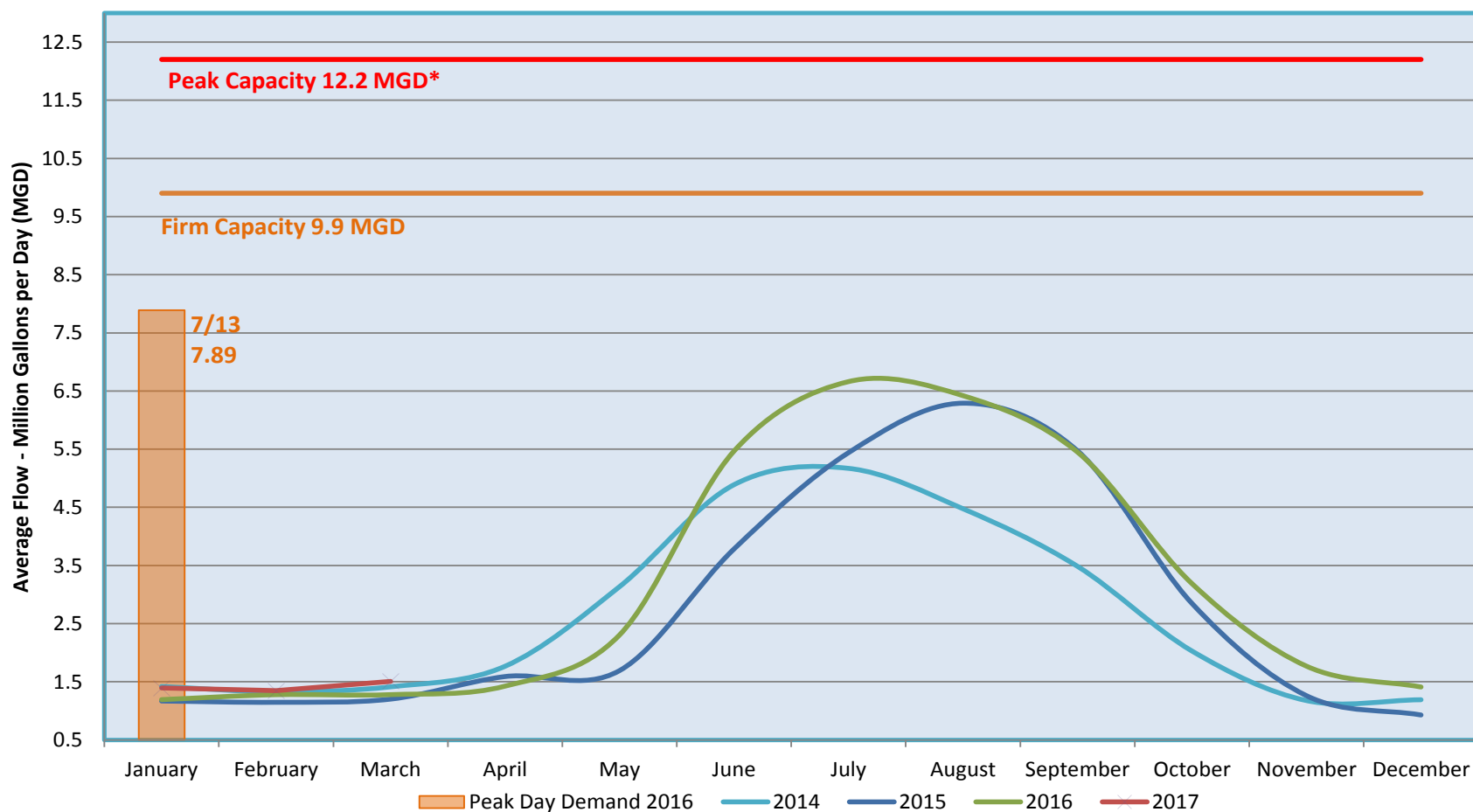
SUMMARY AND BACKGROUND OF SUBJECT MATTER: The Water Treatment and Water Reclamation graphs depict the monthly production averages and the average per capita usage based on the population within the system at the Lynn R. Morgan Water Treatment Facility and North Water Reclamation Facility 2014 - 2017. 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.



