

Aquarion's Dover Water Systems

Status Report – January 7, 2022

Aquarion provides water to customers in three separate water systems in Dover:

- Dover Main System, which is served by three wellfields: Francis, Draper, and Knollwood wellfields.
- Chickering System, which is served by the Chickering wellfield.
- Springdale System, which is served by the Springdale wellfield.

Aquarion acquired these water systems on December 1, 2021. The following is a summary of the work performed to-date to improve water quality and system reliability.

Enhancing monitoring and control systems

Aquarion reviewed the Supervisory Control and Data Acquisition (SCADA) systems at the five wellfields, and has replaced some of the water quality instrumentation, added communications hardware, and revised control programs to improve the consistency of water treatment and improve remote monitoring of system conditions. This work will continue for several months to bring the SCADA systems up to Aquarion's corporate standards and to enhance the remote monitoring and control functionality.

Knollwood Wellfield - Increasing production capacity and improving water treatment

The Knollwood Wellfield (2 wells) and its treatment facility provide water to downtown Dover and the surrounding neighborhoods. The water from the Knollwood wells is better quality than the water from the Francis and Draper wells with respect to both iron and manganese concentrations, which cause discoloration of the water. The Knollwood wellfield also has more capacity than is currently being used. Aquarion has begun a project that will allow for increased use of water from the Knollwood wellfield, and thus allow for decreased use of water from Francis and Draper wellfields. The project for Knollwood wellfield includes:

- Installing larger capacity well pumps, and related electrical upgrades.
- Adding chlorination to the treatment process, including the addition of on-site piping to provide chlorine contact time.
- Increasing the capacity of the chemical system used for pH adjustment.
- Installation of a pressure reducing valve and booster pumps at the Picardy Lane facility to allow water from the Knollwood Wellfield to be distributed further south in the Dover Main distribution system. This also includes installation of additional water mains.

As of December 31, 2021, the Company determined the capacity of the Knollwood wells based on a recent multi-day pump test, developed a conceptual design for the upgraded Knollwood facility, evaluated the distribution system to identify the best location for the aforementioned valves and pumps (i.e. Picardy Lane

facility), developed a conceptual design for the upgrades at the Picardy Lane facility, and identified necessary distribution system piping upgrades.

Aquarion's consulting engineer, Tata & Howard, plans to complete a report summarizing this work by January 21, 2022. The report will include a schedule for the project.

Francis Wellfield - Adding treatment for removal of iron and manganese

Francis Wellfield (3 wells) is the largest producing wellfield in the Dover Main system. The water from these wells contains relatively high levels of manganese and iron, which cause discoloration of the water. Aquarion has begun a project that will include filters to remove the iron and manganese from the water.

As of December 31, 2021, the Company evaluated two treatment scenarios (one with and one without an on-site water storage tank), evaluated site limitations (e.g. wetlands, zoning, and grading), determined permitting requirements, and evaluated various locations for siting a new building to house the new treatment facility.

Aquarion's consulting engineer, Tata & Howard, plans to complete a report summarizing this work by January 28, 2022. The report will include a schedule for the project.

Water Storage – Evaluating the construction of a water storage tank

There is no water storage tank in the Dover Main system other than small, pressurized tanks at each wellfield. The lack of storage can make it difficult to satisfy peak hour demands during summer months. The lack of storage also limits the ability to properly clean/flush the water mains to remove fine sediments of iron and manganese that can accumulate in the water mains and cause discoloration. Aquarion is evaluating the construction of a water storage tank in the system.

As of December 31, 2021, the Company has evaluated two sites for the water storage tank: the Francis Wellfield and the Picardy Lane facility site.

Aquarion's consulting engineer, Tata & Howard, plans to complete a report summarizing this evaluation by January 28, 2022.

Pursuing interconnections with neighboring communities

The distribution piping for the Dover Main system is in close proximity to the distribution system piping for the water systems in both Walpole and Medfield. Aquarion sent letters to public officials in both Walpole and Medfield requesting an exploration of temporary interconnections with their water systems. An interconnection would allow Aquarion to purchase water on a temporary basis, until the projects described above can be implemented. Aquarion plans to follow-up with these public officials in early January to further the discussion on this topic.

Cleaning/Flushing Water Mains

Naturally occurring iron and manganese in some of the well waters are the cause of the discolored water. Trace levels of these minerals in particulate form can accumulate over time and settle in our water mains. When flow through water mains increases or changes direction, these accumulated minerals can be stirred up and discolor the water that flows out of your faucets.

Aquarion is reviewing approaches to cleaning/flushing the water mains in the Dover Main system. Cleaning/flushing is typically done by opening hydrants to allow a high flow of water to pass through the mains, carrying the particulate material out of the mains. Our ability to achieve high hydrant flows is limited in our Dover system due to the lack of water storage in the system. Despite this limitation, we plan to perform this type of flushing starting in January when weather/temperature conditions permit (i.e. above freezing temperatures). We are also evaluating the use of temporary storage and pumping, which would allow us to increase the flows through the mains. A key aspect of this evaluation is finding a site on which large temporary storage tanks could be placed. Finally, we are considering the NO-DES™ technology, which uses a trailer mounted pumping and filtering system to circulate water within sections of the distribution system at higher flowrates than we can currently achieve, thus improving the removal of the accumulated minerals. Since this is a new technology for Massachusetts, the next step for this option is to obtain New Technology Approval from MassDEP. Aquarion will work with NO-DES™ to seek this approval.

Chickering Wellfield – Upgrading instrumentation, control, and electrical systems

The Chickering Wellfield and treatment facility provides water to 15 customers. During the first month of ownership, Aquarion replaced the water quality monitoring instrumentation, upgraded the automated control system, and replaced electrical equipment/systems to improve the consistency of water treatment, reliability, safety, and remote monitoring of system conditions.