



Pembroke Water Works

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February 22, 2022

City Council
41 Green Street
Concord, NH 03301

Re: Water System Interconnection to Pembroke Water Works

Dear City Councilors:

Pembroke Water Works operates five (5) gravel packed water supply wells in three locations in the Town of Pembroke. Wells #2 and #3 are located on Route 3, along the southeastern shore of the Soucook River, near the Concord-Pembroke Town line. PFAS has been detected above the State's allowable maximum contaminant level (MCL) in these wells, which has caused us to modify operation of the wellfield in attempt to reduce PFAS concentrations to below MCLs in the finished water.

In 2021 we hired Underwood Engineers to perform an evaluation of alternatives for PFAS mitigation. They evaluated four primary alternatives, which included:

- Treatment of Wells #2 & #3 to remove PFAS
- Interconnection to the City of Concord (on Route 106, or on Route 3)
- Replacement of Wells #2 & #3 with a new groundwater source somewhere else in Town
- Connection to the City of Concord's Pembroke Wellfield

There were many unknowns with each alternative, and none came out a clear "winner". However, the least expensive alternative appears to be a connection to the City of Concord on Route 106. Additionally, municipal interconnections can be beneficial for both parties when emergencies occur.

Since the PWW system operates at a slightly higher hydraulic grade line than the Concord system, a booster pump station would be needed at the interconnect, as well as metering facilities. Additionally, PWW currently uses hypochlorite/free chlorine for disinfection, whereas the City uses chloramination, so PWW would either need to switch to chloramination, or would need to breakpoint chlorinate at the interconnection to convert the chloramines to free chlorine.

The long term sustainable safe yield of the existing Concord/Rte 3 Wells #2 and #3 is unknown, but believed to be between 700 gpm and 1,100 gpm. The wells are currently being pumped at about 350 gpm three days a week in attempt to mitigate PFAS concentrations. These wells used to be pumped at about 400 gpm four days a week.

We would like to meet with you to discuss if such an interconnect would be possible, and if so, what the terms might be and available capacity.

In addition, although the City's Pembroke wellfield is a long distance from the current PWW distribution system, and the wellfield needs substantial infrastructure upgrades, and is therefore not one of the most cost-effective alternatives, we would also like to discuss your plans for this wellfield, and possible future options that might exist.

Please let us know the best way to discuss this situation, possible options, and the Council's position. If you have questions or would like additional information in the meantime, please don't hesitate to contact PWW Superintendent Matt Gagne.

Very truly yours,

Matthew Gagne, Superintendent
on behalf of
Pembroke Water Works Board of Commissioners
Kevin Brasley, Christopher Culberson, Larry Plourde, Ed Lavallee & Chet Martel
346 Pembroke Street
Pembroke, NH 03275

Cc: Lynnette Carney, Underwood Engineers
Marco Philippon, City of Concord