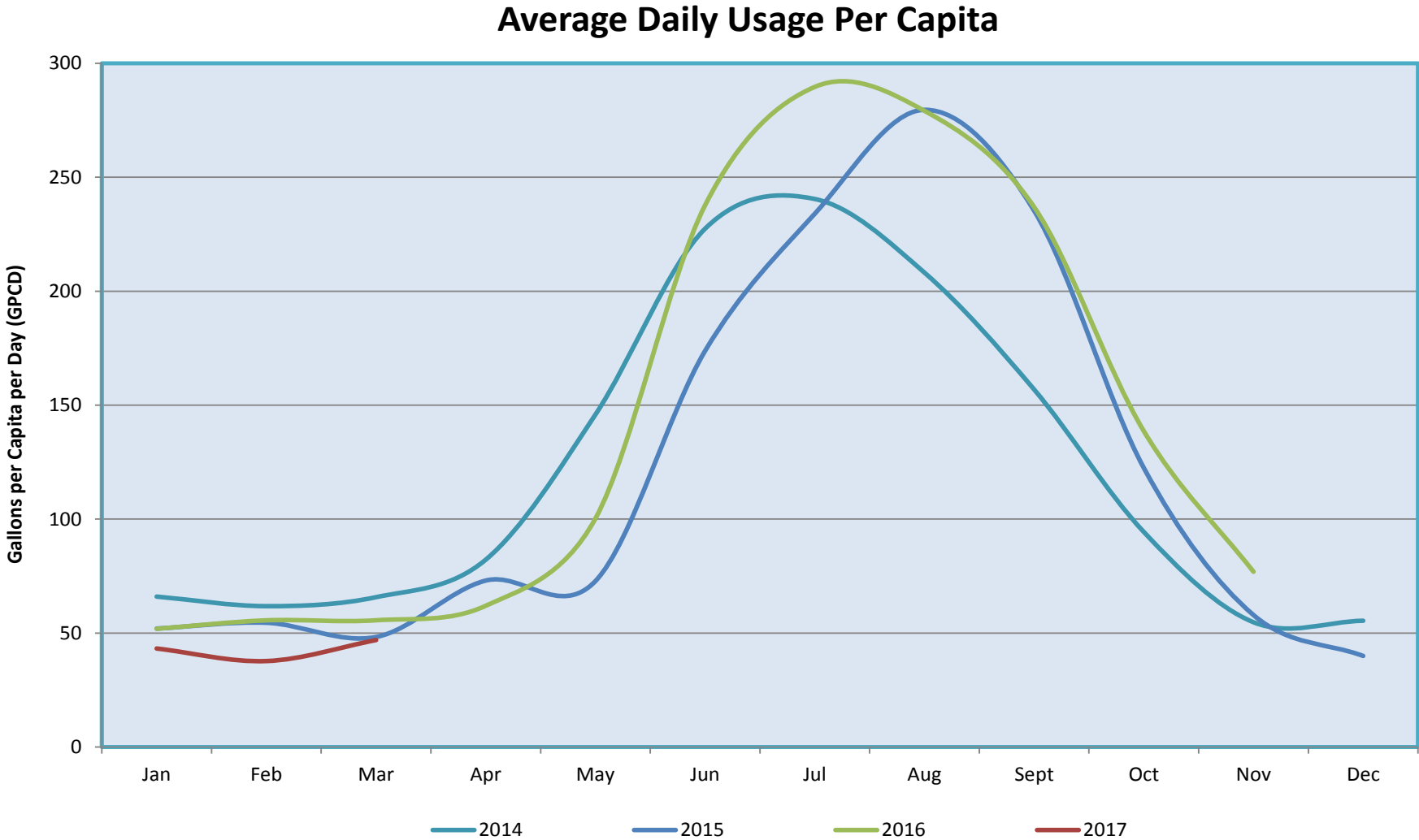
Lynn J. Morgan Water Treatment Facility

Annual Daily Average Flow: **2014**~ 2.62 million gallons **2015**~ 2.74 million gallons **2016**~ 3.31 million gallons. July 2016 has the highest flows at 6.66 million gallons, while December 2015 had the lowest flows at 0.93 million gallons. Summer demands greatly affect the annual average due to outdoor irrigation. Peak hourly demands can reach double our treatment capacity, however our water storage tanks help attenuate the need for additional production capacity. The demand trends follow both temperature and, more significantly, precipitation. 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 overall more consistent precipitation than in the summers of 2015 and 2016.

