

**Aquarion Company Bi-Annual Report on Planned and Completed Capital Improvements
to the Abenaki Water Company Systems**

January 14, 2022

Aquarion Company (“Aquarion”) provides this report pursuant to Order No. 26,549 issued by the New Hampshire Public Utilities Commission (the “Commission”) in Docket DW 21-090 on November 12, 2021 (the “Order”), and the Settlement Agreement dated November 9, 2021 as approved in the Order. Specifically, Section 10.1 of the Settlement Agreement requires Aquarion to provide a bi-annual update of planned and completed capital improvements to the Abenaki Water Company (“Abenaki”) water systems. This report provides the update as of December 31, 2021.

Lakeland

The Lakeland System is located in the northern portion of Belmont, New Hampshire. Planned capital improvements will be primarily focused on incremental SCADA improvements and the installation of stand-by generators. The planned capital improvements as reported in the October 7, 2021 Abenaki Report of System Assets filed in Docket No. DW 20-112 (the “DW 20-112 Report”) are presented below:

Project Description	FY 2021	FY 2022	FY 2023	FY 2024	FY2025
Water System Mapping Improvements	\$ -	\$ 3,000	\$ -	\$ -	\$ -
Replacement of Services	\$ 5,000				
SCADA and Instrumentation Upgrades	\$ -	\$ 35,000	\$ -	\$ -	\$ -
Periodic Meter Replacements	\$ -	\$ -	\$ -	\$ 16,067	\$ -
Generators for Lakeland Well System	\$ -	\$ 70,000	\$ -	\$ -	\$ -
Generator for Plummer Hill Booster Station	\$ -	\$ 35,000	\$ -	\$ -	\$ -
Total:	\$ 5,000	\$ 143,000	\$ -	\$ 16,067	\$ -

Water System Mapping Improvements (2022) – The system mapping has been incorporated into Aquarion’s GIS database. Revisions and adjustments to the mapping will be made as updated information becomes available.

Replacement of Services (2021) – No service replacements were required in 2021. Emergency replacements will be completed as required in future years.

SCADA and Instrumentation Upgrades (2022) – Improvements to the well houses and booster station SCADA systems will be completed in 2022. It is anticipated that the SCADA will be incorporated into Abenaki’s IQ2 monitoring system, for remote monitoring and alarm notifications.

Periodic Meter Replacements (2024) – Meter replacements are scheduled to begin in 2024 as part of a ten-year replacement program.

Generators for Lakeland Well System (2022) – Investigation and specification/sizing of the generators will be determined, with installation of the generators by fall 2022.

Generator for Plummer Hill Booster Station (2022) – Investigation and specification/sizing of the generator will be determined, with installation of the generator by fall 2022.

White Rock

The White Rock System is the oldest portion of the Abenaki water systems, with some of the original infrastructure dating back to 1966. The planned capital requirements consist of routine replacement of infrastructure, upgraded system mapping, incremental investments in SCADA and instrumentation. The White Rock System capital plan also includes significant distribution upgrades and a large project to identify and permit a new source of supply. A portion of planned capital work will be funded by a \$350,000 grant from the New Hampshire Drinking Water and Groundwater Trust Fund ("NHDWGTF"). The planned capital improvements as reported in the DW 20-112 Report are presented below:

Project Description	FY 2021	FY 2022	FY 2023	FY 2024	FY2025
Design and Replacement of Water Mains	\$ -	\$ -	\$ 15,000	\$ 150,000	\$ 15,000
Capitalized Main Breaks	\$ 8,300	\$ -	\$ -	\$ -	\$ -
Water System Mapping Improvements	\$ -		\$ 3,000		
Installation of new of Distribution Valves	\$ -	\$ 50,000	\$ -	\$ -	\$ -
Replacement of Distribution PRVs	\$ 50,000	\$ 10,000	\$ 35,000	\$ 35,000	\$ -
SCADA and Instrumentation Upgrades	\$ -	\$ 35,000	\$ -	\$ -	\$ -
Periodic Meter Replacements	\$ 300	\$ -	\$ -	\$ 9,746	\$ 1,712
Exploration and Construction of New Source of Supply	\$ -	\$ 155,000	\$ 265,000	\$ -	\$ -
Treatment System and Building Upgrades	\$ 90,000	\$ 25,000	\$ -	\$ -	\$ -
Total:	\$ 148,600	\$ 275,000	\$ 318,000	\$ 194,746	\$ 16,712

Capitalized Main Breaks (2021) – There have been no capitalized main breaks since Aquarion’s acquisition of Abenaki.

