

To the town of Wilmington, Wilmington select board and town manager.

As a town employee and a non-registered voter in the town of Wilmington, I felt it was my job to support the route 9 East water and sewer expansion project and couldn't stand up at town meeting to speak against it as it was being designed, so I'm taking the time to put into writing, so there is no confusion on my thoughts as the Chief Operator for the last 30 years, the only licensed operator the Wilmington Water District has ever known, on this particular project.

Prior to January 1, 2021, I sat as the chair of WWD board of water commissioners for a number of years. In 2019 or 2020 I was approached by Gretchen Havreluk and asked if we would consider extending the water line on rt 9 East to the health center. The health center wanted to connect to the town sewer and the town had a grant to lay the line but to secure the grant they needed municipal water to be provided as well. My answer was no, and I explained why for the first time back in 2019-20. My suggestion was, since there is a very good aquifer out on that end of town they should drill a well and with 15 connections they would be a public water system and satisfy the grants requirements. (I have been informed I didn't get the time line right on when the town was getting the grant that required both water and sewer to be supplied to move the sewer out to the Health Center, regardless it was early on when I was brought into the conversation and before I became a town employee.

January 1, 2021 was my first day as a town employee, the town and the water district had entered an agreement to merge effective July 1,2021. The dream of extending the water and sewer had never died. Shortly afterward the town hired a engineering firm to do a feasibility study on extending the water and sewer over a mile to the foot of Ballou Hill road and south on route 100 to the health center. The feasibility study stated that development in that area would be unlikely without either extending the existing town water line or developing a new public water system on that end of town. At that time, I suggested for a number of reasons why in my opinion the best option would be developing a new public ground water system on that end of town. The engineering firm decided that extending the existing town water line was the way to go and that was the end of discussion, even while I tried to make my concerns known at the many planning meetings some of you attended, Scott Tucker, John Lazelle Gretchen Havreluk and members of the engineering firm.

As some of you may know, when planning a project, There are three basic phases, In the beginning you have 100% influence over the project and what it will look like with very little money spent. The construction phase, You've lost most of your influence and your spending real money real fast. At completion you've spent all your money, have no influence and have to work with what you've got.

When planning a project they say you should learn all you can before starting a project. On a water system that might look like bringing together and sharing ideas from the town planners, financial officers engineers and water operators. The worst possible design for a distribution system a planner, engineer or operator could design is a long dead end line, as was confirmed by a member of that same engineering firm last week, March 14th at our asset management plan meeting.

I went to several review meetings where we got updates on the projects progress. There I repeatedly brought up the facts you were adding over a mile of dead end line to the towns already longest dead end line, and carrying a chlorine residual or trace amount to the end of the line as required in the water supply rule chapter 21, would be difficult without either increasing the dose of chlorine at the beginning of the water system or pricing in a chlorine booster pump injection station in the project. Some people in the water system already complain of high chlorine residuals, they don't like the taste or odor. I can only imagine the complaints we will receive when we bump the chlorine dose up high enough to carry a trace amount of chlorine to Ballou Hill. The idea of adding a chlorine booster injection station fell on deaf ears. Nitrates form in long stagnant water lines that contribute to Blue Baby Syndrome, nitrates attach themselves to the red blood cells of the infant and wont allow the blood cells to do there job which is carrying oxygen to all the vitals of the infant literally turning the baby blue. The last concern I have are the carcinogens formed by disinfection biproducts that are found in water with a high amounts of organic compounds like surface water or water under the influence of surface water and is disinfected with chlorine, like our water.

Like I mentioned before, I went to several planning meetings and three public information meeting and the town meeting to answer any and all questions about the water portion of the project. Was I surprised no one from the community asked me one question? Not really, one of the three meetings no one from the community even showed up. I was however shocked that not one select person or town manager, charged with over seeing the spending of five million one hundred thousand dollars of tax payers dollars didn't have one question for the Chief operator of the Wilmington Water District's water system. One question and I would have laid this all out for you. Mr. Filler, my wood working teacher taught us, Prior Planning Prevents Piss Poor Performance. Unfortunately in my opinion that boat has sailed.

One thing can be done though to minimize the effects of nitrates and disinfection biproducts forming and trying to maintain a trace amount of chlorine in the water line. Flushing the water line will help if flushed often enough. What's enough? Hard to say, to keep a chlorine residual at the end of the line could require weekly flushing if not more often. One mile of 8" pipe holds approximately 15,000 gallons of water add the mile of 12" pipe ahead of it, that's an additional 30,000 gallons of water. A good flushing program to keep a chlorine residual, slow down growth of nitrates and disinfection byproducts will require dumping 45,000 gallons of treated water on the ground every week. Since the water system is already near capacity, those additional flows from flushing and any properties connecting to the water line will force the water system to increase intake from Haystack Lake. Haystack Lake is a surface water source.

Surface water holds the highest amounts of organic compounds, the thing that contributes to disinfection biproducts. More important than that, I couldn't convince anyone doing a filter pilot study of the lake water was a good idea but back in 2018 when we put in our current cartridge filtration system I was curious so I did my own unofficial filter test. I set up filters up on Haystack, using the same type of filters only much smaller, made by the same manufacturer, calculated surface areas of the two filters and figured flow rates to simulate flows we were using at our water treatment facility.

I set the flow and started the test and returned three days later . The flow had stopped and I changed the filters, set the flow and returned a day and a half later to find the flow reduced dramatically. I figured we got about a day and a half out of the filter but at the water treatment facility we have a bank of five

filters, that means to me we would get about a week of filter life before they needed to be changed. But what do I know?

I know, currently we change the filters 3 or 4 times a year at a cost of \$2500.00 a change out, that's \$10,000 a year. Changing out the filters weekly will cost \$130,000 a year. I know a single family home pays about \$600 a year and adding 15 connections would create about \$9000 in revenue. That would almost pay for 2 weeks of filters, leaving 50 weeks or \$125,000 in filter cost to be paid by the existing 260 paying customers already connected to the water system. If I was running a business and these were my expected returns, I wouldn't do it. If I asked you to invest in this business its likely you wouldn't either.

This scenario isn't sustainable, but fortunately there's always a solution. At some point the water system is going to have to look to develop new source water or construct a conventional filtration plant. These options have a cost associated with them of somewhere between \$2,000,000 to \$5,000,000, depending on your options and your luck. How will this be paid for? It's unlikely it will be a grant. Most likely it will be another bond.

The Wilmington Water District currently has two existing bonds. One has a annual payment of \$43,000 and has about 10 years left. The second payment is about \$24,000 a year and has about 30 years left. To add another bond for 2-5 million seems a little unfair to me. Especially since it was explained to me at this point it wouldn't be a town wide bond, it would be put on the backs of the 260-275 customers connected to the water system.

I hope this information is helpful. I'm not guaranteeing this is the determined outcome, I just think in my opinion this is a likely outcome. I hope this makes at least two people think and there might be some conversations about how you can support the existing customers that are already paying on the high side of the states water rents scale. Revenues from new connections won't pay for the increased water filter cost, perhaps new tax revenue from the economic development could be used to offset those cost. At least someone might want to begin the search for grant money to pay for the development of source water or the construction of a conventional filtration plant, a task I think, to be fair, should have been a part of the planning from the start.

Thank you for the opportunity to go on the record explaining the project from a operator's point of view and why I can't support it.

Please contact me with any questions you may have at my contact information provided.

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