Average Monthly Production



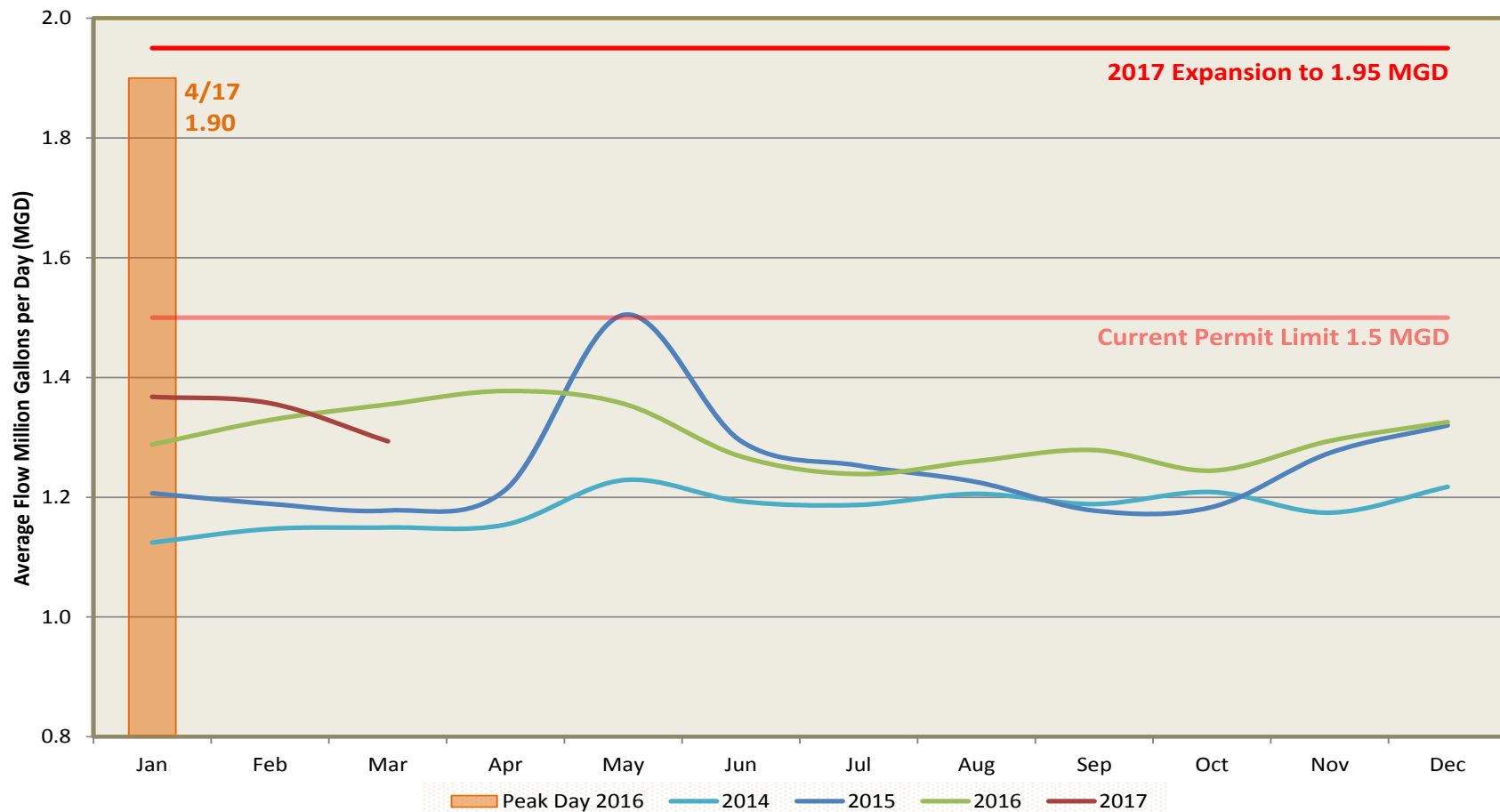
Annual Daily average gallons per capita usage: **2014**~ 122 gallons per capita **2015**~ 120 gallons per capita **2016**~ 144 gallons per capita. July 2016 had the highest usage at 290 gallons per capita per day (GPCD), while December 2015 had the lowest usage at 40 gallons per capita. Reducing summer irrigation and increasing reuse water availability will reduce reliance on treated water supplies in the future.