Water System Mapping Improvements (2023) – The system mapping has been incorporated into Aquarion’s GIS Database. Revisions and adjustments to the mapping will be made as updated information becomes available.

Installation of New Distribution Valves (2022) –The improvements are planned to be completed in 2022 and will be funded by a portion of the \$350,000 NHDWGTF grant identified above.

Replacement of Distribution Pressure Reducing Valves (2021-2024) – Two pressure reducing valves (“PRV”) were planned for replacement in 2021. The project was delayed until 2022 due to a delay in funding approval. Aquarion has obtained a quote from a contractor to inspect the concrete vaults of the two valves identified for replacement, as the first phase of the larger PRV replacement program. The inspections will be done in the spring of 2022, with design ensuing shortly thereafter. The projected completion date is fall 2022. This project will be partially funded by a portion of \$350,000 NHDWGTF grant identified above.

SCADA and Instrumentation Upgrades (2022) – Several system monitoring parameters will be incorporated into Abenaki’s IQ2 monitoring system. The monitored systems

provide valuable information on current operating conditions at a given time. Upgrades for 2022 include pH and free chlorine analyzers for in-person and remote monitoring.

Periodic Meter Replacements (Future) – Meter replacements are scheduled to begin in 2024 as part of a ten-year replacement program.

Exploration and Construction of New Source of Supply (2022-2023) – Aquarion has retained Emery & Garret, a subsidiary of GZA GeoEnvironmental, Inc., as the exploration and exploratory well drilling consultant. A license to access and drill on the Town of Bow property is currently being executed. This project will be partially funded by a portion of \$350,000 NHDWGTF grant identified above.

Treatment System and Building Upgrades (2021-2022) – Construction of the new arsenic treatment system began in November 2021. Due to supply chain issues and long lead times, the permanent treatment vessels were not delivered until late December 2021. As an interim measure, several small vessels were installed to provide temporary treatment. The temporary system was placed in service in November 2021. Fourth quarter samples were taken in December 2021 per New Hampshire Department of Environmental Services (“NHDES”) requirements, and the arsenic level in the treated water was determined to be 2 parts per billion (“ppb”); this is below the Maximum Contaminant Level (“MCL”) of 5 ppb. The first of the two permanent vessels will be installed in January 2022, with the project completion estimated to be in February or March 2022. This project will be partially funded by a portion of \$350,000 NHDWGTF grant identified above.

Tioga River (Belmont)

The Tioga River System is located in Belmont, New Hampshire. Planned capital improvements consist of main replacements, SCADA and instrumentation upgrades, and the installation of a stand-by generator. These planned capital improvements as reported in the DW 20-112 Report are presented below:

Project Description	FY 2021	FY 2022	FY 2023	FY 2024	FY2025
Water System Mapping Improvements	\$ -	\$ -	\$ -	\$ -	\$ 3,000
Services Replacement	\$ 325				
Water Distribution Main Replacements	\$ -	\$ 50,000	\$ -	\$ -	\$ -
SCADA and Instrumentation Upgrades	\$ -	\$ 20,000	\$ -	\$ -	\$ -
Generator for Tigoa River Belmont Wells and Treatment	\$ -	\$ 35,000	\$ -	\$ -	\$ -
Total:	\$ 325	\$ 105,000	\$ -	\$ -	\$ 3,000

Water System Mapping Improvements (2025) – The system mapping will be incorporated into Aquarion’s GIS database. Revisions and adjustments to the mapping will be made as updated information becomes available.

Water Distribution Main Replacements (2022) – Three-hundred linear feet of main replacement is scheduled for Summer 2022. The project is being funded by a \$50,000 Drinking Water State Revolving Fund (“DWSRF”) loan.

SCADA and Instrumentation Upgrades (2022) – Improvements to the pump station will include continuous analyzers to monitor free chlorine levels and pH. SCADA instrumentation will be installed to monitor station parameters, so alarms are sent to system operators when offsite. The monitoring will be incorporated into Abenaki’s IQ2 monitoring system.

