



Portsmouth and Pease International Tradeport Water Supply Status Report April 6, 2020

Current Status of Water Supply

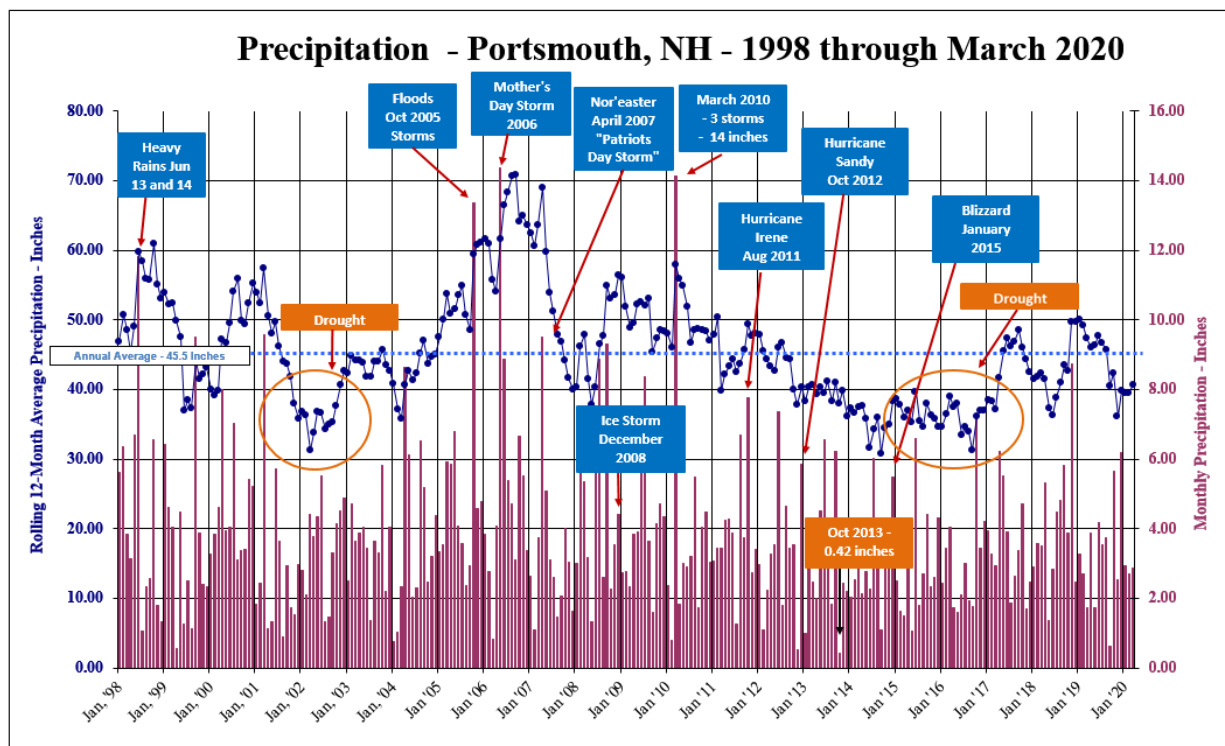
The City's Regional Water System staff are continuing to operate, monitor and maintain the Portsmouth and Pease Tradeport Water Treatment systems during this Covid-19 virus. Staffing has been adjusted to provide ample system coverage while protecting our water system operators as much as possible. Our source waters are chlorinated for adequate disinfection, monitored continuously for chlorine residuals and sampled throughout the water system to assure proper treatment continues. Currently, water supply is adequately meeting demand and there are no issues with water quality.

Water supplied to Portsmouth water system customers comes from a combination of surface water and groundwater sources. The surface water supply is the Bellamy Reservoir, which is located in Madbury and Dover. Water flows from the reservoir to the Water Treatment Facility (WTF) in Madbury, where it is treated using a coagulation, dissolved air floatation and dual media filtration process. The treated water is chlorinated with sodium hypochlorite before distribution into the system. Sodium hydroxide (used to adjust the final pH and alkalinity), fluoride as hydrofluorosilicic acid (used to prevent tooth decay) and poly/ortho-phosphate (a sequestering chemical to reduce precipitation of iron and manganese, and inhibit corrosion is used to protect distribution system pipes) are also added before distribution to our regionally served water customers.

Water supplied to Pease Tradeport water system customers comes primarily from the groundwater wells located on the Tradeport (Harrison Well and Smith Well). Portsmouth water system (EPA PWSID# 1951010) supplies water to the Pease Tradeport water system as needed.