North Water Reclamation Facility

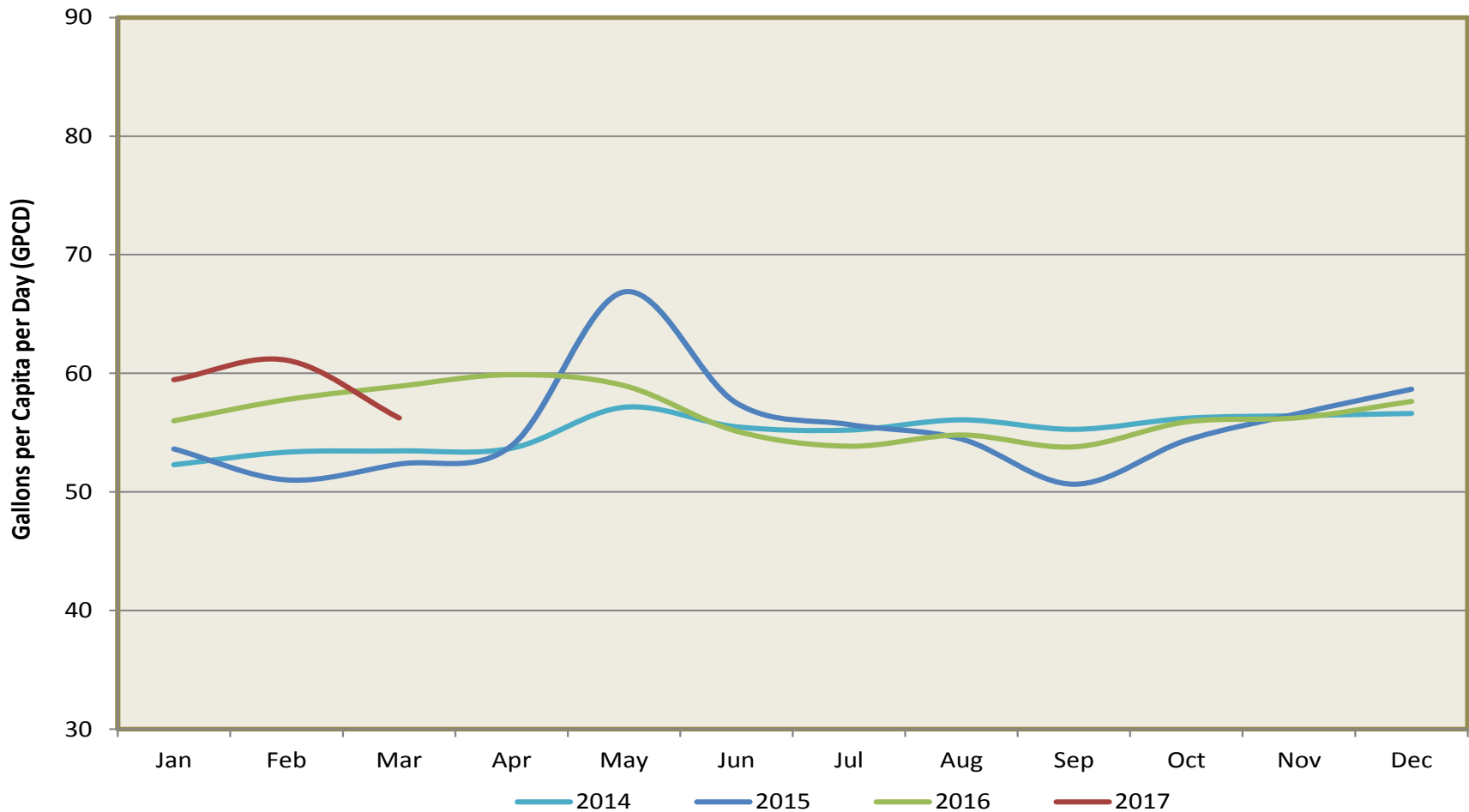
Annual Daily average flow: **2014**~ 1.30 million gallons **2015**~ 1.26 million gallons **2016**~ 1.47 million gallons, **2017**~ 1.56 million gallons (YTD). January 2017 had the highest average at 1.58 million gallons, while January 2014 had the lowest average of 1.12 million gallons. The peak day in 2016 was preceded by significant snow fall; when snow melts off it can find pathways into the sewer collection system as infiltration and inflow (I&I). This is also evident when looking at May 2015 and corresponding precipitation records (below). We are currently monitoring flows at various locations within the collection system. This will allow us to address areas where I&I may be making its way into the system, and defer costly plant expansions. This facility is currently under construction for an expansion project which will increase its capacity to 1.95 million gallons per day (MGD). Per State of Colorado regulations, facilities must begin planning for expansion when 80% of the rated flow capacity is reached, based on average monthly flows. The current expansion will also allow for more efficient process operations at the plant and enhanced treatment.