Gilford Village

The Gilford Village System is located in the center of Gilford Village and serves several public buildings, including the Gilford Elementary School. The planned capital improvements as reported in the DW 20-112 Report are presented below:

Project Description	FY 2021	FY 2022	FY 2023	FY 2024	FY2025
Replacement of Water Mains	\$ 9,400	\$ 10,000	\$ 130,000	\$ -	\$ -
Capitalized Main Breaks	\$ 13,120	\$ -	\$ -	\$ -	\$ -
Periodic Meter Replacements	\$ 127	\$ -	\$ -	\$ -	\$ -
Replacement of Services	\$ 600	\$ -	\$ -	\$ -	\$ -
SCADA and Instrumentation Upgrades	\$ -	\$ 35,000	\$ -	\$ -	\$ -
Treatment Improvements and Generator	\$ -	\$ 35,000	\$ -	\$ -	\$ -
Total:	\$ 23,247	\$ 80,000	\$ 130,000	\$ -	\$ -

Replacement of Water Mains (2022-2023) – Aquarion is undertaking a leak detection effort for the system to identify any potential locations of leaks. After the leak detection survey, Aquarion will inform the NHDES of areas requiring main replacements by March 31, 2022. Main replacements, where necessary, are expected to begin in the summer of 2022, and continue in 2023.

Capitalized Main Breaks (2022-2025) – No capitalized main breaks have occurred since Aquarion’s acquisition of Abenaki.

Periodic Meter Replacements (2022-2025) – All meters in the system were replaced in 2019. Meters are typically replaced on a 10-year basis, so there are no planned replacements during the 2022-2025 plan years.

SCADA and Instrumentation Upgrades (2022) – Improvements will include continuous analyzers to monitor free chlorine levels and pH. Instrumentation will be installed to monitor station parameters, so alarms are sent to system operators when offsite. The monitoring will be incorporated into Abenaki’s IQ2 monitoring system.

Treatment Improvements and Generator (2022) – The radium removal system consists of three vessels. Due to lead times associated with supply chain issues, two of the three vessels were placed in service in the fall of 2021. The operation of the two vessels reduced the radium to below the MCL required by the NHDES. The remaining equipment necessary to place the third vessel in service is expected to be delivered in the first quarter of 2022.

Rosebrook

The Rosebrook System is located in the Bretton Woods area of the Town of Carroll, New Hampshire. There are high pressures in large areas of the system and mitigating the pressures will be the main focus of capital spending through 2023, as reported in the table below. Several items identified below have been included in the overall pressure reduction project.

Project Description	FY2022	FY2023	FY2024	FY2025
Main Replacements	\$ 80,000	\$ -	\$ -	\$ -
Update Water System Mapping	\$ 5,000	\$ 3,000	\$ -	\$ -
Regulators New	\$ 75,000	\$1,325,000	\$ -	\$ -
SCADA and Instrumentation Upgrades	\$ 35,000	\$ -	\$ -	\$ -
Well Pumps	\$ 80,000	\$ -	\$ -	\$ -
Rosebrook Pressure Reduction	\$150,000	\$1,300,000	\$ -	\$ -
Total	\$345,000	\$2,628,000	\$ -	\$ -

Since the acquisition of Abenaki, Aquarion has been working closely with NHDES to address pressure issues in the Rosebrook System. Aquarion is in the process of finalizing several schematic options for review and preliminary concurrence by the NHDES, prior to meeting with stakeholders and advancing the project. Among the options under consideration are main replacements/relocations, installation of pressure regulators, development of a comprehensive SCADA system, replacement of well pumps to meet pressure reduction goals, and upgrades to the treatment system. More information will be available after concurrence by the NHDES and stakeholders on the preferred option. Capital costs will be defined as the preferred option is chosen.

Other planned capital improvements include the following:

Water System Mapping Improvements (2022-2023) – The system mapping has been incorporated into Aquarion’s GIS database. Revisions and adjustments to the mapping will be made as updated information becomes available.

SCADA and Instrumentation Upgrades (2022) – There will be minor SCADA and instrumentation improvements until more comprehensive improvements are made as part of the pressure reduction project. Improvements will include a continuous chlorine and pH analyzer, and providing capability for remote monitoring and alarms. The improvements will be incorporated into Abenaki’s IQ2 monitoring system.

Well Pumps (2022) – The pumps will be addressed as part of the pressure reduction project.