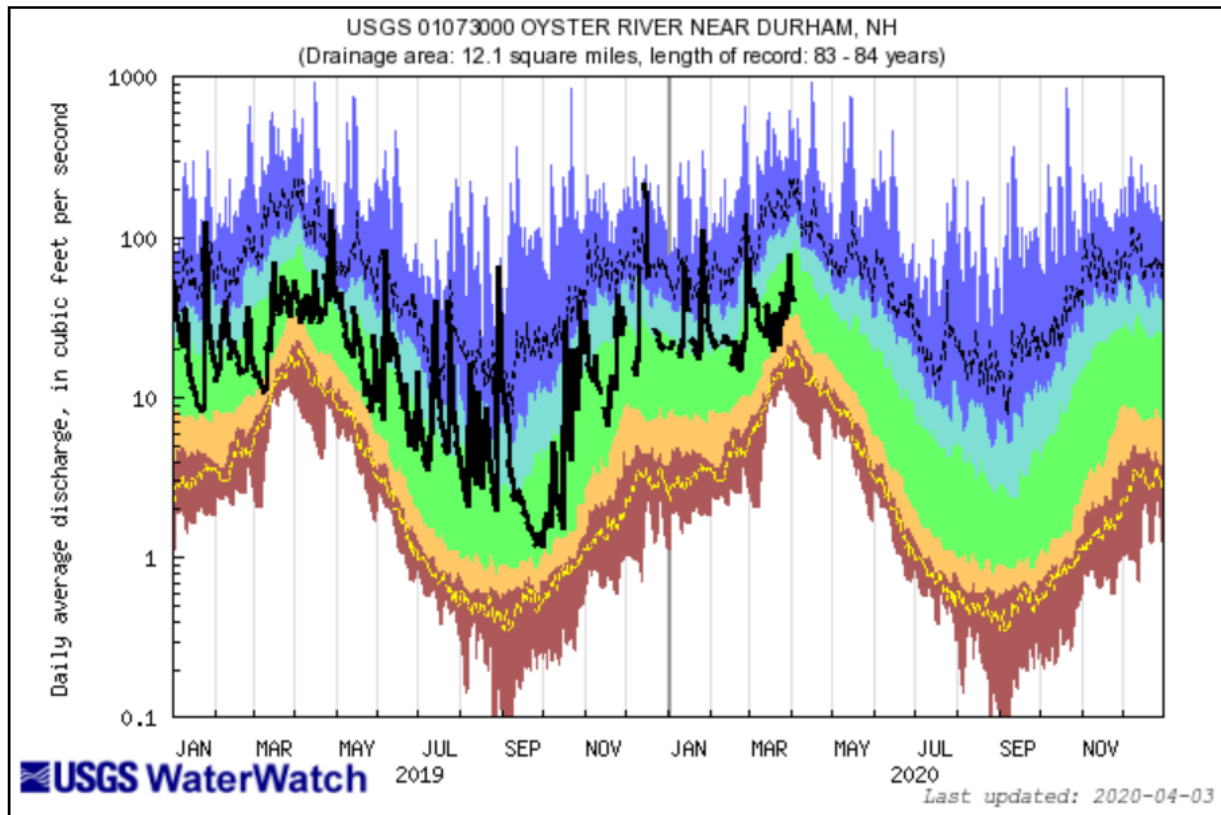
Precipitation and Weather

Currently, water supply conditions for the Portsmouth water system are in good condition. We received just above normal precipitation for the Portsmouth area in the final three months of 2019 and has received close to normal precipitation through the end of March 2020. The current 12-month rolling average precipitation totals nearly 41 inches, which is just below normal. However, the rainfall events this year have mostly been long in duration rather than brief showers, which has allowed the water to soak into the ground and recharge our water sources. The following graphic shows the monthly precipitation as recorded at the Pease NOAA weather station since 1998. As shown, precipitation in the Portsmouth area is highly variable and is greatly impacted by storm events. The blue line shows the rolling 12-month average precipitation as compared to the annual average, which is currently showing just below normal average.