Average Monthly Flows



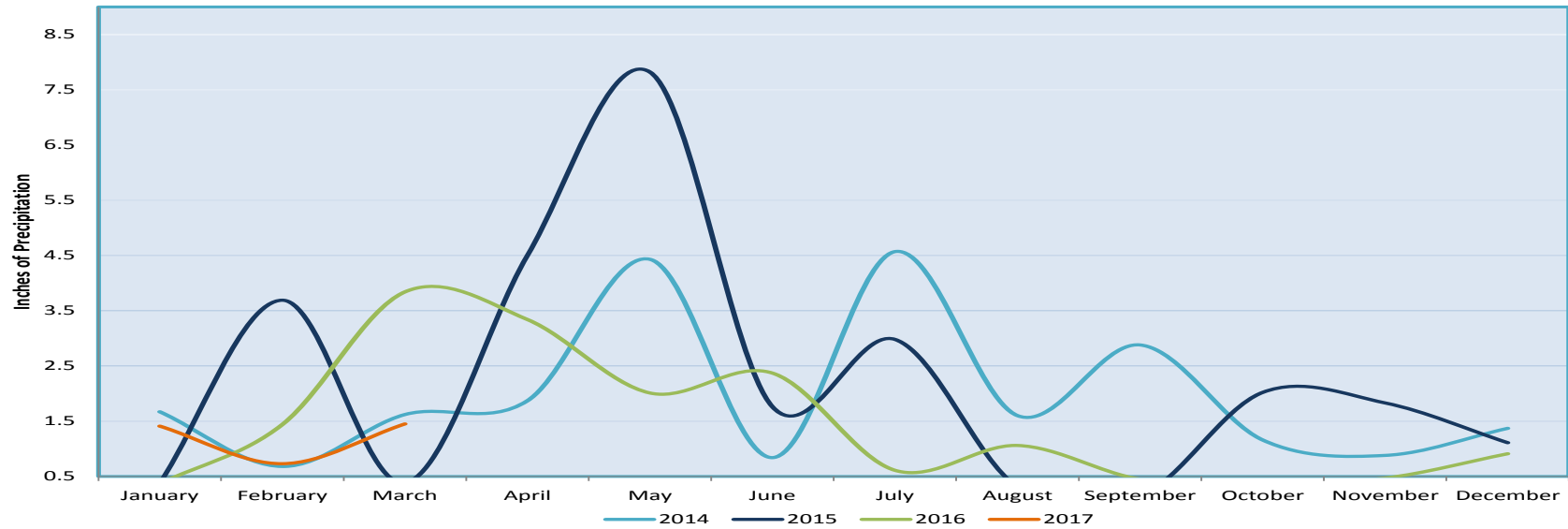
Annual Daily average per capita usage: **2014**~ 62 gallons per capita **2015**~ 56 gallons per capita **2016**~ 64 gallons per capita **2017**~ 68 gallons per capita (YTD). April 2016 had the highest usage at 69 gallons, while February and September 2015 had the lowest usage at 51 gallons. This graph depicts customer indoor water usage. 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 early 2016.

Average Daily Usage Per Capita



Monthly Data for Boulder – National Oceanic and Atmospheric Administration

Precipitation



Mean Temperature