Reservoir Levels and Flow

The current river flow, according to the gauged Oyster River, which we use to assess the flow into the Bellamy Reservoir, is above normal for this time of year per the following USGS graphic:



Explanation - Percentile classes						
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile - highest
Much below Normal	Below normal	Normal	Above normal	Much above normal		Flow

The above graphic shows two years of gauged flow in the stream compared to below normal, normal and above normal flows. With the exception of June and July 2018, streamflows have been at or above normal for this period. The trend also shows the effect of the dry period of September 2019 when streamflows were approaching below normal conditions, only to bounce back up with the rainfall in October 2019 through March 2020.

Groundwater Levels and Status

Groundwater levels in most of our water sources are much better than normal. In fact, some of the well levels are higher than they have been in years. This can be somewhat attributed to the way we received precipitation, however, it can also be attributed to our water operations staff's optimization of the use of surface water versus groundwater. Cutting back our groundwater withdrawals has allowed well levels to be maintained in a sustainable manner and more water availability for the system to meet peak demand. Each well has a continuous water level meter and the water pumped is also metered. This allows system operators the capability of assessing groundwater level trends and we are able to determine overall source of supply capability.

Water Production

The water produced by the combined Portsmouth/Pease water system averaged 3.27 million gallons per day in March. This about 10 percent below average and is reflective of the recent business shutdowns due to the Covid-19 response. Through diligent management of our water distribution system and service pipelines we have also been able to identify and fix a number of leaking pipes. The reduction of water lost in these pipes has reduced the overall water production needs in the systems. It is now standard practice for our staff to continually inspect our water system for leaks. With 200 plus miles of water pipelines this is a lot of effort.

Water Efficiency Rebates

The City also continues to offer water efficiency rebates of \$100 per low flow toilet and \$150 for the purchase of a high efficiency washing machine. These are available to all residential customers, including multi-family customers. To date, nearly 1,000 rebates have been issued. Additional information on this program can be obtained from the City's water billing department or from the City's website:

<https://www.cityofportsmouth.com/publicworks/water-efficiency-rebate-program>

Water Quality Information

The Portsmouth Water Division routinely monitors water quality parameters and performs water quality sampling and analysis as directed by the Federal Safe Drinking Water Act and the New Hampshire Department of Environmental Services. Water sources are monitored for radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. Critical water treatment parameters for turbidity, pH, chlorine, orthophosphate and fluoride are continually monitored and tracked by our system operators. The regulations require us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are reported, along with the year in which the sample was taken. Annual Water Quality Reports for both water systems detail these efforts and are mailed to each water system customer annually. They are also available on the City's website at:

<https://www.cityofportsmouth.com/publicworks/water/drinking-water-quality>

- **PFAS Tracking**

Our efforts to track and treat the PFAS contamination at the Pease International Tradeport continue. PFAS stands for a broad group of perfluoroalkyl and polyfluoroalkyl substances, produced and found in many commercial products and also used in firefighting foam. Per- and polyfluoroalkyl substances (PFAS) are currently unregulated by the Safe Drinking Water Act. However, the EPA Health Advisory concentration standard is 70 parts per trillion (ppt) for perfluorooctane-sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). In response to the discovery of PFOS in the Haven Well in May 2014 at levels that exceeded the EPA Provisional Health Advisory (200 ppt at that time), the Haven Well was removed from service. This well has remained disconnected from the Pease Tradeport water system since this finding. The source of the PFAS at the Tradeport was aqueous film-forming foam that had been used to extinguish fires and in training exercises at the former Air Force Base. Since 2014, the Harrison Well and Smith Well on the Pease Tradeport water system, and Portsmouth Well #1 and Collins Well in the Portsmouth water system, have been routinely monitored for PFAS by the Air Force.

Activated carbon filters continue to treat the Harrison and Smith wells at Pease while an entirely new treatment facility is constructed to treat those two wells together with the reactivation of the Haven well when the construction is completed in the summer of 2021. PFAS tracking of the other Portsmouth surface and groundwater drinking sources continues on a quarterly basis and all data is posted on the city's website.

The State of New Hampshire promulgated maximum contaminant level (MCL) regulations for four compounds in 2019 – PFOA, PFOS, PFHxS and PFNA. However, enforcement of these regulations is currently on hold due to a lawsuit filed in late 2019. Despite this, we are continuing to sample quarterly according to these regulations and post that data on the City's website at: www.cityofportsmouth.com/publicworks/water.

Further Updates and Information

This information will be distributed electronically on the City of Portsmouth's website in the Department of Public Works > Operations > Water section. If anyone needs additional information or has questions contact Al Pratt, Water Supply Operations Manager at 520-0622 or Brian Goetz, Deputy Director of Public Works at 766-1420.